

PowerFlex® 750-Series AC Drives



USER MANUAL

Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at <http://www.rockwellautomation.com/literature>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary we use notes to make you aware of safety considerations.



WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

Important: Identifies information that is critical for successful application and understanding of the product.



ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequences.



Shock Hazard labels may be located on or inside the equipment (e.g., drive or motor) to alert people that dangerous voltage may be present.



Burn Hazard labels may be located on or inside the equipment (e.g., drive or motor) to alert people that surfaces may be at dangerous temperatures.

PowerFlex, DriveExplorer, DriveExecutive, DPI, and SCANport are either trademarks or registered trademarks of Rockwell Automation, Inc.

This Manual

This is the first release of the PowerFlex 750-Series User Manual.

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Overview

The purpose of this manual is to provide you with the basic information needed to install, start-up and troubleshoot PowerFlex® 750-Series Adjustable Frequency AC Drives.

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Who Should Use This Manual

This manual is intended for qualified personnel. You must be able to program and operate Adjustable Frequency AC Drive devices. In addition, you must have an understanding of the parameter settings and functions.

What Is Not In This Manual

The PowerFlex 750-Series User Manual is designed to provide only basic start-up information. For detailed information on drive application, please refer to the PowerFlex 750-Series Reference Manual. The reference manual is available online at **www.rockwellautomation.com/literature**.

Recommended Documentation

All the recommended documentation listed in this section is available online at **www.rockwellautomation.com/literature**.

The following publications provide general drive information.

Title	Publication
Wiring and Grounding for PWM AC Drives	DRIVES-IN001
Safety Guidelines for the Application, Installation and Maintenance of Solid State Control	SGI-1.1
A Global Reference Guide for Reading Schematic Diagrams	100-2.10
Guarding Against Electrostatic Damage	8000-4.5.2
DeviceLogix User Manual	RA-UM300

The following publications provide specific PowerFlex 750-Series drive features information:

Title	Publication
Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual	20HIM-UM001
PowerFlex 750-Series Safe Torque Off User Manual	750-UM002
Safe Speed Monitor Option Module for PowerFlex 750-Series AC Drives Reference Manual	750-RM001
PowerFlex 7-Class Network Communication Adapter User Manuals	750COM-UM
Dynamic Braking Resistor Calculator	PFLEX-AT001
Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives	DRIVES-IN001

The following publications provide necessary information when applying the DriveLogix Controller:

Title	Publication
DriveLogix5730 Controller User Manual	20D-UM003
PowerFlex 755 Drive & DriveLogix Controller	20D-RN007
Logix5000 Controllers Common Procedures	1756-PM001
Logix5000 Controllers General Instructions	1756-RM003
Logix5000 Controllers Process Control and Drives Instructions	1756-RM006
RSLogix 5000 Getting Results	9399-RLD300GR

The following publications provide information that is useful when planning and installing communication networks:

Title	Publication
ControlNet Coax Tap Installation Instructions	1786-5.7
ControlNet Cable System Planning and Installation Manual	1786-6.2.1
ControlNet Fiber Media Planning and Installation Guide	CNET-IN001

Obtaining Manuals

To order paper copies of technical documentation, contact your local Rockwell Automation distributor or sales representative.

To find your local Rockwell Automation distributor, visit www.rockwellautomation.com/locations

Allen-Bradley Drives Technical Support

Online at...	By Email at...	By Telephone at...
www.ab.com/support/abdrives	support@drives.ra.rockwell.com	262-512-8176

For Automation and Control Technical Support:

Title	Online at...
Rockwell Automation Technical Support	http://support.rockwellautomation.com/knowledgebase

Product Certification

Product Certifications and Declarations of Conformity are available on the internet at: www.rockwellautomation.com/products/certification

Manual Conventions

- In this manual we refer to PowerFlex 750-Series Adjustable Frequency AC Drives as: drive, PowerFlex 750, PowerFlex 750 drive or PowerFlex 750 AC drive.
- Specific drives within the PowerFlex 750-Series may be referred to as:
 - PowerFlex 753, PowerFlex 753 drive or PowerFlex 753 AC drive
 - PowerFlex 755, PowerFlex 755 drive or PowerFlex 755 AC drive
- To help differentiate parameter names and LCD display text from other text, the following conventions will be used:
 - Parameter Names will appear in [brackets] after the Parameter Number.
For example: parameter 308 [Direction Mode].
 - Display text will appear in “quotes.” For example: “Enabled.”
- The following words are used throughout the manual to describe an action:

Word	Meaning
Can	Possible, able to do something
Cannot	Not possible, not able to do something
May	Permitted, allowed
Must	Unavoidable, you must do this
Shall	Required and necessary
Should	Recommended
Should Not	Not recommended

Drive Frame Sizes

Similar PowerFlex 750-Series drive sizes are grouped into frame sizes to simplify spare parts ordering, dimensioning, etc. A cross reference of drive catalog numbers and their respective frame size is provided in [Appendix A](#).

General Precautions

Qualified Personnel



ATTENTION: Only qualified personnel familiar with adjustable frequency AC drives and associated machinery should plan or implement the installation, start-up and subsequent maintenance of the system. Failure to comply may result in personal injury and/or equipment damage.

Personal Safety



ATTENTION: To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged completely before servicing. Check the DC bus voltage at the Power Terminal Block by measuring between the +DC and -DC terminals (refer to [Chapter 1](#) for location), between the +DC terminal and the chassis, and between the -DC terminal and the chassis. The voltage must be zero for all three measurements.



ATTENTION: Hazard of personal injury or equipment damage exists when using bipolar input sources. Noise and drift in sensitive input circuits can cause unpredictable changes in motor speed and direction. Use speed command parameters to help reduce input source sensitivity.



ATTENTION: Risk of injury or equipment damage exists. DPI or SCANport host products must not be directly connected together via 1202 cables. Unpredictable behavior can result if two or more devices are connected in this manner.



ATTENTION: The drive start/stop/enable control circuitry includes solid state components. If hazards due to accidental contact with moving machinery or unintentional flow of liquid, gas or solids exists, an additional hardwired stop circuit may be required to remove the AC line to the drive. An auxiliary braking method may be required.



ATTENTION: Hazard of personal injury or equipment damage due to unexpected machine operation exists if the drive is configured to automatically issue a Start or Run command. Do not use these functions without considering applicable local, national and international codes, standards, regulations or industry guidelines.

Product Safety



ATTENTION: An incorrectly applied or installed drive can result in component damage or a reduction in product life. Wiring or application errors such as under sizing the motor, incorrect or inadequate AC supply, or excessive surrounding air temperatures may result in malfunction of the system.



ATTENTION: This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference Guarding Against Electrostatic Damage, publication 8000-4.5.2 or any other applicable ESD protection handbook.



ATTENTION: Configuring an analog input for 0-20 mA operation and driving it from a voltage source could cause component damage. Verify proper configuration prior to applying input signals.



ATTENTION: A contactor or other device that routinely disconnects and reapplies the AC line to the drive to start and stop the motor can cause drive hardware damage. The drive is designed to use control input signals that will start and stop the motor. If an input device is used, operation must not exceed one cycle per minute or drive damage will occur.

Class 1 LED Product



ATTENTION: Hazard of permanent eye damage exists when using optical transmission equipment. This product emits intense light and invisible radiation. Do not look into module ports or fiber optic cable connectors.

Catalog Number Explanation

Position													
1...3	4	5	6	7	8...10	11	12	13	14	15	16	17	18
20G	1	1	N	D	248	A	A	0	N	N	N	N	N
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>						

a

Drive	
Code	Type
20G	PowerFlex 755

b

Future Use	

c

Input Type		
Code	Description	Frames
1	6 Pulse, w/DC Terminals	2...7
A	6 Pulse, w/o DC Terminals	6, 7

d

Enclosure	
Code	Description
F	Flange (NEMA/UL Type 4X back) ‡
G	IP54, NEMA/UL Type 12 §
N	IP20/IP00, NEMA/UL Type Open *

‡ Frames 6...7 User Installed Flange Kit (see [R-1826961]) provides a NEMA/UL Type 4X back.

§ Frames 2...5 only.

* Frames 2...5 are IP20, Frames 6...7 are IP00.

e

Voltage Rating	
Code	Voltage
C	400V AC
D	480V AC

f1

ND Rating				
400V, 50 Hz Input				
Code	Amps	kW	Frame	
			Enclosure Codes F and N	Enclosure Code G
015	15.4	7.5	2	2
022	22	11	2	2
030	30	15	3	3
037	37	18.5	3	3
043	43	22	3	3
060	60	30	4	4
072	72	37	4	5
085	85	45	5	5
104	104	55	5	–
140	140	75	6	–
170	170	90	6	–
205	205	110	6	–
260	260	132	6	–
302	302	160	7	–
367	367	200	7	–
456	456	250	7	–

f2

ND Rating				
480V, 60 Hz Input				
Code	Amps	Hp	Frame	
			Enclosure Codes F and N	Enclosure Code G
014	14	10	2	2
022	22	15	2	2
027	27	20	3	3
034	34	25	3	3
040	40	30	3	3
052	52	40	4	4
065	65	50	4	5
077	77	60	5	5
096	96	75	5	–
125	125	100	6	–
156	156	125	6	–
186	186	150	6	–
248	248	200	6	–
302	302	250	7	–
361	361	300	7	–
415	415	350	7	–

g

Filtering and CM Cap Configuration		
Code	Filtering	Default CM Cap Connection
A >	Yes	Jumper Removed
J >	Yes	Jumper Installed

➤ In all cases, jumpers are included for field reconfiguration as desired.

h

Dynamic Braking		
Code	Internal Resistor %	Internal Transistor †
A	No	Yes
B	Yes	Yes
N	No	No

‡ Frame 2 only.
† Standard on Frames 2...5, Optional on Frames 6...7.

750-Series Drive Options

Description	Cat. No.
24V I/O Module - 2AI, 2AO, 6DI, 2RO	20-750-2262C-2R
115V I/O Module - 2AI, 2AO, 6DI, 2RO	20-750-2262D-2R
24V I/O Module - 2AI, 2AO, 6DI, 1RO, 2TO	20-750-2263C-1R2T
Incremental Encoder	20-750-ENC-1
Dual Incremental Encoder	20-750-DENC-1
Universal Feedback	20-750-UFB-1
24V Auxiliary Power Supply	20-750-APS
Safe Torque Off	20-750-S
Safe Speed Monitor	20-750-S1
DeviceNet Communication	20-750-DNET
20COMM Carrier	20-750-20COMM
PowerFlex 7-Class Enhanced HIM, NEMA 1	20-750-HIM-A6
PowerFlex 7-Class Remote Enhanced HIM, NEMA 4X/12	20-750-HIM-C6S

Installation/Wiring

Chapter Objectives

This chapter provides the information needed to mount and wire PowerFlex[®] 750-Series AC drives, frames 2...7.

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Mounting Considerations	1-4
AC Supply Source Considerations	1-5
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CE Conformity	1-37

Most start-up difficulties are the result of incorrect wiring. Every precaution must be taken to assure that the wiring is done as instructed. All items must be read and understood before the actual installation begins.



ATTENTION: The following information is merely a guide for proper installation. Rockwell Automation, Inc. cannot assume responsibility for the compliance or the noncompliance to any code, national, local or otherwise for the proper installation of this drive or associated equipment. A hazard of personal injury and/or equipment damage exists if codes are ignored during installation.

Opening the Cover

Figure 1.1 IP20, NEMA/UL Open Type, Frames 2...5

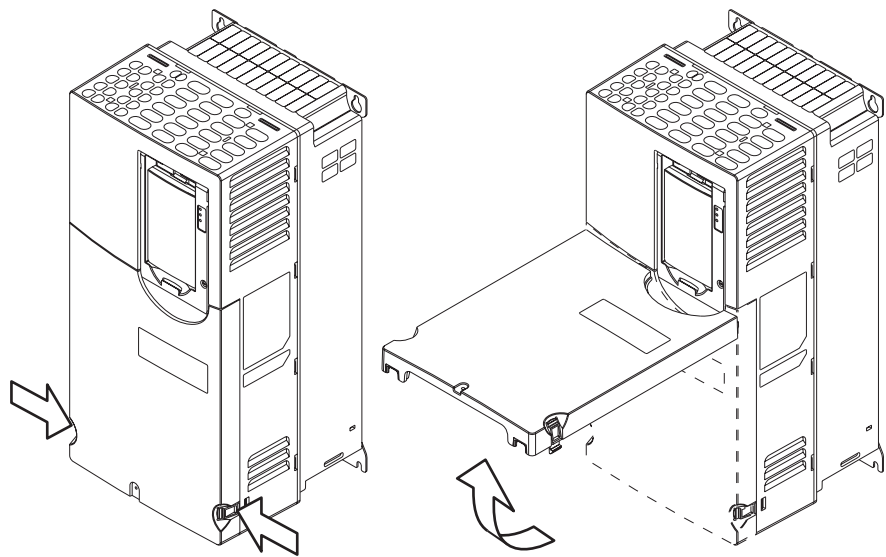
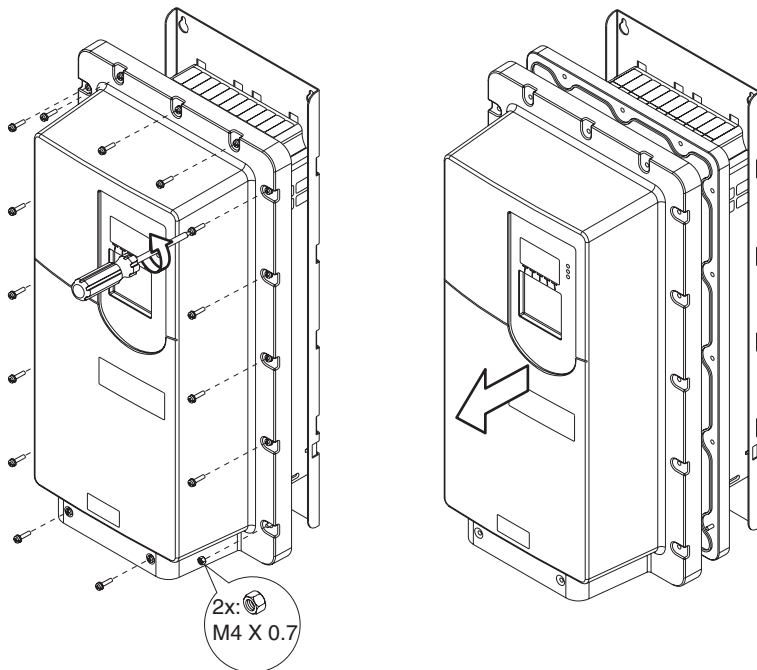
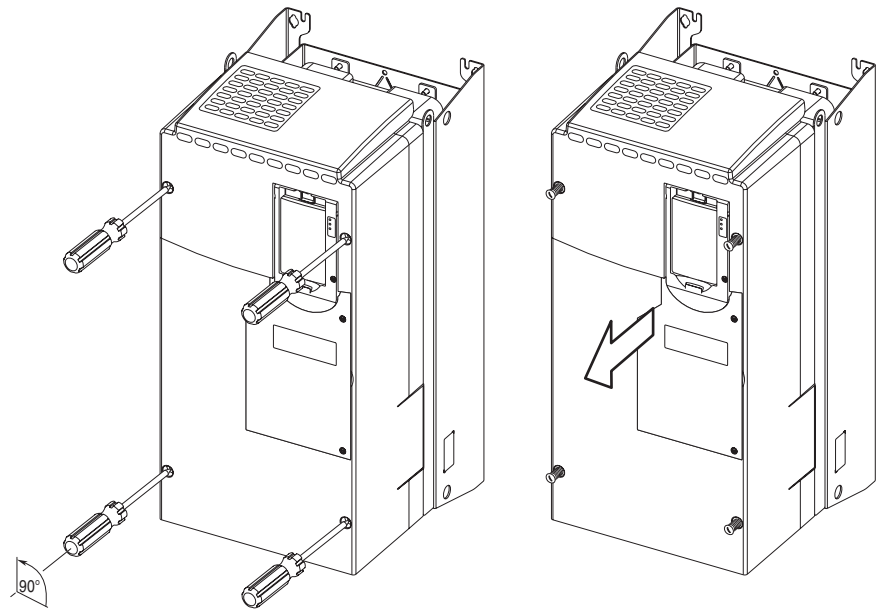


Figure 1.2 IP54, NEMA/UL Type 12, Frames 2...5



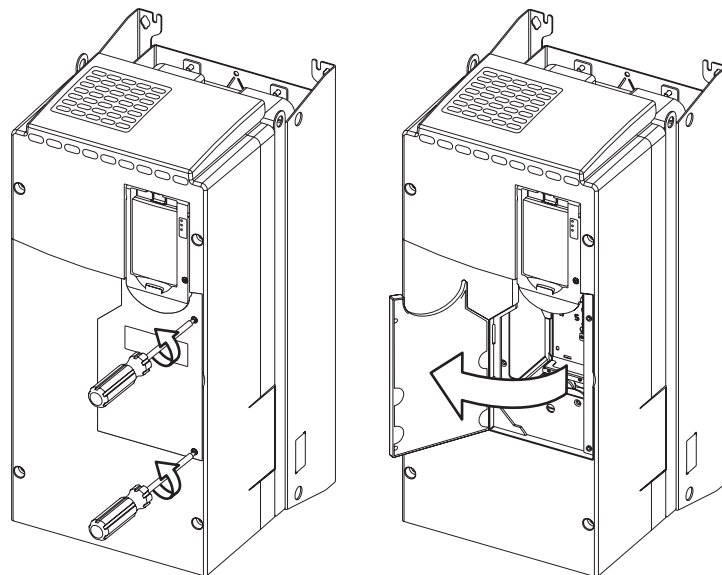
When cover is replaced:

- Recommended torque (screws and nuts) = 1.36 N•m (12.0 lb•in)
- Recommended screwdriver = 6.4 mm (0.25 in.) flat or T20 Hexalobular
- Recommended hex socket = 7 mm

Figure 1.3 IP00, NEMA/UL Open Type, Frames 6 & 7

When cover is replaced:

- Recommended screwdriver = 6.4 mm (0.25 in.) flat

Figure 1.4 IP00, NEMA/UL Open Type, Frames 6 & 7 Access Door

When door is replaced:

- Recommended screwdriver = 6.4 mm (0.25 in.) flat

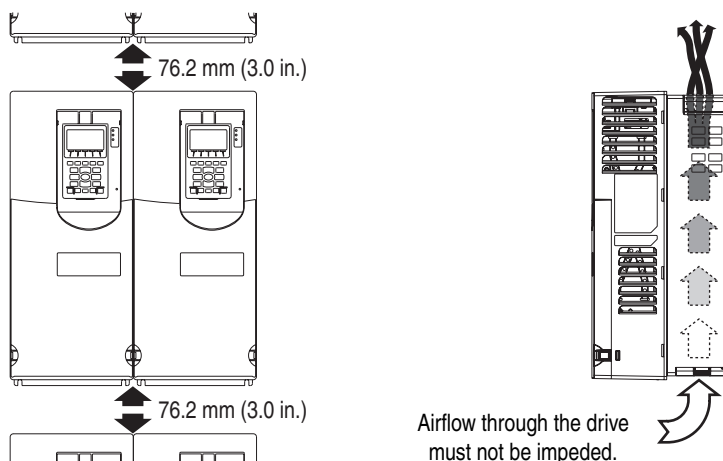
Mounting Considerations

Operating Conditions and Temperatures

PowerFlex 750-Series drives are designed to operate at the following air temperatures without derating.

Table 1.A Acceptable Surrounding Air Temperature

Enclosure Rating	Temperature Range	Drive
IP20, NEMA/UL Open Type	0...50 °C (32...122 °F)	Frames 2...5, All Ratings
IP00, NEMA/UL Open Type	0...50 °C (32...122 °F)	Frames 6...7, All Ratings
IP20, NEMA/UL Type 1 (with Debris Hood)	0...40 °C (32...104 °F)	Frames 2...5, All Ratings
IP20, NEMA/UL Type 1 (with Debris Label)	0...40 °C (32...104 °F)	Frames 6...7, All Ratings
Flange Mount - Front: IP20, NEMA/UL Open Type IP00, NEMA/UL Open Type Back/Heat Sink: IP66, NEMA/UL Type 4X	0...50 °C (32...122 °F) 0...50 °C (32...122 °F) 0...40 °C (32...104 °F)	Frames 2...5, All Ratings Frames 6...7, All Ratings All Frames, All Ratings
Stand-alone/Wall Mount - IP54, NEMA/UL Type 12	0...40 °C (32...104 °F)	Frames 2...5, All Ratings



Minimum Mounting Clearances

Specified vertical clearance requirements are intended to be from drive to drive. Other objects can occupy this space; however, reduced airflow may cause protection circuits to fault the drive. In addition, inlet air temperature must not exceed the product specification.

AC Supply Source Considerations

PowerFlex 750-Series drives are suitable for use on a circuit capable of delivering up to a maximum of 200,000 rms symmetrical amperes, 480 volts with recommended fuses/circuit breakers.



ATTENTION: To guard against personal injury and/or equipment damage caused by improper fusing or circuit breaker selection, use only the recommended line fuses/circuit breakers specified in [Appendix A](#).

If a Residual Current Detector (RCD) is used as a system ground fault monitor, only Type B (adjustable) devices should be used to avoid nuisance tripping.

Unbalanced, Ungrounded, Impedance or Phase Grounded Distribution Systems

If phase to ground voltage will exceed 125% of normal line to line voltage or the supply system is ungrounded, refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001.



ATTENTION: PowerFlex 750-Series drives contain protective MOVs and common mode capacitors that are referenced to ground. To guard against drive damage, these devices must be disconnected if the drive is installed on an ungrounded, impedance or phase grounded distribution system. See pages [1-19...1-20](#) for jumper locations.

Input Power Conditioning

Certain events on the power system supplying a drive can cause component damage or shortened product life. These conditions are divided into 2 basic categories:

1. All Drives

- The power system has power factor correction capacitors switched in and out of the system, either by the user or by the power company.
- The power source has intermittent voltage spikes in excess of 6000 volts. These spikes could be caused by other equipment on the line or by events such as lightning strikes.
- The power source has frequent interruptions.

2. 5 Hp or Less Drives (in addition to “1” above)

- The nearest supply transformer is larger than 100 kVA or the available short circuit (fault) current is greater than 100,000A.
- The impedance in front of the drive is less than 0.5%.

If any of these conditions exist, additional source impedance is required. The total input impedance is a function of all transformers, cabling, and reactors (if used) that supply power to the drive. The impedance can be calculated using the information supplied in Wiring and Grounding Guidelines for PWM AC Drives, publication DRIVES-IN001.

Grounding Requirements

The drive Safety Ground-PE must be connected to system ground.

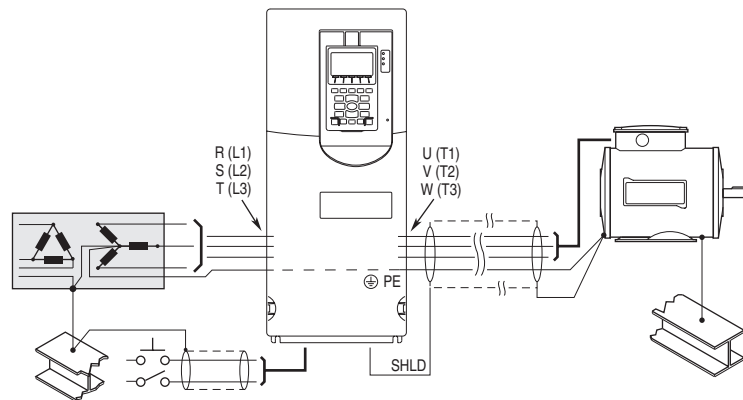
Ground impedance must conform to the requirements of national and local industrial safety regulations and/or electrical codes. The integrity of all ground connections should be periodically checked.

Recommended Grounding Scheme

A single point (PE only) grounding scheme should be used. Some applications may require alternate grounding schemes, refer to the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication number DRIVES-IN001, for more information. These applications include installations with long distances between drives or drive line-ups, which could cause large potential differences between the drive or line-up grounds.

For installations within a cabinet, a single safety ground point or ground bus bar connected directly to building steel should be used. All circuits including the AC input ground conductor should be grounded independently and directly to this point/bar.

Figure 1.5 Typical Grounding



Shield Termination - SHLD

The Shield terminal (see [page 1-12](#)) provides a grounding point for the motor cable shield. It must be connected to an earth ground by a separate continuous lead. The **motor cable** shield should be connected to this terminal on the drive (drive end) and the motor frame (motor end). Use a shield terminating or EMI clamp to connect shield to this terminal.

RFI Filter Grounding

Using an optional RFI filter may result in relatively high ground leakage currents. Therefore, the **filter must only be used in installations with grounded AC supply systems and be permanently installed and solidly grounded** (bonded) to the building power distribution ground. Ensure that the incoming supply neutral is solidly connected (bonded) to the same building power distribution ground. Grounding must not rely on flexible cables and should not include any form of plug or socket that would permit inadvertent disconnection. Some local codes may require redundant ground connections. The integrity of all connections should be periodically checked. Refer to the instructions supplied with the filter.

Fuses and Circuit Breakers

PowerFlex 750-Series drives can be installed with either input fuses or an input circuit breaker. National and local industrial safety regulations and/or electrical codes may determine additional requirements for these installations. Refer to [Appendix A](#) for recommended fuses/circuit breakers.



ATTENTION: PowerFlex 750-Series drives do not provide input power short circuit protection. Specifications for the recommended fuse or circuit breaker to provide drive input power protection against short circuits are provided in [Appendix A](#).

Power Wiring

Most start-up difficulties are the result of incorrect wiring. Every precaution must be taken to assure that the wiring is done as instructed. All items must be read and understood before the actual installation begins.



ATTENTION: The following information is merely a guide for proper installation. Rockwell Automation, Inc. cannot assume responsibility for the compliance or the noncompliance to any code, national, local or otherwise for the proper installation of this drive or associated equipment. A hazard of personal injury and/or equipment damage exists if codes are ignored during installation.

Power Cable Types Acceptable for 200-600 Volt Installations



ATTENTION: National Codes and standards (NEC, BSI etc.) and local codes outline provisions for safely installing electrical equipment. Installation must comply with specifications regarding wire types, conductor sizes, branch circuit protection and disconnect devices. Failure to do so may result in personal injury and/or equipment damage.

A variety of cable types are acceptable for drive installations. For many installations, unshielded cable is adequate, provided it can be separated from sensitive circuits. As an approximate guide, allow a spacing of 0.3 meters (1 foot) for every 10 meters (32.8 feet) of length. In all cases, long parallel runs must be avoided. Do not use cable with an insulation thickness less than or equal to 15 mils (0.4mm/0.015 in.). Use copper wire only. Wire gauge requirements and recommendations are based on 75 °C. Do not reduce wire gauge when using higher temperature wire.

Table 1.B Recommended Cable Design

Type	Max. Wire Size	Where Used	Rating/Type	Description
Type 1	2 AWG	Standard Installations 100 Hp or less	600V, 90 °C (194 °F) XHHW2/RHW-2	Four tinned copper conductors with XLPE insulation
Type 2	2 AWG	Standard Installations 100 Hp or less with Brake Conductors	600V, 90 °C (194 °F) RHH/RHW-2	Four tinned copper conductors with XLPE insulation plus one (1) shielded pair of brake conductors.
Type 3	500 MCM AWG	Standard Installations 150 Hp or more	Tray rated 600V, 90 °C (194 °F) RHH/RHW-2	Three tinned copper conductors with XLPE insulation and (3) bare copper grounds and PVC jacket.
Type 4	500 MCM AWG	Water, Caustic Chemical, Crush Resistance	Tray rated 600V, 90 °C (194 °F) RHH/RHW-2	Three bare copper conductors with XLPE insulation and three copper grounds on #10 AWG and smaller. Acceptable in Class I & II, Division I & II locations.
Type 5	500 MCM AWG	690V Applications	Tray rated 2000V, 90 °C (194 °F)	Three tinned copper conductors with XLPE insulation. (3) bare copper grounds and PVC jacket. Note: If terminator network or output filter is used, connector insulation must be XLPE, not PVC.

Unshielded

THHN, THWN or similar wire is acceptable for drive installation in dry environments provided adequate free air space and/or conduit fill rates limits are provided. **Do not use THHN or similarly coated wire in wet areas.** Any wire chosen must have a minimum insulation thickness of 15 Mils and should not have large variations in insulation concentricity.

Shielded/Armored Cable

Shielded cable contains all of the general benefits of multi-conductor cable with the added benefit of a copper braided shield that can contain much of the noise generated by a typical AC Drive. Strong consideration for shielded cable should be given in installations with sensitive equipment such as weigh scales, capacitive proximity switches and other devices that may be affected by electrical noise in the distribution system. Applications with large numbers of drives in a similar location, imposed EMC regulations or a high degree of communications/networking are also good candidates for shielded cable.

Shielded cable may also help reduce shaft voltage and induced bearing currents for some applications. In addition, the increased impedance of shielded cable may help extend the distance the motor can be located from the drive without the addition of motor protective devices such as terminator networks. Refer to “Reflected Wave” in Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001.

Consideration should be given to all of the general specifications dictated by the environment of the installation, including temperature, flexibility, moisture characteristics and chemical resistance. In addition, a braided shield should be included and specified by the cable manufacturer as having coverage of at least 75%. An additional foil shield can be greatly improve noise containment.

A good example of recommended cable is Belden® 295xx (xx determines gauge). This cable has 4 XLPE insulated conductors with a 100% coverage foil and an 85% coverage copper braided shield (with drain wire) surrounded by a PVC jacket.

Other types of shielded cable are available, but the selection of these types may limit the allowable cable length. Particularly, some of the newer cables twist 4 conductors of THHN wire and wrap them tightly with a foil shield. This construction can greatly increase the cable charging current required and reduce the overall drive performance. Unless specified in the individual distance tables as tested with the drive, these cables are not recommended and their performance against the lead length limits supplied is not known.

EMC Compliance

Refer to [CE Conformity on page 1-37](#) for details.

Cable Trays and Conduit

If cable trays or large conduits are to be used, refer to guidelines presented in publication DRIVES-IN001, Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives.



ATTENTION: To avoid a possible shock hazard caused by induced voltages, unused wires in the conduit must be grounded at both ends. For the same reason, if a drive sharing a conduit is being serviced or installed, all drives using this conduit should be disabled. This will help minimize the possible shock hazard from “cross coupled” motor leads.

Motor Cable Lengths

Typically, motor lead lengths less than 30 meters (100 feet) are acceptable. However, if your application dictates longer lengths, refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives for details.

Motor Considerations

Due to the operational characteristics of AC variable frequency drives, motors with inverter grade insulation systems designed to meet or exceed NEMA MG1 Part 31.40.4.2 standards for resistance to spikes of 1600 volts are recommended.

Guidelines must be followed when using non-inverter grade motors to avoid premature motor failures. Refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 for recommendations.

Single-Phase Input Power

The PowerFlex 750-Series drive is typically used with a three-phase input supply. Single-phase operation of the drive is not currently rated under UL508C listing. Rockwell Automation has verified that single-phase operation with output current derated by 50% of the three-phase ratings identified on page [A-9](#) will meet all safety requirements.

Power Terminal Blocks

Table 1.C Frames 2...5 Power Terminal Block

Frame	Wire Size Range ^{(1) (2)}		Strip Length	Recommended Torque	Recommended Tool(s)
	Maximum	Minimum			
2	4.0 mm ² (10 AWG)	0.2 mm ² (24 AWG)	8.0 mm (0.31 in.)	0.5 N•m (4.4 lb•in)	#1 Flat Screwdriver
3	16.0 mm ² (6 AWG)	0.5 mm ² (20 AWG)	10.0 mm (0.39 in.)	1.2 N•m (10.6 lb•in)	#2 Flat Screwdriver
4	25.0 mm ² (3 AWG)	2.5 mm ² (14 AWG)	10.0 mm (0.39 in.)	2.7 N•m (24 lb•in)	#2 Pozidrive® 492-C Phillips® 0.25 in. Flat Screwdriver
5	35.0 mm ² (1 AWG)	10.0 mm ² (8 AWG)	12.0 mm (0.5 in.)	4.0 N•m (35 lb•in)	#2 Pozidrive® 492-C Phillips® 0.25 in. Flat Screwdriver

⁽¹⁾ Maximum/minimum wire sizes that the terminal block will accept - these are not recommendations.

⁽²⁾ Terminal blocks are designed to accept a single wire.

Table 1.D Frames 6 & 7 Power Terminal Block

Frame	Maximum Lug Width ⁽¹⁾	Recommended Torque	Terminal Bolt Size	Recommended Tool
6	34.6 mm (1.36 in.)	11.3 N•m (100 lb•in)	M8 x 1.25	13 mm Hex Socket
7	43.5 mm (1.71 in.)	11.3 N•m (100 lb•in)	M8 x 1.25	13 mm Hex Socket

⁽¹⁾ Two wires connected in parallel to any of these terminals using two lugs may be required.

Table 1.E Frames 2...7 PE Grounding Stud

Frame	Recommended Torque	Terminal Bolt Size	Recommended Tool
2	1.36 N•m (12 lb•in)	M4	7 mm Hex Deep Socket
3	3.4 N•m (30 lb•in)	M6	10 mm Hex Deep Socket
4	3.4 N•m (30 lb•in)	M6	10 mm Hex Deep Socket
5	3.4 N•m (30 lb•in)	M6	10 mm Hex Deep Socket
6	11.3 N•m (100 lb•in)	M8	13 mm Hex Socket
7	11.3 N•m (100 lb•in)	M8	13 mm Hex Socket

Figure 1.6 Typical Terminal Block Location and Termination Points

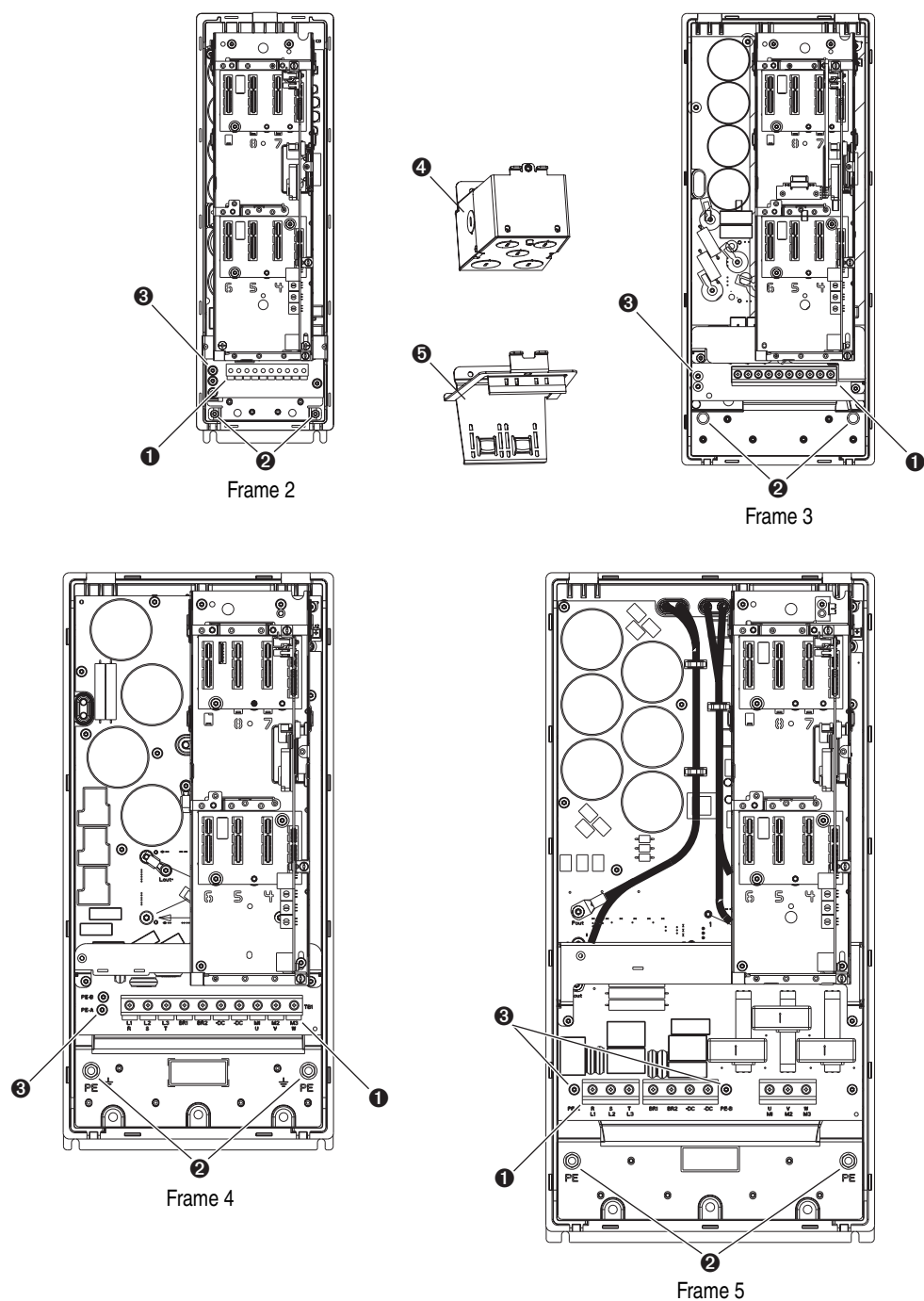


Table 1.F Frames 2...5

No.	Name	Description
❶	Power Terminal Block	R/L1, S/L2, T/L3, BR1, BR2, +DC, -DC, U/T1, V/T2, W/T3
❷	PE Grounding Studs	Terminating point to chassis ground for incoming AC line and motor shields.
❸	PE-A and PE-B	MOV and CMC Jumper Screws
❹	Optional NEMA/UL Type 1 Conduit Box	Terminating point to chassis ground for incoming AC line, motor shields, and control wire shields.
❺	Optional EMC Plate	Terminating point to chassis ground for incoming AC line, motor shields, and control wire shields.

Figure 1.7 Typical Terminal Block Location and Termination Points (continued)

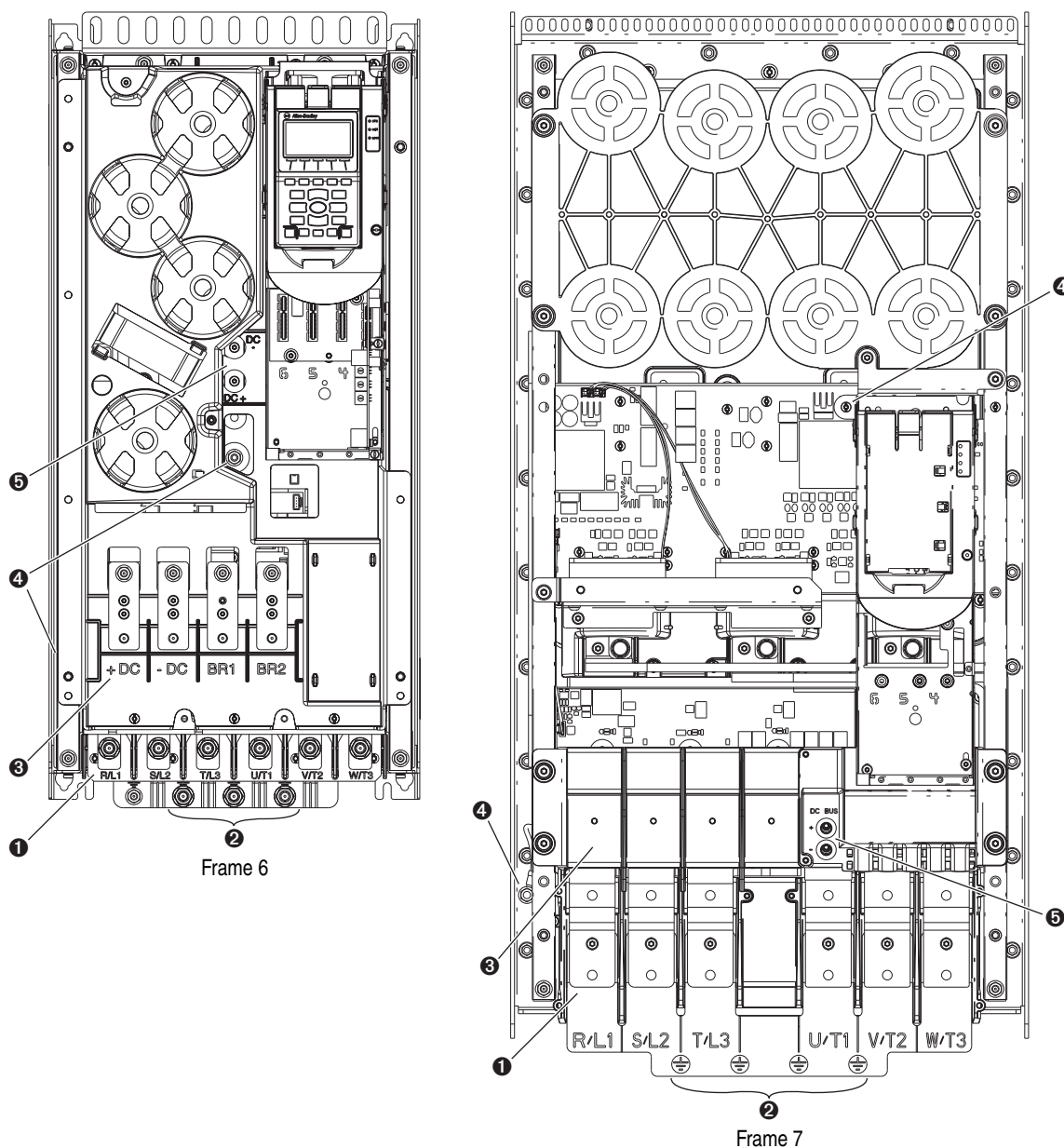
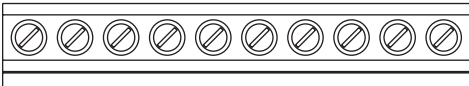
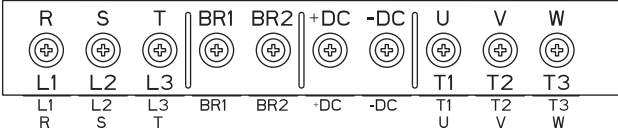
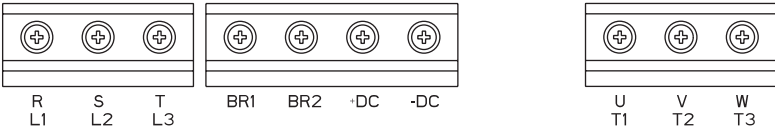
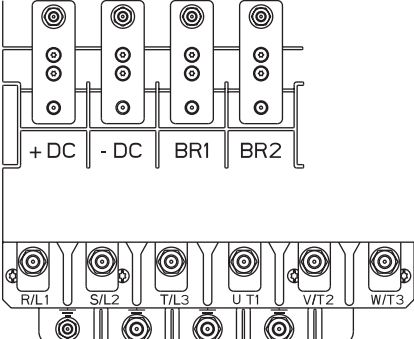
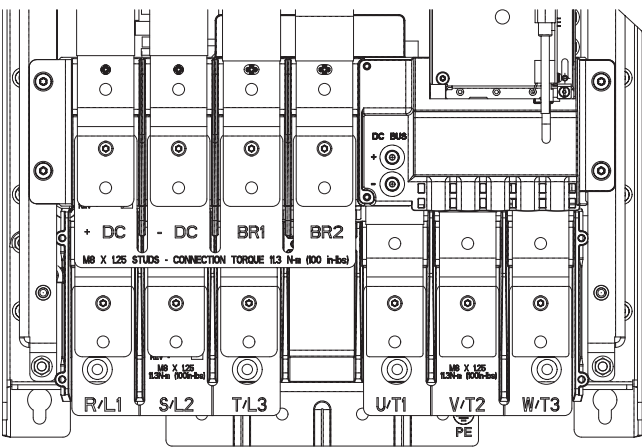


Table 1.G Frames 6...7

No.	Name	Description
①	Power Terminals	R/L1, S/L2, T/L3, U/T1, V/T2, W/T3
②	PE Grounding Studs	Terminating point to chassis ground for incoming AC line and motor shield.
③	DC Bus and Brake Terminals	+DC, -DC, BR1, BR2
④	PE-A and PE-B	MOV and CMC Jumper Wires
⑤	DC+ and DC-	Bus Voltage Test Points

Power Terminal Blocks

Frame	Power Terminal Blocks
2	 L1 L2 L3 BR BR + - T1 T2 T3 R S T 1 2 DC DC U V W
3	 L1 L2 L3 BR BR + - T1 T2 T3 R S T 1 2 DC DC U V W
4	 R S T BR1 BR2 +DC -DC U V W L1 L2 L3 BR1 BR2 -DC -DC T1 T2 T3 R S T BR1 BR2 -DC -DC U V W
5	 R S T BR1 BR2 +DC -DC U V W L1 L2 L3 BR1 BR2 -DC -DC T1 T2 T3
6 ⁽¹⁾	 +DC -DC BR1 BR2 R/L1 S/L2 T/L3 U/T1 V/T2 W/T3
7 ⁽¹⁾	 +DC -DC BR1 BR2 R/L1 S/L2 T/L3 U/T1 V/T2 W/T3 PE

⁽¹⁾ DC Bus Terminals are optional on Frame 6 and 7 drives: catalog number position 5.
 Dynamic Brake Resistor Terminals are optional on Frame 6 and 7 drives: catalog number position 12.
 Refer to Catalog Number Explanation on [page Preface-6](#).

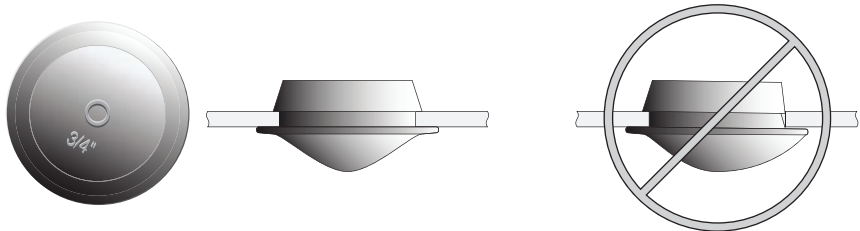
Terminal	Description	Notes
+DC	DC Bus (+)	DC Input Power or Dynamic Brake Chopper
-DC	DC Bus (-)	DC Input Power or Dynamic Brake Chopper
BR1	DC Brake (+)	Dynamic Brake Resistor Connection (+)
BR2	DC Brake (-)	Dynamic Brake Resistor Connection (-)
U	U (T1)	Motor Connections ⁽¹⁾
V	V (T2)	
W	W (T3)	
R	R (L1)	AC Line Input Power
S	S (L2)	
T	T (L3)	
PE / 	PE Ground	Terminating point to chassis ground for incoming AC line and motor shield.

⁽¹⁾ **Important:** Motors with NEMA MG1 Part 31.40.4.2 inverter grade insulation systems are recommended. If you intend to connect a motor that is not rated inverter grade, refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 for recommendations.

IP65, NEMA Type 12 Installations

Use the plugs supplied with IP65 (NEMA Type 12) rated drives to seal unused holes in the conduit entry plate.

Important: Completely seat the plug inner rim for the best seal.



Using Input/Output Contactors

Input Contactor Precautions



ATTENTION: A contactor or other device that routinely disconnects and reapplies the AC line to the drive to start and stop the motor can cause drive hardware damage. The drive is designed to use control input signals that will start and stop the motor. If an input device is used, operation must not exceed one cycle per minute or drive damage will occur.



ATTENTION: The drive start/stop/enable control circuitry includes solid state components. If hazards due to accidental contact with moving machinery or unintentional flow of liquid, gas or solids exist, an additional hardwired stop circuit may be required to remove the AC line to the drive. An auxiliary braking method may be required.

Output Contactor Precautions



ATTENTION: To guard against drive damage when using output contactors, the following information must be read and understood. One or more output contactors may be installed between the drive and motor(s) for the purpose of disconnecting or isolating certain motors/loads. If a contactor is opened while the drive is operating, power will be removed from the respective motor, but the drive will continue to produce voltage at the output terminals. In addition, reconnecting a motor to an active drive (by closing the contactor) could produce excessive current that may cause the drive to fault. If any of these conditions are determined to be undesirable or unsafe, an auxiliary contact on the output contactor should be wired to a drive digital input that is programmed as “Enable.” This will cause the drive to execute a coast-to-stop (cease output) whenever an output contactor is opened.

Dynamic Brake Resistor Considerations



ATTENTION: The drive does not offer protection for externally mounted brake resistors. A risk of fire exists if external braking resistors are not protected. External resistor packages must be self-protected from over temperature or a circuit equivalent to the one shown below must be supplied.

Using PowerFlex 750-Series Drives with Regenerative Power Units

If a Regenerative unit (i.e., 1336 REGEN) is used as a bus supply or a brake, the common mode capacitors should be disconnected (see Drive Power Jumper Configuration).

Regenerative Unit to Drive Connections

Regenerative Brake Mode

Frame(s)	Terminals	
	1336 Regen	PowerFlex 750-Series Drive
2...7	DC+ & DC-	+DC & -DC

Regenerative Bus Supply Mode

Frame(s)	Terminals	
	1336 Regen	PowerFlex 750-Series Drive
2...7	DC+ & DC-	+DC & -DC

Refer to 1336 REGEN Line Regeneration Package User Manual, publication 1336-REGEN-5.0, for more information.

Drive Power Jumper Configuration

PowerFlex 750-Series drives contain protective MOVs and common mode capacitors that are referenced to ground. To guard against drive damage and/or operation problems, these devices must be properly configured according to [Table 1.H](#).

Figure 1.8 MOV and AC EMI Capacitor Phase to Ground

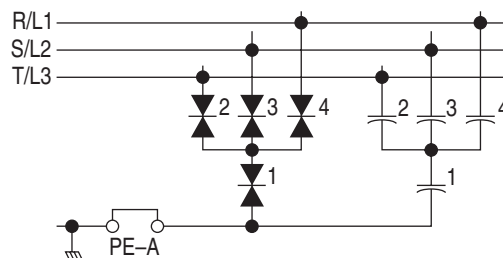
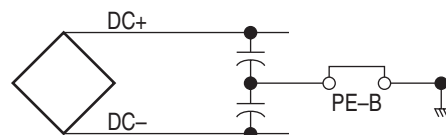


Figure 1.9 Common Mode Capacitors to Ground



ATTENTION: PE-A and PE-B jumpers must be configured according to the recommendations in [Table 1.H](#).



ATTENTION: To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged before removing/ installing jumpers. Measure the DC bus voltage at the +DC and -DC test points. Refer to [Figure 1.6](#) and [Figure 1.7](#) for location. The voltage must be zero.

Table 1.H Recommended Power Jumper Configurations

Power Source Type ⁽¹⁾	MOV / Input Filter Caps (PE-A) ⁽²⁾	DC Bus Common Mode Caps (PE-B)	Default Configuration (Cat. No. Position 11)	Benefits Of Correct Configuration on Power Source Type
Unknown	Connected	Disconnected	A	See below.
- AC fed Solidly Grounded - DC fed from passive rectifier which has a Solidly Grounded AC source	Connected	Connected	J	UL compliance, Reduced electrical noise, Most stable operation, EMC compliance, Reduced voltage stress on components and motor bearings
- AC fed Ungrounded - Impedance Grounded - DC fed from an active converter	Disconnected	Disconnected	N/A	Helps avoid severe equipment damage when ground fault occurs

⁽¹⁾ It is highly recommended to accurately determine the power source type and then configure appropriately.

⁽²⁾ When MOVs are disconnected, the power system must have its own transient protection to insure known and controlled voltages.

To connect or disconnect these devices, refer to the jumper locations shown in [Figure 1.11](#), [Figure 1.12](#) and [Figure 1.13](#).

In addition, on an ungrounded distribution system where the line-to-ground voltages on any phase could exceed 125% of the nominal line-to-line voltage, an isolation transformer should be installed. See Wiring and Grounding Guidelines for PWM AC Drives, publication DRIVES-IN001 at www.rockwellautomation.com/literature for more information on impedance grounded and ungrounded systems.

Power Jumper Screw Removal and Storage

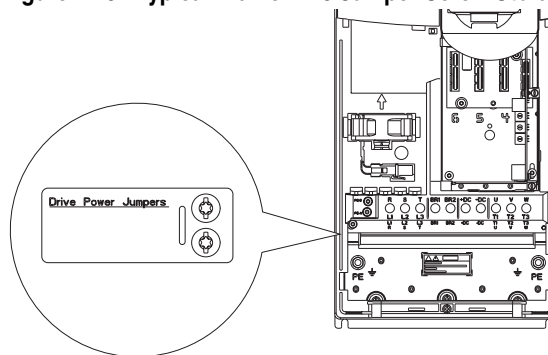
Frames 2...5 use jumper screws to complete an electrical connection when installed. Install or remove jumper screws according to the recommendations in [Table 1.H](#).



ATTENTION: Hazard of equipment damage exists if jumpers are not properly disconnected. For Frames 2...5, completely remove the jumper screw from the drive chassis.

When power Jumper screws are not used, they are stored on the left interior chassis wall as shown.

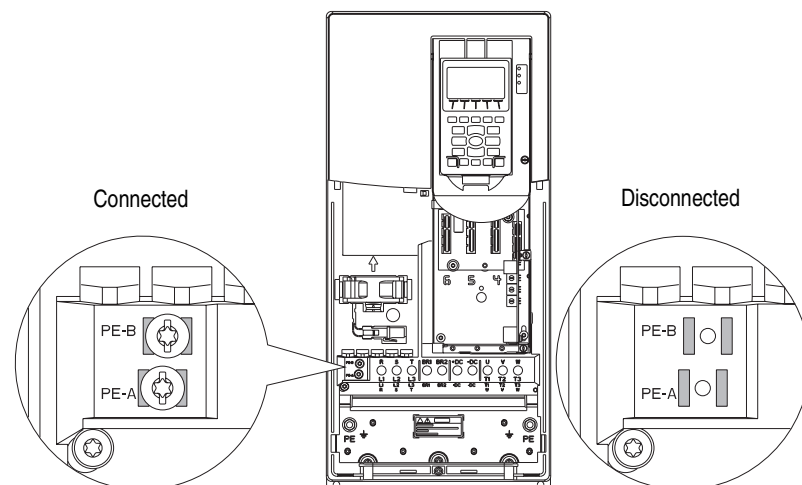
Figure 1.10 Typical Frame 2...5 Jumper Screw Storage Location (Frame 4 shown)



When screws are installed:

- Recommended torque = $1.36 \text{ N}\cdot\text{m}$ ($12.0 \text{ lb}\cdot\text{in}$) $\pm 0.14 \text{ N}\cdot\text{m}$ ($1.2 \text{ lb}\cdot\text{in}$)
- Recommended screwdriver = 6.4 mm (0.25 in.) flat or T15 Hexalobular

Figure 1.11 Typical Frame 2...5 Jumper Screw Installation Locations (Frame 4 shown)



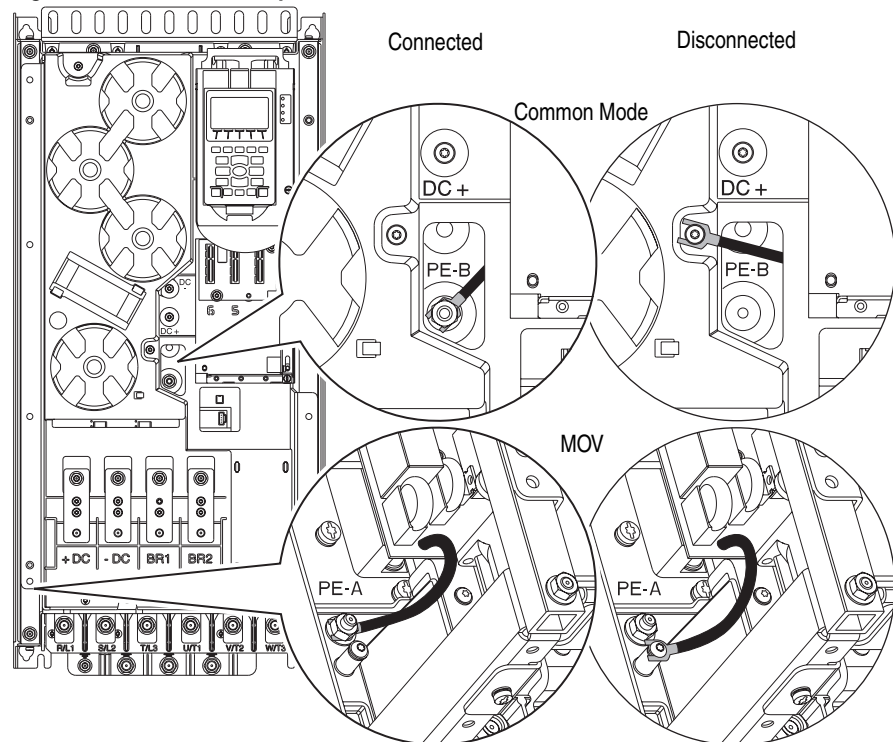
Frames 6...7 use jumper wires to complete an electrical connection when installed. Install or remove jumper wires according to the recommendations in [Table 1.H](#).



ATTENTION: Hazard of equipment damage exists if jumpers are not properly disconnected. For Frames 6...7, secure the disconnected jumper wire to the standoff provided.

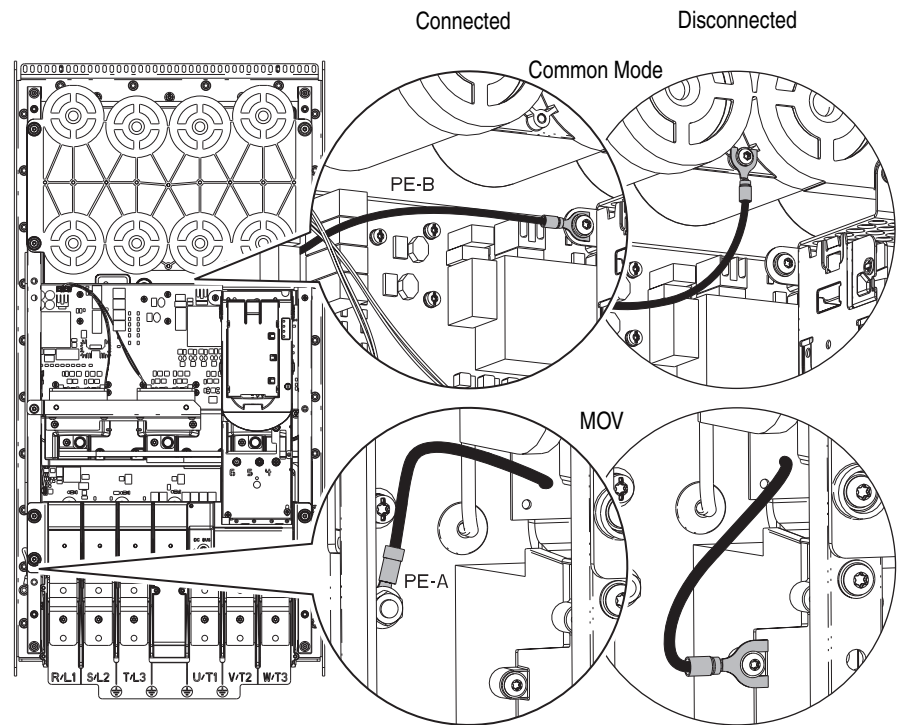
Jumper Wire Removal and Storage

Figure 1.12 Frame 6 Jumper Wire Locations



When jumper wires are connected:

- Recommended torque (screws and nuts) = 1.36 N•m (12.0 lb•in)
- Recommended hex socket = 7 mm
- Recommended screwdriver = T20 Hexalobular

Figure 1.13 Frame 7 Jumper Wire Locations

When jumper wires are connected:

- Recommended torque (screws and nuts) = 1.36 N•m (12.0 lb•in)
- Recommended hex socket = 7 mm
- Recommended screwdriver = T20 Hexalobular

I/O Wiring

Important points to remember about I/O wiring:

- Always use copper wire.
- Wire with an insulation rating of 600V or greater is recommended.
- Control and signal wires should be separated from power wires by at least 0.3 meters (1 foot).
- In order to maintain electrical safety for all user-accessible low voltage circuits (ELV and PELV circuits), I/O terminals designated for 24V or lower voltage must not be connected to a circuit of higher voltage or a circuit which is not adequately insulated from dangerous voltages with double or reinforced insulation within other connected equipment or wiring.
- In order to provide electrical safety for user-accessible low voltage I/O circuits which are referenced to earth (PELV circuits) and which may be touched simultaneously, care should be taken to provide a common earth reference for all equipment connected to the drive

Important: I/O terminals labeled “(–)” or “Common” are not referenced to earth ground and are designed to greatly reduce common mode interference. Grounding these terminals can cause signal noise.



ATTENTION: Hazard of personal injury or equipment damage exists when using bipolar input sources. Noise and drift in sensitive input circuits can cause unpredictable changes in motor speed and direction. Use speed command parameters to help reduce input source sensitivity.

I/O Terminal Blocks

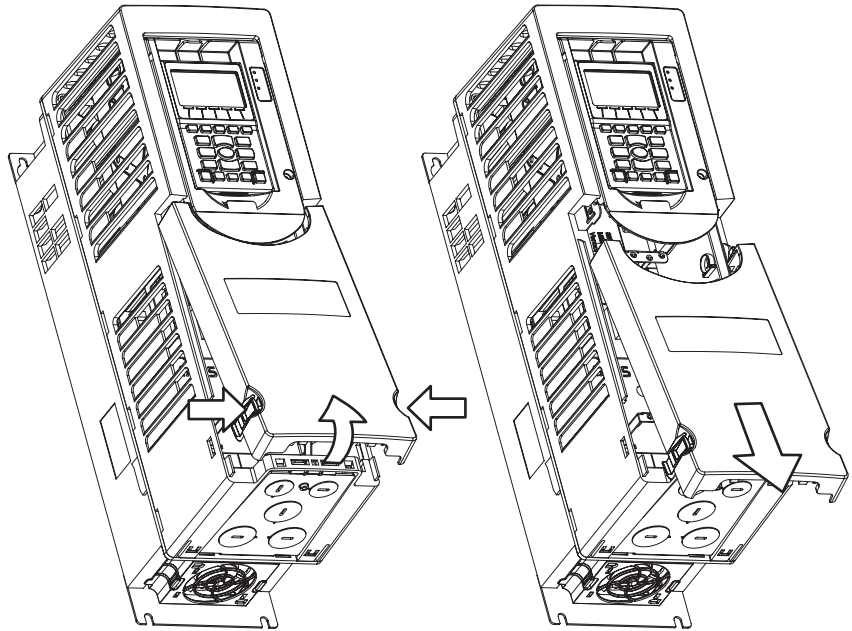
Table 1.I I/O Terminal Block Specifications

Name	Wire Size Range		Torque		Strip Length
	Maximum	Minimum	Maximum	Recommended	
PowerFlex 755 Control Board I/O TB1	2.5 mm ² (14 AWG)	0.3 mm ² (28 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)
I/O Module TB1	2.5 mm ² (14 AWG)	0.3 mm ² (28 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)
I/O Module TB2	4.0 mm ² (12 AWG)	0.25 mm ² (24 AWG)	0.5 N•m (4.4 lb•in)	0.4 N•m (3.5 lb•in)	7 mm (0.28 in.)
Safe Torque Off	0.8 mm ² (18 AWG)	0.3 mm ² (28 AWG)	N/A		10 mm (0.39 in.)
Single Incremental Encoder	0.8 mm ² (18 AWG)	0.3 mm ² (28 AWG)	N/A		10 mm (0.39 in.)
Safe Speed Monitor TB1 and TB2	2.5 mm ² (14 AWG)	0.25 mm ² (24 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)
Dual Incremental Encoder	0.8 mm ² (18 AWG)	0.3 mm ² (28 AWG)	N/A		10 mm (0.39 in.)
Universal Feedback Module	0.8 mm ² (18 AWG)	0.3 mm ² (28 AWG)	N/A		10 mm (0.39 in.)
Auxiliary Power Supply TB2	2.5 mm ² (14 AWG)	0.3 mm ² (28 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)

Access Drive Control Pod

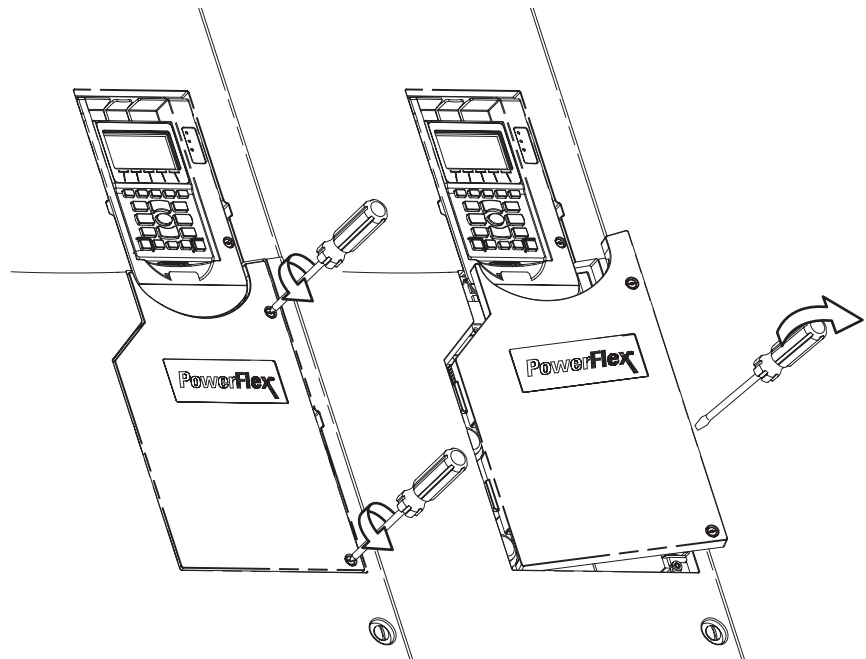
1. Remove drive cover

Frames 2...5



- Squeeze locking tabs and pull out bottom of cover.
- Pull cover down and away from the chassis.

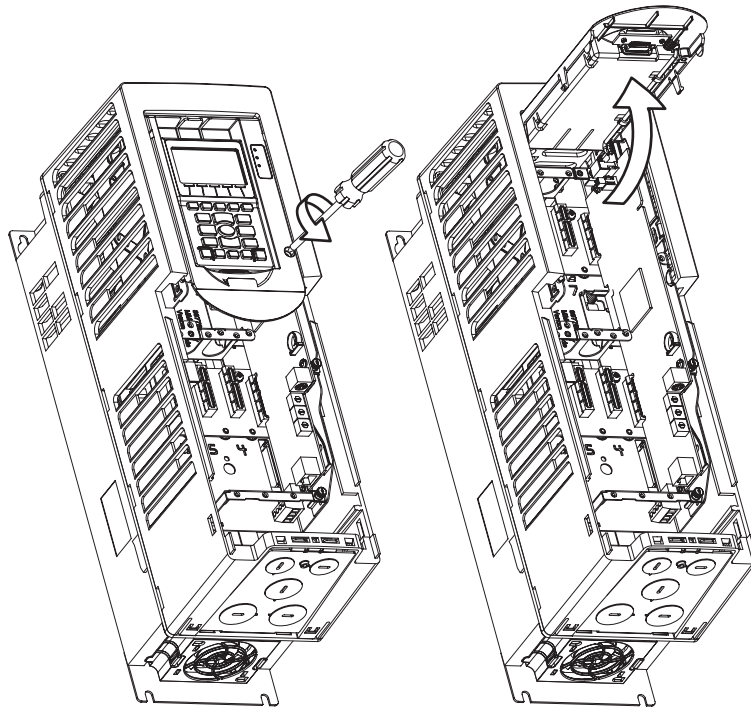
Frames 6...7



- Loosen door screws.
- Gently pry the door open to remove.

2. Lift the Human Interface Module (HIM) cradle.

All Frames



- Loosen the retention screw.
- Lift the cradle until the latch engages.

PowerFlex 755 Control Module

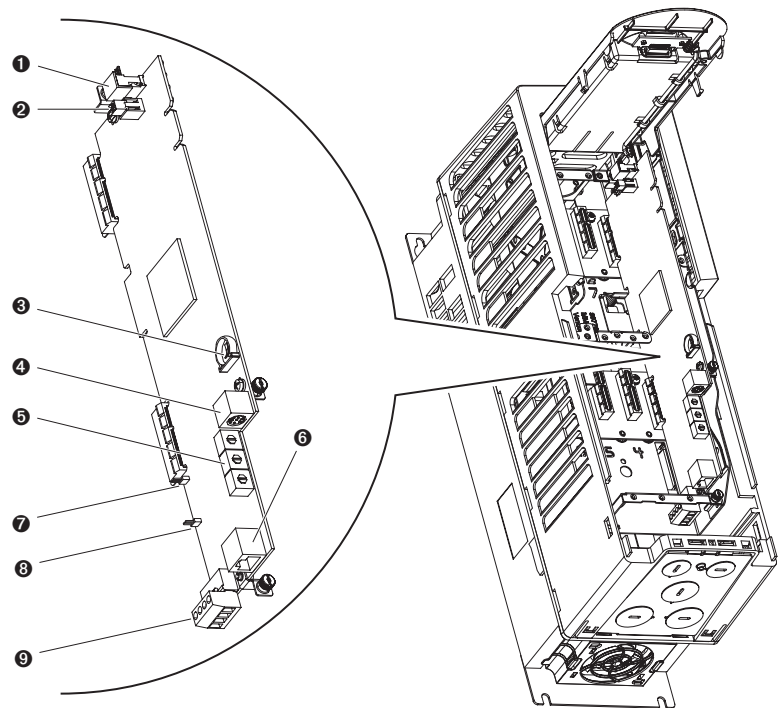


Table 1.J Control Board Details

No.	Name	Description
❶	HIM Connector	DPI Port 1 (HIM Cradle) connection.
❷	Fan Connector	Power supply for internal cooling fan (Frames 2 & 3).
❸	Battery Receptacle	User installed CR1220 lithium coin cell battery provides power to the Real Time Clock (Optional, not supplied).
❹	DPI Port 2	Cable connection for handheld and remote HIM options.
❺	Embedded EtherNet/IP ⁽¹⁾ Address Selectors	Rotary switches for setting lowest octet of EtherNet address (forces address to 192.168.1.xxx). Refer to page 2-2 for instructions on setting the IP address.
❻	Embedded EtherNet/IP ⁽¹⁾ Connector	Network cable connection.
❼	Jumper J2 SAFETY	Safety enable jumper. Removed when safety option is installed.
❽	Jumper J1 ENABLE	Hardware enable jumper. Removed when a hardware enable configuration is utilized.
❾	TB1	I/O terminal block.

⁽¹⁾ Refer to the PowerFlex 755 Drive Embedded EtherNet/IP Adapter User Manual, publication 750COM-UM001.

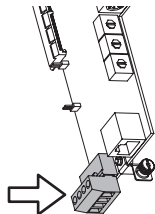
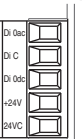


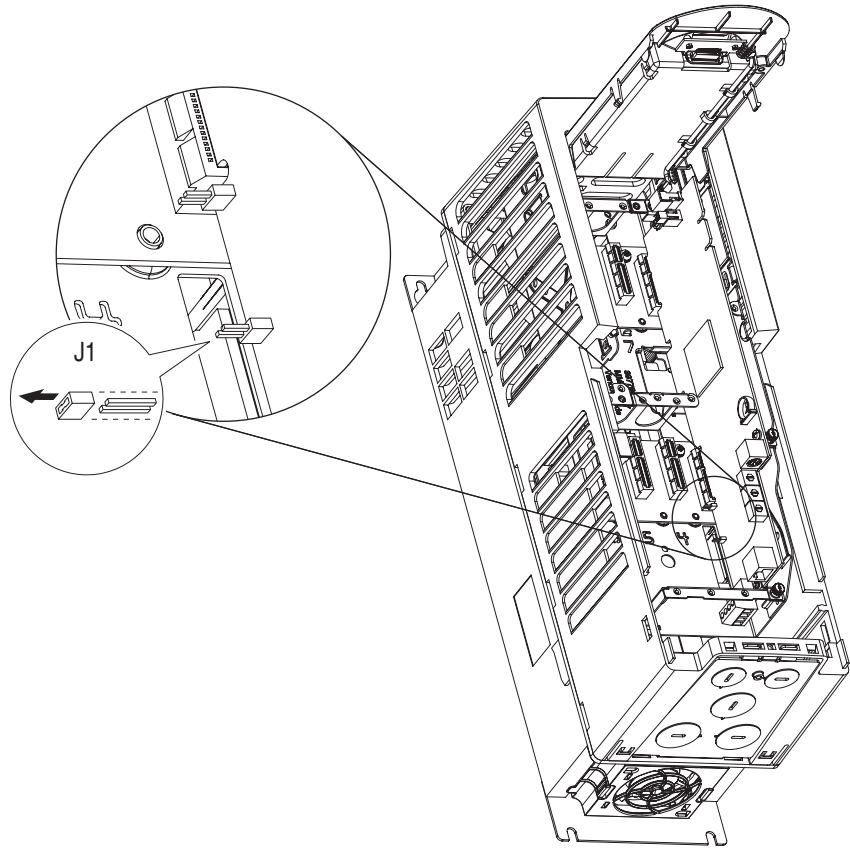
Table 1.K TB1 I/O Terminal Designations

Fixed I/O	Terminal	Name	Description
	Di 0ac	Digital Input 120V AC	Connections for AC power supply.
	Di C	Digital Input Common	Digital input common
	Di 0dc	Digital Input 24V DC	Connections for DC power supply.
	+24V	+24 Volt Power	Connections for drive supplied 24V power.
	24VC	24 Volt Common	
	24VDC		

Hardware Enable Circuitry

The main control module has one digital input that can be used as a general purpose programmable input, or by removal of a jumper, configured as a dedicated hardware enable, which is unaffected by parameter settings. To configure the input as a dedicated hardware enable, complete the following steps.

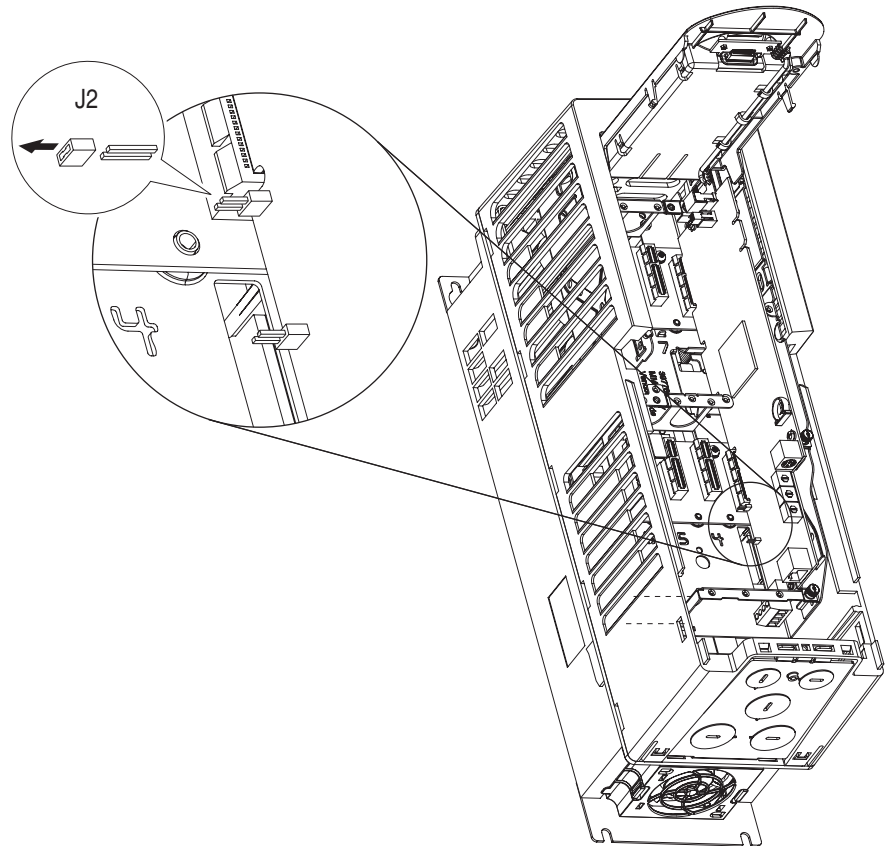
1. Access the control pod as described beginning on [page 1-23](#).
2. Locate and remove Jumper J1 ENABLE on the Main Control Board (see diagram).



Safety Enable Circuitry

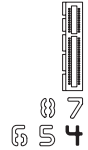
The drive ships with the safety enable jumper (J2 SAFETY) installed. This jumper must be removed when using the safe torque off or speed monitoring safety options.

Important: Failure to remove the jumper will cause the drive to fault when a start command is issued.



Option Module Installation

Compatible port locations may be restricted for each module. An icon with position number(s) is provided to indicate which option module ports are compatible. For example, the icon to the right indicates that the option module is only compatible with port 4.

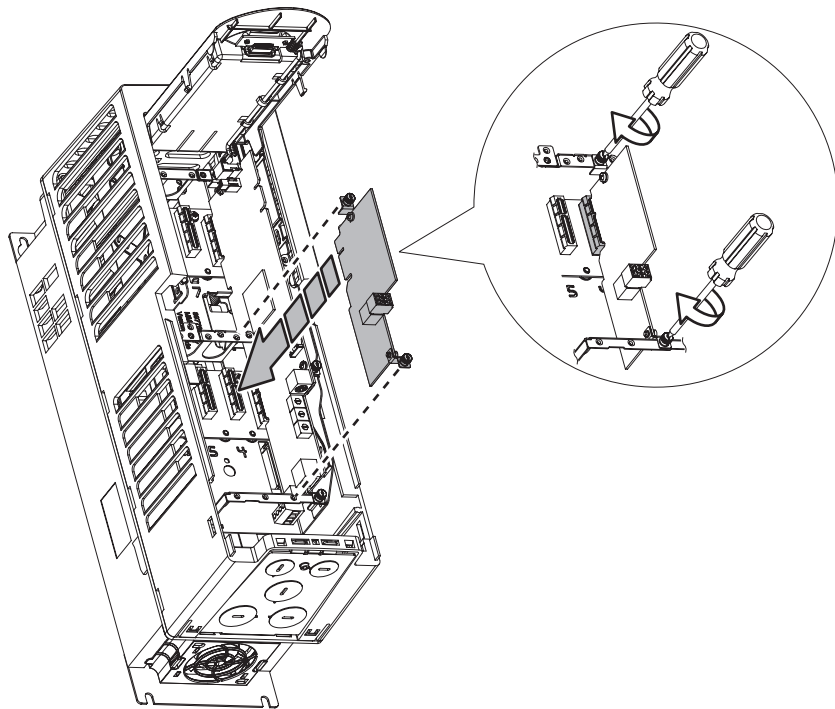


ATTENTION: Hazard of equipment damage exists if an option module is installed or removed while the drive is powered. To avoid damaging the drive, verify that the voltage on the bus capacitors has discharged and all control power is removed before performing any work on the drive. Measure the DC bus voltage at the +DC and -DC terminals or test points (refer to [page 1-14](#) for location). The voltage must be zero.

To install an option module:

1. Firmly press the module edge connector into the desired port.
2. Tighten the top and bottom retaining screws.
Recommended torque is 0.45 N•m (4.0 lb•in)

Important: Do not over-tighten retaining screws.



I/O Module

20-750-2262C-2R
20-750-2262D-2R
20-750-2263C-1R2T

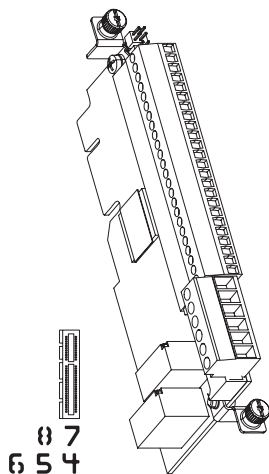


Table 1.L Input Mode Jumpers

Jumper Position	Voltage Mode	Current Mode

Table 1.M TB1 Terminal Designations

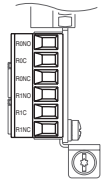
Terminal	Name	Description	Related Param
Sh	Shield	Terminating point for wiring shields,	
Ptc-	Motor PTC (-)	Motor protection device (Positive Temperature Coefficient).	40
Ptc+	Motor PTC (+)		
Ao0-	Analog Out 0 (-)	Bipolar, $\pm 10V$, 11 bit & sign, 2 k ohm minimum load.	85
Ao0+	Analog Out 0 (+)		
Ao1-	Analog Out 1 (-)	4-20 mA, 11 bit & sign, 400 ohm maximum load.	75
Ao1+	Analog Out 1 (+)		
-10V	-10 Volt Reference	2k ohm minimum.	
10VC	10 Volt Common	For (-) and (+) 10 Volt references.	
+10V	+10 Volt Reference	2k ohm minimum.	
Ai0-	Analog Input 0 (-)	Isolated, bipolar, differential, $\pm 10V$, 11 bit & sign, 88k ohm input impedance.	60
Ai0+	Analog Input 0 (+)		
Ai1-	Analog Input 1 (-)		50
Ai1+	Analog Input 1 (+)		
24VC	24 Volt Common	Drive supplied logic input power.	
+24V	+24 Volt DC	200 mA	
Di C	Digital Input Common		
Di 0	Digital Input 0 ⁽¹⁾	24V AC/DC, 50/60 Hz - Opto isolated	1
Di 1	Digital Input 1 ⁽¹⁾	Low State: less than 5V AC/DC	
Di 2	Digital Input 2 ⁽¹⁾	High State: greater than 20V AC/DC	
Di 3	Digital Input 3 ⁽¹⁾	11.2 mA DC	
Di 4	Digital Input 4 ⁽¹⁾	115V AC, 50/60 Hz - Opto isolated	
Di 5	Digital Input 5 ⁽¹⁾	Low State: less than 30V AC	
		High State: greater than 100V AC	

⁽¹⁾ Digital Inputs are either 24 Volts DC (2262C) or 115 Volts AC (2262D) based on module catalog number. Ensure applied voltage is correct for I/O module

Table 1.N TB2 Terminal Designations (2 Relay Outputs: 2R)

Relay Out	Terminal	Name	Description
	R0NO	Relay 0 N.O.	Output Relay 0 normally open contact.
	R0C	Relay 0 Common	Output Relay 0 common.
	R0NC	Relay 0 N.C.	Output Relay 0 normally closed contact.
	R1NO	Relay 1 N.O.	Output Relay 1 normally open contact.
	R1C	Relay 1 Common	Output Relay 1 common.
	R1NC	Relay 1 N.C.	Output Relay 1 normally closed contact.

Table 1.O TB2 Terminal Designations (1 Relay and 2 Transistor Outputs: IR2T)

Relay Out	Terminal	Name	Description
	R0NO	Relay 0 N.O.	Output Relay 0 normally open contact.
	R0C	Relay 0 Common	Output Relay 0 common.
	R0NC	Relay 0 N.C.	Output Relay 0 normally closed contact.
	T0	Transistor Output 0	NA
	TC	Transistor Output Common	NA
	T1	Transistor Output 1	NA

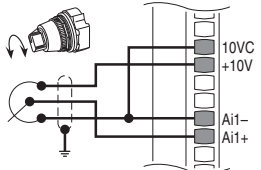
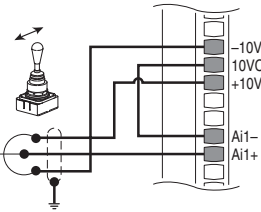
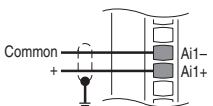
Parameter Access

Refer to [Select A Device on page D-5](#) for instructions on how to access parameters on an option module.

Parameter Descriptions

I/O option module parameter descriptions begin on [page 3-120](#).

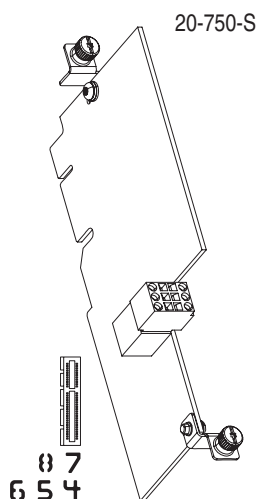
Table 1.P TB1 Terminals — Analog Wiring Examples

Input/Output	Connection Example	Required Parameter Changes
Potentiometer Unipolar Speed Reference 10k Ohm Pot. Recommended (2k Ohm Minimum)		- Set Direction Mode Port 0: P308 [Direction Mode] = "0, Unipolar" - Set Selection Port 0: P545 [Speed Ref A Sel] = Port X (I/O Module): P60 [Anlg In1 Value] - Adjust Scaling Port X (I/O Module): P61 [Anlg In1 Hi] = 10 Volt Port X (I/O Module): P62 [Anlg In1 Lo] = 0 Volt Port 0: P547 [Spd Ref A AngHi] = 60 Hz Port 0: P548 [Spd Ref A AngLo] = 0 Hz - View Results Port X (I/O Module): P60 [Anlg In1 Value] Port 0: P592 [Selected Spd Ref]
Joystick Bipolar Speed Reference ±10V Input		- Set Direction Mode Port 0: P308 [Direction Mode] = "1, Bipolar" - Set Selection Port 0: P545 [Speed Ref A Sel] = Port X (I/O Module): P60 [Anlg In1 Value] - Adjust Scaling Port X (I/O Module): P61 [Anlg In1 Hi] = +10 Volt Port X (I/O Module): P62 [Anlg In1 Lo] = -10 Volt Port 0: P547 [Spd Ref A AngHi] = +60 Hz Port 0: P548 [Spd Ref A AngLo] = -60 Hz - View Results Port X (I/O Module): P60 [Anlg In1 Value] Port 0: P592 [Selected Spd Ref]
Analog Input Bipolar Speed Reference ±10V Input		- Set Direction Mode Port 0: P308 [Direction Mode] = "1, Bipolar" - Set Selection Port 0: P545 [Speed Ref A Sel] = Port X (I/O Module): P60 [Anlg In1 Value] - Adjust Scaling Port X (I/O Module): P61 [Anlg In1 Hi] = +10 Volt Port X (I/O Module): P62 [Anlg In1 Lo] = -10 Volt Port 0: P547 [Spd Ref A AngHi] = +60 Hz Port 0: P548 [Spd Ref A AngLo] = -60 Hz - View Results Port X (I/O Module): P60 [Anlg In1 Value] Port 0: P592 [Selected Spd Ref]

Input/Output	Connection Example	Required Parameter Changes
Analog Voltage Input Unipolar Speed Reference 0 to +10V Input		- Set Direction Mode Port 0: P308 [Direction Mode] = "0, Unipolar" - Set Selection Port 0: P545 [Speed Ref A Sel] = Port X (I/O Module): P60 [Anlg In1 Value] - Adjust Scaling Port X (I/O Module): P61 [Anlg In1 Hi] = 10 Volt Port X (I/O Module): P62 [Anlg In1 Lo] = 0 Volt Port 0: P547 [Spd Ref A AngHi] = 60 Hz Port 0: P548 [Spd Ref A AngLo] = 0 Hz - View Results Port X (I/O Module): P60 [Anlg In1 Value] Port 0: P592 [Selected Spd Ref]
Analog Current Input Unipolar Speed Reference 0-20 mA Input		- Set Direction Mode Port 0: P308 [Direction Mode] = "0, Unipolar" - Set Selection Port 0: P545 [Speed Ref A Sel] = Port X (I/O Module): P60 [Anlg In1 Value] - Adjust Scaling Port X (I/O Module): P61 [Anlg In1 Hi] = 20 mA Port X (I/O Module): P62 [Anlg In1 Lo] = 0 mA Port 0: P547 [Spd Ref A AngHi] = 60 Hz Port 0: P548 [Spd Ref A AngLo] = 0 Hz - View Results Port X (I/O Module): P60 [Anlg In1 Value] Port 0: P592 [Selected Spd Ref]
HW Input PTC PTC OT set > 5V PTC OT cleared < 4V PTC Short < 0.2V		- Configuration: Port X (I/O Module): P40 [PTC Config] = "0, Ignore", "1, Alarm", "2, Flt Minor", "3, Flt CoastStop", "4, Flt RampStop", or "5, Flt CL Stop" - View Results Port X (I/O Module): P41 [PTC Status] Port X (I/O Module): P42 [PTC Value]
Analog Voltage Output ±10V, 0...20 mA Bipolar +10V Unipolar		- Configuration: Port X (I/O Module): P70 [Analog Out Type] = Volt/Current - Set Selection Port 0: P75 [Anlg Out0 Select] = Port 0: P3 [Mtr Vel Fdbk] - Adjust Scaling Port X (I/O Module): P78 [Anlg Out0 DataHi] = 60 Hz Port X (I/O Module): P79 [Anlg Out0 DataLo] = 0 Hz Port X (I/O Module): P80 [Anlg Out0 Hi] = 10V/20 mA Port X (I/O Module): P81 [Anlg Out0 Lo] = 0V/0 mA - View Results Port X (I/O Module): P77 [Anlg Out0 Data] Port X (I/O Module): P82 [Anlg Out0 Val]
2-Wire Control Non-Reversing 24V DC internal supply		- Set Direction Mode: Port 0: P308 [Direction Mode] = "3, Rev Disable" - Configuration: Port 0: P150 [Digital In Cfg] = "1, Run Level" - Set Selection Port 0: P163 [DI Run] = Port X (I/O Module): P1 [Dig In Status], bit 0 = Input 0 - View Results Port X (I/O Module): P1 [Dig In Status] Port 0: P935 [Drive Status 1]

Input/Output	Connection Example	Required Parameter Changes
2-Wire Control Reversing External supply		- Set Direction Mode: Port 0: P308 [Direction Mode] = "0, Unipolar" - Configuration: Port 0: P150 [Digital In Cfg] = "1, Run Level" - Set Selection Port 0: P164 [DI Run Forward] = Port X (I/O Module): P1 [Dig In Status], bit 0 = Input 0 Port 0: P165 [DI Run Reverse] = Port X (I/O Module): P1 [Dig In Status], bit 1 = Input 1 - View Results Port X (I/O Module): P1 [Dig In Status] Port 0: P935 [Drive Status 1]
3-Wire Control Internal supply		- Set Selection Port 0: P158 [DI Stop] = Port X (I/O Module): P1 [Dig In Status], bit 0 = Input 0 Port 0: P161 [DI Start] = Port X (I/O Module): P1 [Dig In Status], bit 1 = Input 1 - View Results Port X (I/O Module): P1 [Dig In Status] Port 0: P935 [Drive Status 1]
3-Wire Control External supply		- Set Selection Port 0: P158 [DI Stop] = Port X (I/O Module): P1 [Dig In Status], bit 0 = Input 0 Port 0: P161 [DI Start] = Port X (I/O Module): P1 [Dig In Status], bit 1 = Input 1 - View Results Port X (I/O Module): P1 [Dig In Status] Port 0: P935 [Drive Status 1]
Digital Input PLC Output Module		- Set Selection Port 0: P158 [DI Stop] = Port X (I/O Module): P1 [Dig In Status], bit 0 = Input 0 Port 0: P161 [DI Start] = Port X (I/O Module): P1 [Dig In Status], bit 1 = Input 1 - View Results Port X (I/O Module): P1 [Dig In Status] Port 0: P935 [Drive Status 1]
Digital Output External supply		- Set Selection Port X (I/O Module): P10 [RO0 Select] = Port 0: P935 [Drive Status 1], bit 7 = Faulted - View Results Port X (I/O Module): P5 [Dig Out Status]

Safe Torque Off Option Module



The safe torque off option is just one component in a safety control system. Components in the system must be chosen and applied appropriately to achieve the desired level of operational safety. For detailed information on applying this option, refer to the PowerFlex 750-Series Safe Torque Off User Manual, publication 750-UM002.

Table 1.Q TB2 Terminal Designations

Terminal	Name	Description
SP+	+24 Volt Safety Power	User-supplied 24 volt power. 45 mA typical
SP-	Safety Power Common	
SE+	+24 Volt Safety Enable	User-supplied 24 volt power. 25 mA typical
SE-	Safety Enable Common	
Sd	Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.
Sd	Shield	

Safety Input	Connection Example
Power Supply	

Safe Speed Monitor Option Module

The Safe Speed Monitor option is just one component in a safety control system. Components in the system must be chosen and applied appropriately to achieve the desired level of operational safety. For detailed information on applying this option, refer to the Safe Speed Monitor Option Module for PowerFlex 750-Series AC Drives Safety Reference Manual, publication 750-RM001.

Table 1.R TB1 Terminal Designations

Terminal	Name	Signal Name	Description
S11	Pto0	TEST_OUT_0	Pulse test source for safety inputs.
S11			
S11			
S21	Pto1	TEST_OUT_1	Pulse test source for safety inputs.
S21			
S21			

Table 1.S TB2 Terminal Designations

Terminal	Name	Description	Related Param
S34	Res0	Reset	
52	Dco1	Door Control Output.	74
51	Dco0	Enables pulse testing.	
78	Slo1	Safe Limited Speed Output.	73
68	Slo0	Enables pulse testing.	
44	Sso1	Safe Stop Output.	72
34	Sso0	Enables pulse testing.	
X42	Lmi1	Lock Monitoring Input	60
X32	Lmi0		
S42	Dmi1	Door Monitoring Input	58
S32	Dmi0		
S62	Sli1	Safe Limited Speed Input	52
S52	Sli0		
S82	Esm1	Enabling Switch Monitoring Input	54
S72	Esm0		
S22	Ssi1	Safe Stop Input	44
S12	Ssi0		
A2	24VC	Customer supplied 24V DC. Module is not functional without these connections.	
A1	+24V		

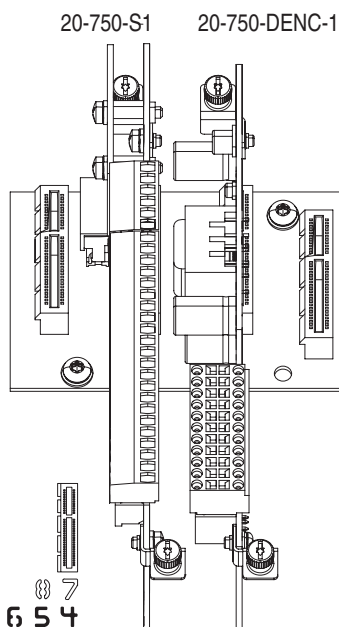
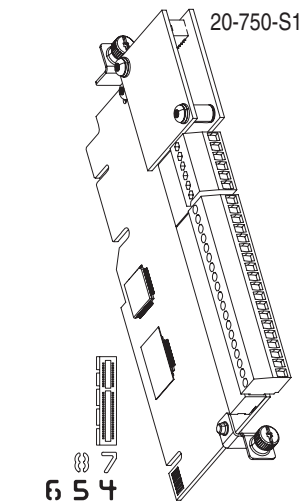
Important: When the Safe Speed Monitor option is used with the Dual Incremental Encoder option, both modules must be installed on the same backplane (ports 6, 5, 4).

Parameter Access

Refer to [Select A Device on page D-5](#) for instructions on how to access parameters on an option module.

Parameter Descriptions

Safe Speed Monitor option module parameter descriptions begin on [page 3-133](#).



Auxiliary Power Supply Option Module

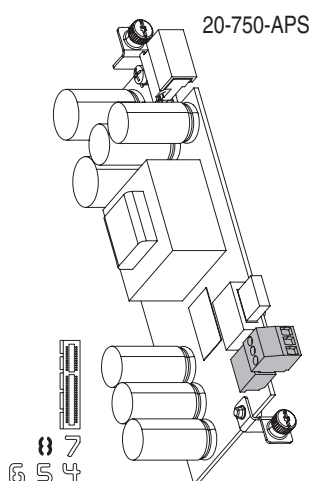


Table 1.T TB1 Terminal Designations

Terminal	Name	Description
AP+	+24 Volt Auxiliary Power	Connections for customer supplied 24V/5A power supply.
AP-	Auxiliary Power Common	
Sh	Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.

DeviceNet Option Module

For complete information on the DeviceNet Option Module, refer to the PowerFlex 750-Series Drive DeviceNet Option Module User Manual, publication 750COM-UM002.

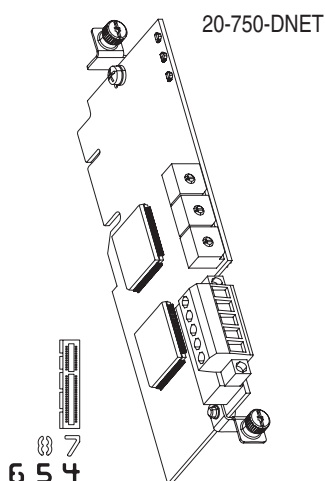


Table 1.U DeviceNet Option Module LED Indication

LED	Name	Description
1	Port	DPI Connection Status
2	MOD	Option Module Status
3	NET A	DeviceNet Status

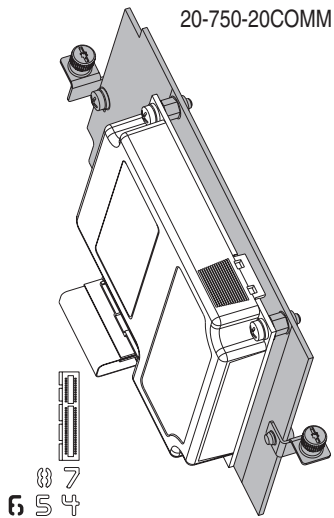
Table 1.V DeviceNet Option Module Rotary Switches

Switch	Name	Description
1	Data Rate Switch	Sets the DeviceNet data rate at which the option module communicates.
2	Node Address Switches	Sets the node address of the option module.

Table 1.W TB1 Terminal Designations

Terminal	Color	Signal	Function
5	Red	V+	Power Supply
4	White	CAN_H	Signal High
3	Bare	SHIELD	Shield
2	Blue	CAN_L	Signal Low
1	Black	V-	Common

20-COMM Carrier



Enables use of some 20-COMM adapters with PowerFlex 750-Series drives. See .

Refer to publication 750COMM-IN001 for instructions on installing a 20-COMM adapter on the 20-COMM Carrier.

20-COMM-* Network Adapter Compatibility with 750-Series Drives

Adapter Type	Accesses Ports 2, 3, and 6 for I/O Connections (Implicit and Explicit Messaging)	Accesses Port 7 through 14 Devices	Supports Drive Add On Profiles	Supports Asian-Languages ⁽⁵⁾
20-COMM-B BACnet MS/TP	No			
20-COMM-C ControlNet (Coax)	✓ ⁽¹⁾	✓ v3.001 ⁽³⁾	✓ ⁽⁴⁾	✓ v3.001 ⁽³⁾
20-COMM-D DeviceNet		✓ v2.005 ⁽³⁾	No	
20-COMM-E EtherNet/IP		✓ v4.001 ⁽³⁾	✓ ⁽⁴⁾	✓ v4.001 ⁽³⁾
20-COMM-H RS-485 HVAC	✓ ⁽²⁾	No		
20-COMM-I Interbus	✓ ⁽¹⁾	No		
20-COMM-K CANopen				
20-COMM-L LonWorks	No			
20-COMM-M Modbus/TCP	✓ ⁽¹⁾	✓ v2.001 ⁽³⁾	No	✓ v2.001 ⁽³⁾
20-COMM-P Profibus DP		No		
20-COMM-Q ControlNet (Fiber)		✓ v3.001 ⁽³⁾	✓ ⁽⁴⁾	✓ v3.001 ⁽³⁾
20-COMM-R Remote I/O		No		
20-COMM-S RS-485 DF1				

⁽¹⁾ Controller must be capable of reading/writing 32-bit floating point (REAL) values.

⁽²⁾ Only works in the Modbus RTU mode.

⁽³⁾ Requires this adapter firmware version or higher.

⁽⁴⁾ Requires firmware version v1.05 or higher of the drive Add On Profiles for RSLogix 5000 version v16 or higher.

⁽⁵⁾ Chinese, Japanese, and Korean languages are supported at the time of publication.

Using 750-Series Drives with Regen Power Units

If a Regenerative unit (i.e., 1336 REGEN) is used as a bus supply or a brake, the common mode capacitors should be disconnected. Refer to [page 1-17](#) for information on removing common mode capacitors.

Regenerative Unit to Drive Connections

Regenerative Brake Mode

Frame(s)	Terminals	
	1336 Regen	PowerFlex 750-Series Drive
2...7	DC+ & DC-	+DC & -DC

Regenerative Bus Supply Mode

Frame(s)	Terminals	
	1336 Regen	PowerFlex 750-Series Drive
2...7	DC+ & DC-	+DC & -DC

Refer to 1336 REGEN Line Regeneration Package User Manual, publication 1336-REGEN-5.0, for more information.

CE Conformity

Compliance with the Low Voltage Directive and Electromagnetic Compatibility Directive has been demonstrated using harmonized European Norm (EN) standards published in the Official Journal of the European Communities. PowerFlex 750-Series drives comply with the EN standards listed below when installed according to the PowerFlex 750-Series AC Drive Installation Instructions and this PowerFlex 750-Series AC Drive User Manual.

CE Declarations of Conformity are available online at:
www.rockwellautomation.com/products/certification/

Low Voltage Directive (2006/95/EC)

- EN 61800-5-1 Adjustable speed electrical power drive systems – Part 5-1: Safety requirements – Electrical, thermal and energy.

EMC Directive (2004/108/EC)

- EN 61800-3 Adjustable speed electrical power drive systems – Part 3: EMC product standard including specific test methods.

General Considerations

- For CE compliance, drives must satisfy installation requirements related to both EN 61800-5-1 and EN 61800-3 provided in this document.
- PowerFlex 750-Series AC Drives comply with the EMC requirements of EN 61800-3 when installed according to good EMC practices and the instructions provided in this document. However, many factors can influence the EMC compliance of an entire machine or installation, and compliance of the drive itself does not ensure compliance of all applications.
- PowerFlex 750-Series drives are not intended to be used on public low-voltage networks which supply domestic premises. Without additional mitigation, radio frequency interference is expected if used on such a network. The installer is responsible to take measures such as supplementary line filters and enclosures to prevent interference, in addition to the installation requirements of this document.
- Requirements for supplementary mitigation related to specific high frequency emission limits are provided in [Table 1.X](#).

- PowerFlex 750-Series drives generate harmonic current emissions on the AC supply system. When operated on a public low-voltage network it is the responsibility of the installer or user to ensure that applicable requirements of the distribution network operator have been met. Consultation with the network operator and Rockwell Automation may be necessary.



ATTENTION: PowerFlex 750-Series drives produce DC current in the protective earthing conductor which may reduce the ability of RCD's (residual current-operated protective devices) or RCM's (residual current-operated monitoring devices) of type A or AC to provide protection for other equipment in the installation.

Installation Requirements Related to EN 61800-5-1 and the Low Voltage Directive

- 600V and 690V class PowerFlex 750-Series drives are designed to be CE compliant only if they are NOT connected to “corner-earthed” supply systems where one of the three phases of the supply system has been earthed.
- Voltage classes up to 480V PowerFlex 750-Series drives are compliant with the CE LV Directive when used on a “corner-earthed” supply system as well as all other common supply systems for altitudes up to and including 2000 m (6562 ft).
- When used at altitudes above 2000 m (6562 ft) up to a maximum of 4865 m (15,961 ft), PowerFlex 750-Series drives of voltage classes up to 480V may not be powered from a “corner-earthed” supply system in order to maintain compliance with the CE LV Directive.
- Drives provided in the IP54, NEMA/UL Type 12 enclosure are compliant with the CE LV Directive when installed in pollution degree 1...4 environments. All other enclosure types must be installed in a pollution degree 1 or 2 environment to be compliant with the CE LV Directive. Characteristics of the different pollution degree ratings are provided on [page A-5](#).
- NEMA/UL Open Type and Flange Mount drives must either be installed in a supplementary enclosure or equipped with a “NEMA Type 1 Kit” to be CE compliant with respect to protection against electrical shock.
- PowerFlex 750-Series drives produce touch current in the protective earthing conductor which exceeds 3.5 mA AC and/or 10 mA DC. The minimum size of the protective earthing (grounding) conductor used in the application must comply with local safety regulations for high protective earthing conductor current equipment.

Installation Requirements Related to EN 61800-3 and the EMC Directive

- The drive must be earthed (grounded) as described in the PowerFlex 750-Series User Manual, publication 750-UM001.
- Output power wiring to the motor must employ cable with a braided shield providing 75% or greater coverage, or the cables must be housed in metal conduit, or equivalent shielding must be provided. Continuous shielding must be provided from the drive enclosure to the motor enclosure. Both ends of the motor cable shield (or conduit) must terminate with a low-impedance connection to earth. At the drive end of the motor cable, either
 - a) The cable shield must be clamped to a properly-installed “EMC plate” for the drive. Kit number 20-750-EMC1-Fx.
- or
- b) The cable shield or conduit must terminate in a shielded connector used in conjunction with a properly-installed conduit plate or conduit box provided in the “NEMA Type 1 Kit” for the drive. Kit number 20-750-NEMA1-Fx.
- At the motor end, the motor cable shield or conduit must terminate in a shielded connector which must be properly installed in an earthed motor wiring box attached to the motor. The motor wiring box cover must be installed and earthed.
- All control (I/O) and signal wiring to the drive must use cable with a braided shield providing 75% or greater coverage, or the cables must be housed in metal conduit, or equivalent shielding must be provided. When shielded cable is used, only the drive end of the cable shield should be terminated with a low-impedance connection to earth. The cable shield may be terminated either by using a shielded connector in conjunction with a conduit plate or conduit box, or the shield may be clamped to an “EMC plate.”
- Motor cabling must be separated from control and signal wiring wherever possible.
- Maximum motor cable length must not exceed the maximum length indicated in [Table 1.X](#) for compliance with radio frequency emission limits for the specific standard and installation environment.
- EMC cores must be applied to input power and motor cabling for some models of the PowerFlex 750-Series drives as indicated in [Table 1.X](#).
- The drive must be powered from an earthed supply system such as a TN or TT system and the PE-A and PE-B jumpers in the drive must be installed (see Drive Power Jumper Configuration starting on [page 1-17](#)).

Table 1.X PowerFlex 750-Series RF Emission Compliance and Installation Requirements

Drive Frame Catalog Number	Standard / Limits			
	EN61800-3 Cat. C1 EN61000-6-3 CISPR11 Group 1 Class B	EN61800-3 Cat. C2 EN61000-6-3 CISPR11 Group 1 Class A	EN61800-3 Cat. C3 $I \leq 100 \text{ A}^{(2)}$	EN61800-3 Cat. C3 $I > 100 \text{ A}$
Frame 2 20G11AC011...20G11AC022	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit with input core ⁽¹⁾	30 m motor cable limit with input core ⁽¹⁾	N/A
Frame 3 20G11AC030...20G11AC043	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit with input core ⁽¹⁾	30 m motor cable limit with input core ⁽¹⁾	N/A
Frame 4 20G11AC060...20G11AC072	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit with input and output cores ⁽¹⁾	30 m motor cable limit with input and output cores ⁽¹⁾	N/A
Frame 5 20G11AC085...20G11AC104	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit with input and output cores ⁽¹⁾	30 m motor cable limit with input and output cores ⁽¹⁾	30 m motor cable limit with input and output cores ⁽¹⁾
Frame 6 20G11AC140...20G11AC260	Compliance possible with supplementary mitigation (Consult factory)	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit	30 m motor cable limit
Frame 7 20G11AC302...20G11AC477	Compliance possible with supplementary mitigation (Consult factory)	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit	30 m motor cable limit
More Stringent Limits			Less Stringent Limits	

⁽¹⁾ Rating-specific EMC cores are part of EMC kit numbers 20-750-EMC1-xx and 20-750-EMC2-xx (see ordering literature).

⁽²⁾ These limits correspond to Group 1 Class A for equipment with rated input power greater than 20 kVA in an anticipated version of CISPR 11.

Start Up

Chapter Objectives

This chapter provides the information needed to start up the PowerFlex[®] 750-Series drive.

For Information on ...	See Page...
Prepare For Drive Start-Up	2-4
Start-Up Menu	2-5
Status Indicators	2-6

- This check list supports the Start-Up menu option.
- A Human Interface Module (HIM) is required to run the Start-Up routine.
- The Start-Up routine may modify parameter values for Analog and Digital I/O.



ATTENTION: Power must be applied to the drive to perform the following start-up procedure. Some of the voltages present are at incoming line potential. To avoid electric shock hazard or damage to equipment, only qualified service personnel should perform the following procedure. Thoroughly read and understand the procedure before beginning.

Establishing A Connection With EtherNet/IP

There are three methods for configuring the embedded EtherNet/IP adapter's IP address:

- **Adapter Rotary Switches** – Use the switches when working on a simple, isolated network (for example, 192.168.1.xxx) that has other products with switches to set their IP addresses, does not need to be accessed from outside the network, and you prefer a simplified node addressing method. The three adapter switches are read when the drive powers up, and represent three decimal digits from top to bottom (see [Figure 2.1](#)). If set to a valid address (001-254), the adapter will use that value as the lower octet of its IP address (192.168.1.xxx, where xxx = rotary switch settings), along with a subnet mask of 255.255.255.0 and there will be no gateway configured. Also, the setting for adapter P36 [BOOTP] is automatically ignored.

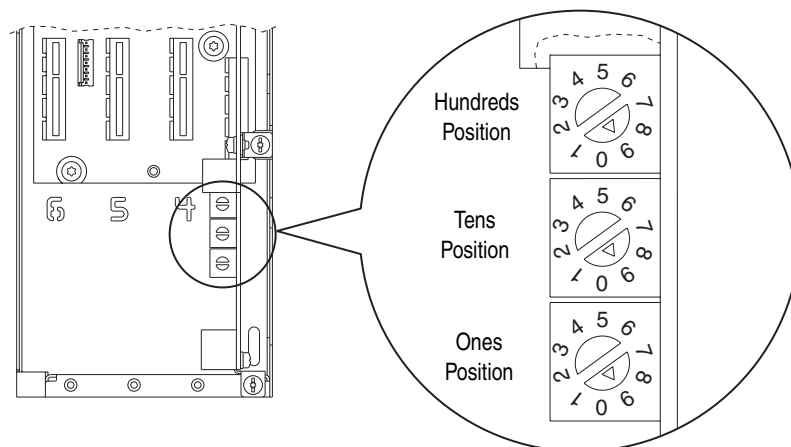
See [Figure 2.1](#) and its accompanying table for all possible switch settings and their related descriptions.

Important: When using the adapter rotary switches, set the IP address before power is applied because the adapter uses the IP address it detects when it first receives power.

- **BOOTP Server** – Use BOOTP if you prefer to control the IP addresses of devices using a server. The IP address, subnet mask, and gateway addresses will then be provided by the BOOTP server.
- **Adapter Parameters** – Use adapter parameters when you want more flexibility in setting up the IP address, or need to communicate outside the control network using a gateway. The IP address, subnet mask, and gateway addresses will then come from the adapter parameters you set.

Important: Regardless of the method used to set the adapter's IP address, each node on the EtherNet/IP network must have a unique IP address. To change an IP address, you must set the new value and then remove and reapply power to (or reset) the adapter.

Figure 2.1 Setting the IP Address Switches

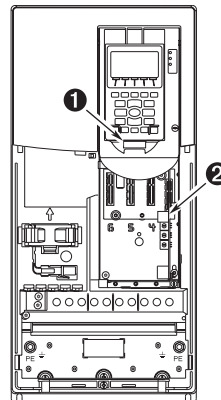


Possible Settings	Description
000	Adapter will use, depending on P36 [BOOTP], the BOOTP setting or the adapter parameter settings for the IP address.
001 - 254	Adapter will use the rotary switch settings for the IP address (192.168.1.xxx, where xxx = rotary switch settings).
255 - 887	Adapter will use, depending on P6 [BOOTP], the BOOTP setting or the adapter parameter settings for the IP address.
888	Resets the adapter IP address function to factory defaults. Thereafter, the drive must be powered down, the switches set to a setting other than 888, and then the drive must be powered up again to accept the new address.
889 - 998	Adapter will use, depending on P36 [BOOTP], the BOOTP setting or the adapter parameter settings for the IP address.
999 (default settings)	Disables the rotary switches. Adapter will use, depending on P36 [BOOTP], the BOOTP setting or the adapter parameter settings for the IP address.

Prepare For Drive Start-Up Before Applying Power to the Drive

- ❑ 1. Confirm that all inputs are connected to the correct terminals and are secure.
- ❑ 2. Verify that AC line power at the disconnect device is within the rated value of the drive.
- ❑ 3. Verify that control power voltage is correct.
- ❑ 4. The remainder of this procedure requires that a Human Interface Module (HIM) to DPI Port 1 or 2.

Figure 2.2 DPI Ports ① and ②



- ❑ 5. Apply AC power and control voltages to the drive.

If any digital inputs are configured to Stop – CF, Run, or Enable, verify that signals are present or the drive will not start. Refer to [Chapter 4](#) for a list of potential digital input conflicts.

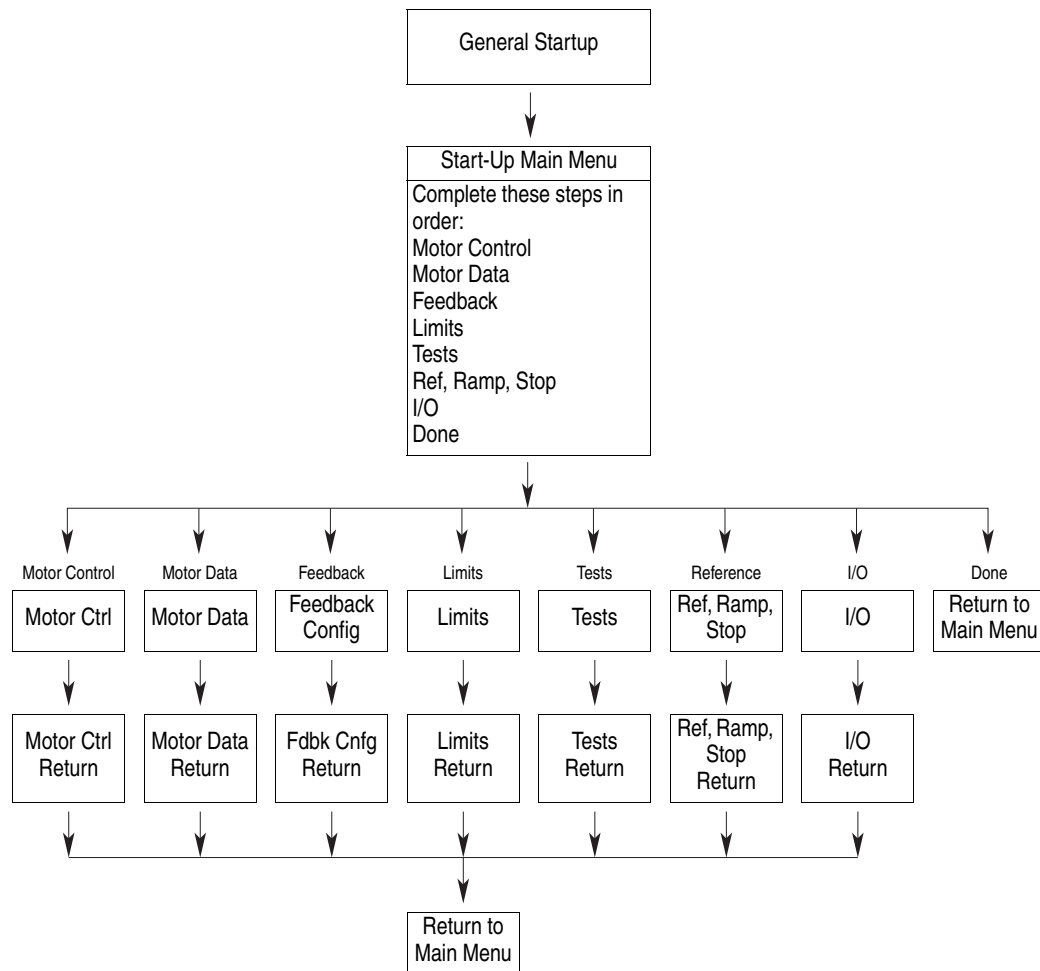
If the STS LED is not flashing green at this point, refer to [Status Indicators on page 2-6](#).

- ❑ 6. When prompted, select a display language. The Start-Up Screen will then display.
- ❑ 7. Press the Enter key to display the Start-Up Menu.
- ❑ 8. Use the Up/Down Arrow keys to highlight “2. Basic”.
- ❑ 9. Press the Enter key. Follow the menu using the Enter key which will step you through the Start-Up routine.

The Start-Up routine asks simple questions and prompts you to input required information.

Start-Up Menu

The General Start-Up menu is displayed by default upon initial power up of the drive.



Status Indicators

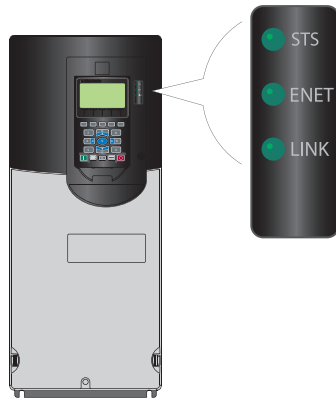


Table 1 Drive Status Indicator Descriptions

Name	Color	State	Description
STS (Status)	Green	Flashing	Drive ready, but not running & no faults are present.
		Steady	Drive running, no faults are present.
	Yellow	Flashing	When running, a type 2 (non-configurable) alarm condition exists, drive continues to run. When stopped, a start inhibit exists and the drive cannot be started.
		Steady	A type 1 (user configurable) alarm condition exists, but drive continues to run.
	Red	Flashing	A major fault has occurred. Drive will stop. Drive cannot be started until fault condition is cleared.
		Steady	A non-resettable fault has occurred.
	Red / Yellow	Flashing Alternately	A minor fault has occurred. Use parameter 950 [Minor Flt Config] to enable. If not enabled acts like a major fault. When running, drive continues to run. System is brought to a stop under system control. Fault must be cleared to continue.
	Yellow / Green	Flashing Alternately	When running, a type 1 alarm condition exists.
	Green / Red	Flashing Alternately	Drive is flash upgrading.
ENET	Unlit	Off	The embedded EtherNet/IP adapter and/or network is not powered, the adapter is not properly connected to the network, or the adapter needs an IP address.
	Red	Steady	The embedded EtherNet/IP adapter failed the duplicate IP address detection test.
	Red	Flashing	An EtherNet/IP connection has timed out.
	Red / Green	Flashing	The embedded EtherNet/IP adapter is performing a self-test.
	Green	Flashing	The embedded EtherNet/IP adapter is properly connected but is not communicating with any devices on the network.
	Green	Steady	The embedded EtherNet/IP adapter is properly connected and communicating on the network.
LINK	Unlit	Off	The embedded EtherNet/IP adapter is not powered or is not transmitting on the network.
	Green	Flashing	The embedded EtherNet/IP adapter is transmitting on the network.

Important: The Status Indicator LEDs on the drive cover do not indicate the current status of an installed Communication Adapter option. If an optional Communication Adapter is installed, refer to that option's user manual for a description of LED location and indication.

Programming and Parameters

This chapter provides a complete listing and description of the PowerFlex[®] 750-Series drive parameters. The parameters can be programmed (viewed/edited) using a Human Interface Module (HIM). Refer to [Appendix B](#) for information on using the HIM to view and edit parameters. As an alternative, programming can also be performed using DriveTools™ software and a personal computer.

For information on...	See page
About Parameters	3-1
How Drive Parameters are Organized	3-3
How Option Module Parameters are Organized	3-14
Drive Monitor File	3-17
Drive Motor Control File	3-18
Drive Feedback & IO File	3-25
Drive Cfg File	3-32
Drive Protection File	3-43
Drive Speed Control File	3-51
Drive Torque Control File	3-67
Drive Position Control File	3-72
Drive Communication File	3-84
Drive Diagnostics File	3-89
Drive Applications File	3-99
Drive Parameter Cross Reference By Name	3-115
I/O Module Parameters	3-120
Single Incremental Encoder Module Parameters	3-131
Safe Speed Monitor Module Parameters	3-133
	3-133
Universal Feedback Module Parameters	3-147
Embedded EtherNet/IP Parameters	3-159

About Parameters

To configure a drive module to operate in a specific way, certain drive parameters may have to be configured appropriately. Three types of parameters exist:

- **ENUM Parameters**
These parameters allow a selection from 2 or more items. The LCD HIM will display a text message for each item.
- **Bit Parameters**
These parameters have individual bits associated with features or conditions. If the bit is 0, the feature is off or the condition is false. If the bit is 1, the feature is on or the condition is true.
- **Numeric Parameters**
These parameters have a single numeric value (i.e. 0.1 Volts).

The example on the following page shows how each parameter type is presented in this manual.

Table 3.A Table Explanation

1		2		3				
		No.	Name Description	Values		Read-Write	Data Type	
MOTOR CONTROL	Motor Data	28	 Motor NP RPM Motor Nameplate Revolutions Per Minute Rated RPM shown on the motor nameplate.	Units:	RPM	RW	Real	
				Default:	1750.0			
				Min/Max:	1.0 / 40000.0			
MOTOR CONTROL	Vector Regulator	107	Trq Adapt En Torque Adaption Enable Enables or disables the adaptive torque calculation. This selection is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default:	1 = "Enabled"	RW	32-bit Integer	
				Options:	0 = "Disabled" 1 = "Enabled"			
FEEDBACK AND IO	Control Board IO	220	Digital In Sts Digital Input Status Status of the digital input(s) resident on the main control board (Port 0).					
			Options	Reserved	Reserved	Reserved	Reserved	Digital In 0
			Default	0	0	0	0	0
			Bit	15	14	13	12	11
				10	9	8	7	6
				5	4	3	2	1
				0	0 = Condition False 1 = Condition True			

No.	Name Description	Read-Write	Data Type	
❶	No. - Parameter Number			
	 Parameter value cannot be changed until the drive is stopped.			
❷	Name - Parameter name as it appears in the DriveExecutive software.			
	Description - Brief description of parameter function. The first line is the full text parameter name.			
❸	Values - Define the various operating characteristics of the parameter. <i>There are 3 types of Values.</i>			
	ENUM	Default: Options:		Lists the value assigned at the factory. Displays the selections available.
	Bit	Default: Options:		Lists the value assigned at the factory. Displays the selections available.
	Numeric	Default Min/Max.		Lists the value assigned at the factory. Displays lowest possible setting/Displays highest possible setting.
	Indicates if parameter is read-write or read-only. RW=Read-Write RO=Read Only			
Indicates parameter data type (i.e. integer, floating point, boolean).		RW RO	32-bit Integer	

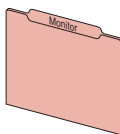
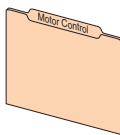
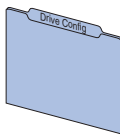
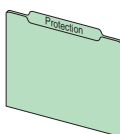
How Drive Parameters are Organized

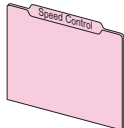
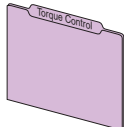
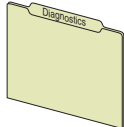
DriveExecutive programming software displays parameters in “Linear List” or “File Group Parameter” format. Viewing the parameters in “File Group Parameter” format simplifies programming by grouping parameters that are used for similar functions. There are eleven files. Each file is divided into multiple groups of parameters.

Parameter descriptions begin on [page 3-17](#).

Basic Parameter View

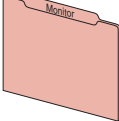
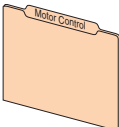
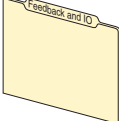
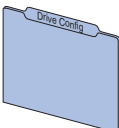
Parameter 301 [Access Level] set to option 0 “Basic.”

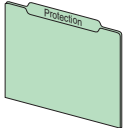
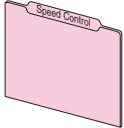
File	Group	Parameters								
	Monitor	Output Frequency	1	Torque Cur Fdbk	5	Output Power	9			
		Commanded SpdRef	2	Flux Cur Fdbk	6	DC Bus Volts	11			
		Mtr Vel Fdbk	3	Output Current	7					
		Commanded Trq	4	Output Voltage	8					
	Drive Data	Rated Volts	20	Rated Amps	21	Rated kW	22			
	Motor Data	Motor NP Volts	25	Motor NP Hertz	27	Mtr NP Pwr Units	29	Motor Poles	31	
		Motor NP Amps	26	Motor NP RPM	28	Motor NP Power	30			
	Mtr Ctrl Options	Motor Ctrl Mode	35	Maximum Voltage	36	PWM Frequency	38			
		Maximum Freq	37							
	Volts per Hertz	VHz Curve	65							
	Feedback & IO	Autotune	70	Autotune Torque	71					
		Digin Functions	Digital In Conf	150	DI Jog 1	166	DI Accel 2	179		
			DI Enable	155	DI Jog 1 Forward	167	DI Decel 2	180		
			DI Clear Fault	156	DI Jog 1 Reverse	168				
			DI Aux Fault	157	DI Jog 2	169				
			DI Stop	158	DI Jog 2 Forward	170				
			DI Cur Lmt Stop	159	DI Jog 2 Reverse	171				
			DI Coast Stop	160	DI Manual Ctrl	172				
			DI Start	161	DI Speed Sel 0	173				
			DI Fwd Reverse	162	DI Speed Sel 1	174				
			DI Run	163	DI Speed Sel 2	175				
			DI Run Forward	164						
			DI Run Reverse	165						
	Control Board IO		Digital In Sts	220						
	Drive Cfg	Preferences	Speed Units	300						
			Access Level	301						
			Language	302						
	Control Cfg	Voltage Class	305	SpdTrqPsn Mode A	309					
		Duty Rating	306							
		Direction Mode	308							
	Auto Manual Ctrl	Logic Mask	324	Alt Man Ref Sel	328	Manual Preload	331			
		Auto Mask	325	Alt Man Ref AnHi	329					
		Manual Cmd Mask	326	Alt Man Ref AnLo	330					
		Manual Ref Mask	327							
Braking Features	Stop Mode A	370	DB Resistor Type	382						
	Stop Mode B	371	DB Ext Ohms	383						
	Bus Reg Mode A	372	DB Ext Watts	384						
	Bus Reg Mode B	373	DB ExtPulseWatts	385						
	Protection	Motor Overload	Motor OL Actn	410	Mtr OL Factor	413	Mtr OL Reset Lvl	415		
			Mtr OL at Pwr Up	411	Mtr OL Hertz	414	MtrOL Reset Time	416		
			Mtr OL Alarm Lvl	412						
	Load Limits	Current Lmt Sel	421				Shear Pin Cfg	434	Power Loss Actn	449
		Current Limit 1	422				Shear Pin 1 Actn	435		
							Shear Pin1 Level	436		
							Shear Pin 1 Time	437		
	Power Loss	Pwr Loss Mode A	450							

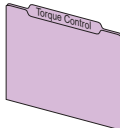
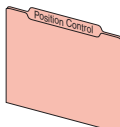
File	Group	Parameters								
	Speed Control	Speed Limits	Max Fwd Speed	520	Min Fwd Speed	522				
			Max Rev Speed	521	Min Rev Speed	523				
	Speed Ramp Rates	Accel Time 1	535	Decel Time 1	537	Jog Acc Dec Time	539			
		Accel Time 2	536	Decel Time 2	538					
	Speed Reference	Spd Ref A Sel	545	Jog Speed 1	556	Preset Speed 1	571			
		Spd Ref A Stpt	546	Jog Speed 2	557	Preset Speed 2	572			
		Spd Ref A AnlgHi	547			Preset Speed 3	573			
		Spd Ref A AnlgLo	548			Preset Speed 4	574			
		Spd Ref B Sel	550			Preset Speed 5	575			
		Spd Ref B Stpt	551			Preset Speed 6	576			
		Spd Ref B AnlgHi	552			Preset Speed 7	577			
		Spd Ref B AnlgLo	553							
	Torque Reference	Trq Ref A Sel	675	Trq Ref B Sel	680	Selected Trq Ref	685	Torque Step	686	
		Trq Ref A Stpt	676	Trq Ref B Stpt	681			Notch Fltr Freq	687	
		Trq Ref A AnlgHi	677	Trq Ref B AnlgHi	682			Notch Fltr Atten	688	
		Trq Ref A AnlgLo	678	Trq Ref B AnlgLo	683			Filtered Trq Ref	689	
		Trq Ref A Mult	679	Trq Ref B Mult	684			Limited Trq Ref	690	
	Communication	Comm Control	Port 1 Reference	871						
		DPI Datalinks	Data In A1	895	Data In C1	899	Data Out A1	905	Data Out C1	909
			Data In A2	896	Data In C2	900	Data Out A2	906	Data Out C2	910
			Data In B1	897	Data In D1	901	Data Out B1	907	Data Out D1	911
			Data In B2	898	Data In D2	902	Data Out B2	908	Data Out D2	912
	Diagnostics	Status	Speed Ref Source	930	Drive Status 1	935				
			Last StartSource	931	Drive Status 2	936				
			Last Stop Source	932	Condition Sts 1	937				
			Start Inhibits	933						
			Last StrtInhibit	934						
	Fault/Alarm Info	Minor Flt Cfg	950							
		Last Fault Code	951							
		Fault Status A	952							
		Fault Status B	953							

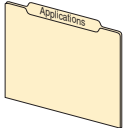
Advanced Parameter View

Parameter 301 [Access Level] set to option 1 “Advanced.”

File	Group	Parameters							
Monitor 	Metering	Output Frequency	1	Torque Cur Fdbk	5	Output Power	9	Elapsed MWH	13
		Commanded SpdRef	2	Flux Cur Fdbk	6	Output Powr Fctr	10	Elapsed kWh	14
		Mtr Vel Fdbk	3	Output Current	7	DC Bus Volts	11	Elapsed Run Time	15
		Commanded Trq	4	Output Voltage	8	DC Bus Memory	12		
	Drive Data	Rated Volts	20	Rated Amps	21	Rated kW	22		
Motor Control 	Motor Data	Motor NP Volts	25	Motor NP Hertz	27	Mtr NP Pwr Units	29	Motor Poles	31
		Motor NP Amps	26	Motor NP RPM	28	Motor NP Power	30		
	Mtr Ctrl Options	Motor Ctrl Mode	35	Flux Up Enable	43				
		Maximum Voltage	36	Flux Up Time	44				
		Maximum Freq	37						
		PWM Frequency	38						
		Mtr Options Cnfg	40						
	Volts per Hertz	Start/Acc Boost	60	Break Voltage	62	VHz Curve	65		
		Run Boost	61	Break Frequency	63				
	Autotune	Autotune	70	Total Inertia	76				
		Autotune Torque	71	Inertia Test Lmt	77				
		IR Voltage Drop	73						
		Ixo Voltage Drop	74						
		Flux Current Ref	75						
Feedback & IO 	Digin Functions	Digital In Conf	150	DI Jog 1	166	DI Accel 2	179	DI PID Reset	193
		DI Enable	155	DI Jog 1 Forward	167	DI Decel 2	180	DI PID Invert	194
		DI Clear Fault	156	DI Jog 1 Reverse	168	DI SpTqPs Sel 0	181	DI Torque StptA	195
		DI Aux Fault	157	DI Jog 2	169	DI SpTqPs Sel 1	182	DI Fwd End Limit	196
		DI Stop	158	DI Jog 2 Forward	170	DI Stop Mode B	185	DI Fwd Dec Limit	197
		DI Cur Lmt Stop	159	DI Jog 2 Reverse	171	DI BusReg Mode B	186	DI Rev End Limit	198
		DI Coast Stop	160	DI Manual Ctrl	172	DI PwrLoss ModeB	187	DI Rev Dec Limit	199
		DI Start	161	DI Speed Sel 0	173	DI Pwr Loss	188	DI PHdwr OvrTrvl	200
		DI Fwd Reverse	162	DI Speed Sel 1	174	DI Precharge	189	DI NHdwr OvrTrvl	201
		DI Run	163	DI Speed Sel 2	175	DI Prchrg Seal	190		
		DI Run Forward	164	DI MOP Inc	177	DI PID Enable	191		
		DI Run Reverse	165	DI MOP Dec	178	DI PID Hold	192		
	Control Board IO	Digital In Sts	220						
Drive Cfg 	Preferences	Speed Units	300						
		Access Level	301						
		Language	302						
	Control Cfg	Voltage Class	305	SpdTrqPsn Mode A	309	Actv SpTqPs Mode	313	Prchrg Control	321
		Duty Rating	306	SpdTrqPsn Mode B	310	SLAT Err Stpt	314	Prchrg Delay	322
		Direction Mode	308	SpdTrqPsn Mode C	311	SLAT Dwell Time	315	Prchrg Err Cfg	323
				SpdTrqPsn Mode D	312			Logic Mask	324
	Auto Manual Ctrl	Auto Mask	325	Alt Man Ref Sel	328	Manual Preload	331		
		Manual Cmd Mask	326	Alt Man Ref AnHi	329				
		Manual Ref Mask	327	Alt Man Ref AnLo	330				
	Drive Memory	Reset Meters	336						
	Start Features	Start At PowerUp	345	Sleep Wake Mode	350	FlyingStart Mode	356		
		PowerUp Delay	346	SleepWake RefSel	351				
		Auto Retry Fault	347	Sleep Level	352				
		Auto Rstrt Tries	348	Sleep Time	353				
		Auto Rstrt Delay	349	Wake Level	354				
				Wake Time	355				
	Braking Features	Stop Mode A	370	DB Resistor Type	382	DC Brake Lvl Sel	393	Fast Braking Kp	401
		Stop Mode B	371	DB Ext Ohms	383	DC Brake Level	394	Brake Off Adj 1	402
		Bus Reg Mode A	372	DB Ext Watts	384	DC Brake Time	395	Brake Off Adj 2	403
		Bus Reg Mode B	373	DB ExtPulseWatts	385			Dec Inhibit Actn	409
		Bus Reg Lvl Cnfg	374	Flux Braking En	388				
		Bus Reg Level	375	Flux Braking Lmt	389				

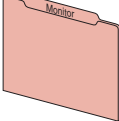
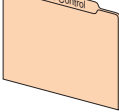
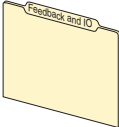
File	Group	Parameters							
Protection 	Motor Overload	Motor OL Actn	410	Mtr OL Factor	413	Mtr OL Reset Lvl	415	Mtr OL Counts	418
		Mtr OL at Pwr Up	411	Mtr OL Hertz	414	MtrOL Reset Time	416	Mtr OL Trip Time	419
		Mtr OL Alarm Lvl	412						
	Load Limits	Drive OL Mode	420	Motor Power Lmt	427	Shear Pin Cfg	434	Load Loss Action	441
		Current Lmt Sel	421			Shear Pin 1 Actn	435	Load Loss Level	442
		Current Limit 1	422			Shear Pin1 Level	436	Load Loss Time	443
		Current Limit 2	423			Shear Pin 1 Time	437	OutPhaseLossActn	444
		Active Cur Lmt	424			Shear Pin 2 Actn	438	Out PhaseLossLvl	445
		Current Rate Lmt	425			Shear Pin2 Level	439		
		Regen Power Lmt	426			Shear Pin 2 Time	440		
	Power Loss	Power Loss Actn	449	Pwr Loss Mode B	453			UnderVltg Action	460
		Pwr Loss Mode A	450	Pwr Loss B Level	454			UnderVltg Level	461
		Pwr Loss A Level	451	Pwr Loss B Time	455			InPhase LossActn	462
		Pwr Loss A Time	452					InPhase Loss Lvl	463
	Ground Fault	Ground Warn Actn	466					DC Bus Mem Reset	464
		Ground Warn Lvl	467						
	Predictive Maint	PredMaint Status	469	HSFan Derate	488	MtrBrngTotalLife	502	MchBrngTotalLife	511
		PredMaintAmbTemp	470	HSFan TotalLife	489	MtrBrngElpsdLife	503	MchBrngElpsdLife	512
		PredMaint Rst En	471	HSFan ElpsdLife	490	MtrBrngRemainLif	504	MchBrngRemainLif	513
		PredMaint Reset	472	HSFan RemainLife	491	MtrBrngEventLvl	505	MchBrngEventLvl	514
				HSFan EventLevel	492	MtrBrngEventActn	506	MchBrngEventActn	515
				HSFan EventActn	493	MtrBrng ResetLog	507	MchBrngResetLog	516
				HSFan ResetLog	494	MtrLubeElpsdHrs	508	MchLubeElpsdHrs	517
				InFan Derate	495	MtrLubeEventLvl	509	MchLube EventLvl	518
				InFan TotalLife	496	MtrLubeEventActn	510	MchLubeEventActn	519
				InFan ElpsdLife	497				
				InFan RemainLife	498				
				InFan EventLevel	499				
				InFan EventActn	500				
				InFan ResetLog	501				
Speed Control 	Speed Limits	Max Fwd Speed	520	Min Fwd Speed	522	Overspeed Limit	524	Skip Speed 1	526
		Max Rev Speed	521	Min Rev Speed	523	Zero Speed Limit	525	Skip Speed 2	527
								Skip Speed 3	528
								Skip Speed Band	529
	Speed Ramp Rates	Accel Time 1	535	Decel Time 1	537	Jog Acc Dec Time	539	S Curve Accel	540
		Accel Time 2	536	Decel Time 2	538			S Curve Decel	541
	Speed Reference	Spd Ref A Sel	545	Spd Ref Scale	555	Preset Speed 1	571		
		Spd Ref A Stpt	546	Jog Speed 1	556	Preset Speed 2	572		
		Spd Ref A AnlgHi	547	Jog Speed 2	557	Preset Speed 3	573		
		Spd Ref A AnlgLo	548	MOP Reference	558	Preset Speed 4	574		
		Spd Ref A Mult	549	Save MOP Ref	559	Preset Speed 5	575		
		Spd Ref B Sel	550	MOP Rate	560	Preset Speed 6	576		
		Spd Ref B Stpt	551	MOP High Limit	561	Preset Speed 7	577		
		Spd Ref B AnlgHi	552	MOP Low Limit	562				
		Spd Ref B AnlgLo	553	DI ManRef Sel	563				
		Spd Ref B Mult	554	DI ManRef AnlgHi	564				
				DI ManRef AnlgLo	565				
	Speed Trim	Trim Ref A Sel	600	Trim Ref B Sel	604	TrmPct RefA Sel	608	TrmPct RefB Sel	612
		Trim Ref A Stpt	601	Trim Ref B Stpt	605	TrmPct RefA Stpt	609	TrmPct RefB Stpt	613
		Trim RefA AnlgHi	602	Trim RefB AnlgHi	606	TrmPct RefA AnHi	610	TrmPct RefB AnHi	614
		Trim RefA AnlgLo	603	Trim RefB AnlgLo	607	TrmPct RefA AnLo	611	TrmPct RefB AnLo	615
	Slip/Droop Comp	Droop RPM @ FLA	620						
		Slip RPM @ FLA	621						
		Slip Comp BW	622						
	Speed Regulator	Spd Options Ctrl	635	Speed Reg Kp	645	Spd Loop Damping	653	VHzSV Spd Reg Kp	663
		Speed Reg BW	636	Speed Reg Max Kp	646	Spd Reg Int Out	654	VHzSV Spd Reg Ki	664
		Filtered SpdFdbk	640	Speed Reg Ki	647	Spd Reg Pos Lmt	655		
		Speed Error	641			Spd Reg Neg Lmt	656		
						SReg Output	660		
	Speed Comp	Speed Comp Sel	665						
		Speed Comp Gain	666						
		Speed Comp Out	667						

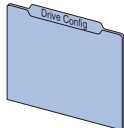
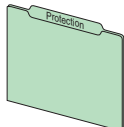
File	Group	Parameters							
	Torque Limits	Pos Torque Limit	670						
		Neg Torque Limit	671						
	Torque Reference	Trq Ref A Sel	675	Trq Ref B Sel	680	Selected Trq Ref	685	Torque Step	686
		Trq Ref A Stpt	676	Trq Ref B Stpt	681			Filtered Trq Ref	689
		Trq Ref A AnlgHi	677	Trq Ref B AnlgHi	682			Limited Trq Ref	690
		Trq Ref A AnlgLo	678	Trq Ref B AnlgLo	683				
		Trq Ref A Mult	679	Trq Ref B Mult	684				
	Inertia Comp	Inertia CompMode	695	Inertia Acc Gain	696	Inert Comp LPFBW	698	Ext Ramped Ref	700
				Inertia Dec Gain	697	Inertia Comp Out	699	InAdp LdObs Mode	704
	Friction Comp	Inertia Adapt BW	705	Load Estimate	707	IA LdObs Delay	709	Load Observer BW	711
	InertiaAdaptGain	706	InertiaTrqAdd	708	InertAdptFtrBW	710			
	Position Cfg/Sts	PTP PsnRefStatus	720	Psn Selected Ref	722	Psn Reg Status	724	In Pos Psn Band	726
		Position Control	721	Psn Command	723	Zero Position	725	In Pos Psn Dwell	727
	Position Homing	Homing Status	730	DI Find Home	732	Find Home Speed	735	Actual Home Psn	737
		Homing Control	731	DI Redefine Psn	733	Find Home Ramp	736	User Home Psn	738
				DI OL Home Limit	734				
	Position Watch	PsnWatch1 Select	745	PsnWatch2 Select	748				
		PsnWatch1 DtctIn	746	PsnWatch2 DtctIn	749				
		PsnWatch1 Stpt	747	PsnWatch2 Stpt	750				
	Direct	Psn Ref Select	765	Psn Direct Stpt	766				
				Psn Direct Ref	767				
	Point to Point	PTP Control	770	PTP Ref Sel	775	PTP Setpoint	780	PTP Fwd Vel Lmt	785
		PTP Mode	771	PTP Reference	776	PTP Accel Time	781	PTP Rev Vel Lmt	786
		DI Indx Step	772	PTP Feedback	777	PTP Decel Time	782	PTP S Curve	787
		DI Indx StepRev	773	PTP Ref Scale	778	PTP Speed FwdRef	783	PTP Vel Override	788
		DI Indx StepPrst	774	PTP Index Preset	779	PTP Command	784	PTP Egr Mult	789
								PTP Egr Div	790
	Phase Lock Loop	PLL Control	795	PLL Psn Ref Sel	799	PLL EPR Input	804	PLL Enc Out	809
		PLL Ext Spd Sel	796	PLL Psn Stpt	800	PLL Rvls Input	805	PLL Enc Out Adv	810
		PLL Ext Spd Stpt	797	PLL BW	801	PLL Psn Out Ftr	806	PLL EPR Output	811
		PLL Ext SpdScale	798	PLL LPFilter BW	802	PLL Speed Out	807	PLL Rvls Output	812
				PLL Virt Enc RPM	803	PLL Speed OutAdv	808		
	Electronic Gear	Psn Ref EGR Out	815	Psn EGR Mult	816				
			Psn EGR Div	817					
Position Offset	Psn Offset 1 Sel	820	Psn Offset 2 Sel	822	Psn Offset Vel	824			
	Psn Offset 1	821	Psn Offset 2	823					
Ld Psn Fdbk Scal	LdPsn Fdbk Mult	825	LdPsn Fdbk Div	826					
Position Reg			Psn Error	835	PReg Pos Int Lmt	840	PReg Pos Spd Lmt	844	
			Psn Actual	836	PReg Neg Int Lmt	841	PReg Neg Spd Lmt	845	
			Psn Load Actual	837	PsnReg IntgrlOut	842	Psn Reg Droop	846	
			Psn Reg Ki	838	PsnReg Spd Out	843	Psn Fdbk	847	
			Psn Reg Kp	839					
	Comm Control	Port 1 Reference	871	Port 4 Reference	874	Port13 Reference	877	Drive Logic Rslt	879
		Port 2 Reference	872	Port 5 Reference	875	Port14 Reference	878	DPI Ref Rslt	880
		Port 3 Reference	873	Port 6 Reference	876			DPI Ramp Rslt	881
								DPI Peer Cmd	882
	Security	Port Mask Act	885	Write Mask Act	887				
		Logic Mask Act	886	Write Mask Cfg	888				
	DPI Datalinks	Data In A1	895	Data In C1	899	Data Out A1	905	Data Out C1	909
		Data In A2	896	Data In C2	900	Data Out A2	906	Data Out C2	910
		Data In B1	897	Data In D1	901	Data Out B1	907	Data Out D1	911
		Data In B2	898	Data In D2	902	Data Out B2	908	Data Out D2	912
Owners	Stop Owner	919	Jog Owner	921	Clear Flt Owner	923	Ref Select Owner	925	
	Start Owner	920	Dir Owner	922	Manual Owner	924			
	Status	Speed Ref Source	930	Drive Status 1	935	IGBT Temp Pct	941	At Limit Status	945
		Last StartSource	931	Drive Status 2	936	IGBT Temp C	942	Safety Port STS	946
		Last Stop Source	932	Condition Sts 1	937	Drive Temp Pct	943		
		Start Inhibits	933	Drive OL Count	940	Drive Temp C	944		
		Last StrtInhibit	934						
	Fault/Alarm Info	Minor Flt Cfg	950	Status1 at Fault	954	Alarm Status A	959	AlarmA at Fault	962
		Last Fault Code	951	Status2 at Fault	955	Alarm Status B	960	AlarmB at Fault	963
		Fault Status A	952	Fault Frequency	956	Type 2 Alarms	961		
		Fault Status B	953	Fault Amps	957				
				Fault Bus Volts	958				
	Peak Detection	PkDtct Stpt Real	1035	PkDtct1PresetSel	1038	PeakDetect1 Out	1041	Peak2 Cfg	1044
		PkDtct Stpt Dint	1036	Peak1 Cfg	1039	PkDtct2 In Sel	1042	Peak 2 Change	1045
	PkDtct1 In Sel	1037	Peak 1 Change	1040	PkDtct2PresetSel	1043	PeakDetect2 Out	1046	

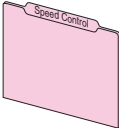
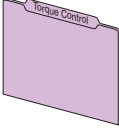
File	Group	Parameters							
Applications 	Process PID	PID Cfg	1065	PID Fdbk Sel	1072	PID Output Sel	1079	PID Prop Gain	1086
		PID Control	1066	PID Fdbk AnlgHi	1073	PID Output Mult	1080	PID Int Time	1087
		PID Ref Sel	1067	PID Fdbk AnlgLo	1074	PID Upper Limit	1081	PID Deriv Time	1088
		PID Ref AnlgHi	1068	PID FBloss SpSel	1075	PID Lower Limit	1082	PID Status	1089
		PID Ref AnlgLo	1069	PID FBloss TqSel	1076	PID Deadband	1083	PID Ref Meter	1090
		PID Setpoint	1070	PID Fdbk	1077	PID LP Filter BW	1084	PID Fdbk Meter	1091
		PID Ref Mult	1071	PID Fdbk Mult	1078	PID Preload	1085	PID Error Meter	1092
								PID Output Meter	1093
	Torque Prove	Trq Prove Cfg	1100	Trq Lmt SlewRate	1104	Brk Release Time	1107	Float Tolerance	1111
		Trq Prove Setup	1101	Speed Dev Band	1105	Brk Set Time	1108	MicroPsnScalePct	1112
		DI FloatMicroPsn	1102	SpdBand Intgrtr	1106	Brk Alarm Travel	1109	ZeroSpdFloatTime	1113
		Trq Prove Status	1103			Brk Slip Count	1110		
	Profiling	Profile Status	1210	DI Vel Override	1221	Step 1...16 Type	1230, 1240, 1250...	1380	
		Units Traveled	1212	DI StrtStep Sel0	1222	Step 1...16 Velocity	1231, 1241, 1251...	1381	
		Profile Command	1213	DI StrtStep Sel1	1223	Step 1...16 Accel	1232, 1242, 1252...	1382	
		Counts Per Unit	1215	DI StrtStep Sel2	1224	Step 1...16 Decel	1233, 1243, 1253...	1383	
		ProfVel Override	1216	DI StrtStep Sel3	1225	Step 1...16 Value	1234, 1244, 1254...	1384	
		Prof DI Invert	1217	DI StrtStep Sel4	1226	Step 1...16 Dwell	1235, 1245, 1255...	1385	
		DI Hold Step	1218			Step 1...16 Batch	1236, 1246, 1256...	1386	
		DI Abort Step	1219			Step 1...16 Next	1237, 1247, 1257...	1387	
		DI Abort Profile	1210			Step 1...16 Action	1238, 1248, 1258...	1388	
						Step 1...16 Dig In	1239, 1249, 1259...	1389	
	Camming	PCAM Control	1390	PCAM Span X	1396	PCAM Main Pt X 0...15	1407, 1409, 1411...	1437	
		PCAM Mode	1391	PCAM Scale X	1397	PCAM Main Pt Y 0...15	1408, 1410, 1412...	1438	
		PCAM Psn Select	1392	PCAM Span Y	1398	PCAM Aux EndPnt	1439		
		PCAM Psn Stpt	1393	PCAM ScaleY Sel	1399	PCAM Aux Types	1440		
		PCAM Psn Ofst	1394	PCAM ScaleYSetPt	1400	PCAM Aux Pt X 1...15	1441, 1443, 1445...	1469	
		PCAM PsnOfst Eps	1395	PCAM VelScaleSel	1401	PCAM Aux Pt Y 1...15	1442, 1444, 1446...	1470	
				PCAM VelScaleSP	1402	PCAM Status	1471		
				PCAM Slope Begin	1403	PCAM Vel Out	1472		
				PCAM Slope End	1404	PCAM Psn Out	1473		
				PCAM Main EndPnt	1405	DI PCAM Start	1474		
				PCAM Main Types	1406				

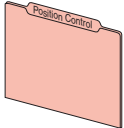
Expert Parameter View

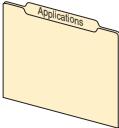
Parameter 301 [Access Level] set to option 2 “Expert.”

File	Group	Parameters							
Monitor 	Metering	Output Frequency	1	Torque Cur Fdbk	5	Output Power	9	Elapsed MWH	13
		Commanded SpdRef	2	Flux Cur Fdbk	6	Output Powr Fctr	10	Elapsed kWh	14
		Mtr Vel Fdbk	3	Output Current	7	DC Bus Volts	11	Elapsed Run Time	15
		Commanded Trq	4	Output Voltage	8	DC Bus Memory	12		
	Drive Data	Rated Volts	20	Rated Amps	21	Rated kW	22		
Motor Control 	Motor Data	Motor NP Volts	25	Motor NP Hertz	27	Mtr NP Pwr Units	29	Motor Poles	31
		Motor NP Amps	26	Motor NP RPM	28	Motor NP Power	30		
	Mtr Ctrl Options	Motor Ctrl Mode	35	Bus Utilization	42	Econ At Ref Ki	47	Stab Volt Gain	51
		Maximum Voltage	36	Flux Up Enable	43	Econ AccDec Ki	48	Stab Angle Gain	52
		Maximum Freq	37	Flux Up Time	44	Econ AccDec Kp	49		
		PWM Frequency	38	Flux Down Ki	45	Stability Filter	50		
		Mtr Options Cnfg	40	Flux Down Kp	46				
	Volts per Hertz	Start/Acc Boost	60	Break Voltage	62	SVC Boost Filter	64		
		Run Boost	61	Break Frequency	63	VHz Curve	65		
	Autotune	Autotune	70	Total Inertia	76	PM PriEnc Offset	81	PM IR Voltage	87
		Autotune Torque	71	Inertia Test Lmt	77	PM AltEnc Offset	82	PM IXq Voltage	88
		IR Voltage Drop	73	Encdriss AngComp	78	PM OfstTst Cur	83	PM IXd Voltage	89
		Ixo Voltage Drop	74	Encdriss VltComp	79	PM OfstTst CRamp	84	PM Vqs Reg Kp	91
		Flux Current Ref	75	PM Cfg	80	PM OfstTst FRamp	85	PM Vqs Reg Ki	92
						PM CEMF Voltage	86	PM Dir Test Cur	93
Feedback & IO 	Vector Regulator	VCL Cur Reg BW	95	Slip Reg Ki	101	Trq Adapt En	107	SFAdapt SlewLmt	113
		VCL Cur Reg Kp	96	Slip Reg Kp	102	Phase Delay Comp	108	SFAdapt SlewRate	114
		VCL Cur Reg Ki	97	Flux Reg Enable	103	Trq Comp Mode	109	SFAdapt CnvrgrLvl	115
		VEncdls FReg Kp	98	Flux Reg Ki	104	Trq Comp Mtring	110	SFAdapt CnvrgrLmt	116
		VEncdls FReg Ki	99	Flux Reg Kp	105	Trq Comp Regen	111		
		Slip Reg Enable	100	Trq Adapt Speed	106	Slip Adapt lqs	112		
	Feedback	Pri Vel Fdbk Sel	125	Alt Vel Feedback	130	Mtr Psn Fdbk Sel	135	Delayed Spd Ref	139
		Pri Vel FdbkFiltr	126	Active Vel Fdbk	131	Load Psn FdbkSel	136	Virtual EncDelay	140
		Pri Vel Feedback	127	Aux Vel Fdbk Sel	132	Open Loop Fdbk	137	Virtual Enc EPR	141
		Alt Vel Fdbk Sel	128	Aux Vel FdbkFiltr	133	Simulator Fdbk	138	Virtual Enc Psn	142
		Alt Vel FdbkFiltr	129	Aux Vel Feedback	134				
	Digin Functions	Digital In Conf	150	DI Jog 1	166	DI Accel 2	179	DI PID Reset	193
		DI Enable	155	DI Jog 1 Forward	167	DI Decel 2	180	DI PID Invert	194
		DI Clear Fault	156	DI Jog 1 Reverse	168	DI SpTqPs Sel 0	181	DI Torque StptA	195
		DI Aux Fault	157	DI Jog 2	169	DI SpTqPs Sel 1	182	DI Fwd End Limit	196
		DI Stop	158	DI Jog 2 Forward	170	DI Stop Mode B	185	DI Fwd Dec Limit	197
		DI Cur Lmt Stop	159	DI Jog 2 Reverse	171	DI BusReg Mode B	186	DI Rev End Limit	198
		DI Coast Stop	160	DI Manual Ctrl	172	DI PwrLoss ModeB	187	DI Rev Dec Limit	199
		DI Start	161	DI Speed Sel 0	173	DI Pwr Loss	188	DI PHdwr OvrTrvl	200
		DI Fwd Reverse	162	DI Speed Sel 1	174	DI Precharge	189	DI NHdwr OvrTrvl	201
		DI Run	163	DI Speed Sel 2	175	DI Prchrg Seal	190		
		DI Run Forward	164	DI MOP Inc	177	DI PID Enable	191		
		DI Run Reverse	165	DI MOP Dec	178	DI PID Hold	192		
	Control Board IO	Digital In Sts	220						

File	Group	Parameters							
Drive Cfg 	Preferences	Speed Units	300						
		Access Level	301						
		Language	302						
	Control Cfg	Voltage Class	305	SpdTrqPsn Mode A	309	Actv SpTqPs Mode	313	Prchrg Control	321
		Duty Rating	306	SpdTrqPsn Mode B	310	SLAT Err Stpt	314	Prchrg Delay	322
		Direction Mode	308	SpdTrqPsn Mode C	311	SLAT Dwell Time	315	Prchrg Err Cfg	323
				SpdTrqPsn Mode D	312			Logic Mask	324
	Auto Manual Ctrl	Auto Mask	325	Alt Man Ref Sel	328	Manual Preload	331		
		Manual Cmd Mask	326	Alt Man Ref AnHi	329				
		Manual Ref Mask	327	Alt Man Ref AnLo	330				
	Drive Memory	Reset Meters	336						
	Start Features	Start At PowerUp	345	Sleep Wake Mode	350	FlyingStart Mode	356	FS Excitation Ki	361
		PowerUp Delay	346	SleepWake RefSel	351	FS Gain	357	FS Excitation Kp	362
		Auto Retry Fault	347	Sleep Level	352	FS Ki	358	FS Reconnect Dly	363
		Auto Rstrt Tries	348	Sleep Time	353	FS Speed Reg Ki	359	FS Msrmnt CurLvl	364
		Auto Rstrt Delay	349	Wake Level	354	FS Speed Reg Kp	360		
				Wake Time	355				
	Braking Features	Stop Mode A	370	Bus Reg Ki	380	Flux Braking Ki	390	DC Brk Vq Fltr	398
		Stop Mode B	371	Bus Reg Kp	381	Flux Braking Kp	391	DC Brk Vd Fltr	399
		Bus Reg Mode A	372	DB Resistor Type	382	DC Brake Lvl Sel	393	Fast Braking Ki	400
		Bus Reg Mode B	373	DB Ext Ohms	383	DC Brake Level	394	Fast Braking Kp	401
		Bus Reg Lvl Cnfg	374	DB Ext Watts	384	DC Brake Time	395	Brake Off Adj 1	402
		Bus Reg Level	375	DB ExtPulseWatts	385	DC Brake Ki	396	Brake Off Adj 2	403
		Bus Limit Kp	376	Flux Braking En	388	DC Brake Kp	397	Dec Inhibit Actn	409
		Bus Limit Kd	377	Flux Braking Lmt	389				
		Bus Limit ACR Ki	378						
		Bus Limit ACR Kp	379						
Protection 	Motor Overload	Motor OL Actn	410	Mtr OL Factor	413	Mtr OL Reset Lvl	415	Mtr OL Counts	418
		Mtr OL at Pwr Up	411	Mtr OL Hertz	414	MtrOL Reset Time	416	Mtr OL Trip Time	419
		Mtr OL Alarm Lvl	412						
	Load Limits	Drive OL Mode	420	Motor Power Lmt	427	Shear Pin Cfg	434	Load Loss Action	441
		Current Lmt Sel	421	Current Limit Kd	428	Shear Pin 1 Actn	435	Load Loss Level	442
		Current Limit 1	422	Current Limit Ki	429	Shear Pin1 Level	436	Load Loss Time	443
		Current Limit 2	423	Current Limit Kp	430	Shear Pin 1 Time	437	OutPhaseLossActn	444
		Active Cur Lmt	424	Id Lo FreqCur Kp	431	Shear Pin 2 Actn	438	Out PhaseLossLvl	445
		Current Rate Lmt	425	Iq Lo FreqCur Kp	432	Shear Pin2 Level	439	Power Loss Actn	449
		Regen Power Lmt	426	Jerk Gain	433	Shear Pin 2 Time	440		
	Power Loss	Pwr Loss Mode A	450	Pwr Loss Mode B	453	PwrLoss RT BusKp	456	UnderVltg Action	460
		Pwr Loss A Level	451	Pwr Loss B Level	454	PwrLoss RT BusKd	457	UnderVltg Level	461
		Pwr Loss A Time	452	Pwr Loss B Time	455	PwrLoss RT ACRKp	458	InPhase LossActn	462
						PwrLoss RT ACRKi	459	InPhase Loss Lvl	463
							DC Bus Mem Reset	464	
	Ground Fault	Ground Warn Actn	466						
		Ground Warn Lvl	467						
	Predictive Maint	PredMaint Status	469	HSFan Derate	488	MtrBrngTotalLife	502	MchBrngTotalLife	511
		PredMaintAmbTemp	470	HSFan TotalLife	489	MtrBrngElpsdLife	503	MchBrngElpsdLife	512
		PredMaint Rst En	471	HSFan ElpsdLife	490	MtrBrngRemainLvl	504	MchBrngRemainLif	513
		PredMaint Reset	472	HSFan RemainLife	491	MtrBrngEventLvl	505	MchBrngEventLvl	514
				HSFan EventLevel	492	MtrBrngEventActn	506	MchBrngEventActn	515
		HSFan EventActn	493	MtrBrng ResetLog	507	MchBrngResetLog	516		
		HSFan ResetLog	494	MtrLubeElpsdHrs	508	MchLubeElpsdHrs	517		
		InFan Derate	495	MtrLubeEventLvl	509	MchLube EventLvl	518		
		InFan TotalLife	496	MtrLubeEventActn	510	MchLubeEventActn	519		
		InFan ElpsdLife	497						
		InFan RemainLife	498						
		InFan EventLevel	499						
		InFan EventActn	500						
InFan ResetLog		501							

File	Group	Parameters							
Speed Control 	Speed Limits	Max Fwd Speed	520	Min Fwd Speed	522	Overspeed Limit	524	Skip Speed 1	526
		Max Rev Speed	521	Min Rev Speed	523	Zero Speed Limit	525	Skip Speed 2	527
								Skip Speed 3	528
								Skip Speed Band	529
	Speed Ramp Rates	Accel Time 1	535	Decel Time 1	537	Jog Acc Dec Time	539	S Curve Accel	540
		Accel Time 2	536	Decel Time 2	538			S Curve Decel	541
	Speed Reference	Spd Ref A Sel	545	Spd Ref Scale	555	Preset Speed 1	571	Selected Spd Ref	592
		Spd Ref A Stpt	546	Jog Speed 1	556	Preset Speed 2	572	Limited Spd Ref	593
		Spd Ref A AnlgHi	547	Jog Speed 2	557	Preset Speed 3	573	Ramped Spd Ref	594
		Spd Ref A AnlgLo	548	MOP Reference	558	Preset Speed 4	574	Filtered Spd Ref	595
		Spd Ref A Mult	549	Save MOP Ref	559	Preset Speed 5	575	Speed Rate Ref	596
		Spd Ref B Sel	550	MOP Rate	560	Preset Speed 6	576	Final Speed Ref	597
		Spd Ref B Stpt	551	MOP High Limit	561	Preset Speed 7	577		
		Spd Ref B AnlgHi	552	MOP Low Limit	562	Spd Ref Filter	588		
		Spd Ref B AnlgLo	553	DI ManRef Sel	563	Spd Ref Fltr BW	589		
		Spd Ref B Mult	554	DI ManRef AnlgHi	564	Spd Ref FltrGain	590		
				DI ManRef AnlgLo	565	Spd Ref Sel Sts	591		
	Speed Trim	Trim Ref A Sel	600	Trim Ref B Sel	604	TrmPct RefA Sel	608	TrmPct RefB Sel	612
		Trim Ref A Stpt	601	Trim Ref B Stpt	605	TrmPct RefA Stpt	609	TrmPct RefB Stpt	613
		Trim RefA AnlgHi	602	Trim RefB AnlgHi	606	TrmPct RefA AnHi	610	TrmPct RefB AnHi	614
		Trim RefA AnlgLo	603	Trim RefB AnlgLo	607	TrmPct RefA AnLo	611	TrmPct RefB AnLo	615
								SpdTrimPrcRefSrc	616
								Spd Trim Source	617
	Slip/Droop Comp	Droop RPM @ FLA	620						
		Slip RPM @ FLA	621						
		Slip Comp BW	622						
		VHzSV SpdTrimReg	623						
	Speed Regulator	Spd Options Ctrl	635	Speed Reg Kp	645	SReg Trq Preset	652	VHzSV Spd Reg Kp	663
		Speed Reg BW	636	Speed Reg Max Kp	646	Spd Loop Damping	653	VHzSV Spd Reg Ki	664
		SReg FB Fltr Sel	637	Speed Reg Ki	647	Spd Reg Int Out	654		
		SReg FB FltrGain	638	Alt Speed Reg BW	648	Spd Reg Pos Lmt	655		
		SReg FB Fltr BW	639	Alt Speed Reg Kp	649	Spd Reg Neg Lmt	656		
		Filtered SpdFdbk	640	Alt Speed Reg Ki	650	SReg OutFltr Sel	657		
		Speed Error	641	AltSpdErr FltrBW	651	SReg OutFltrGain	658		
		Servo Lock Gain	642			SReg OutFltr BW	659		
		SpdReg AntiBckup	643			SReg Output	660		
		Spd Err Filt BW	644						
	Speed Comp	Speed Comp Sel	665						
		Speed Comp Gain	666						
		Speed Comp Out	667						
Torque Control 	Torque Limits	Pos Torque Limit	670						
		Neg Torque Limit	671						
	Torque Reference	Trq Ref A Sel	675	Trq Ref B Sel	680	Selected Trq Ref	685	Torque Step	686
		Trq Ref A Stpt	676	Trq Ref B Stpt	681			Notch Fltr Freq	687
		Trq Ref A AnlgHi	677	Trq Ref B AnlgHi	682			Notch Fltr Atten	688
		Trq Ref A AnlgLo	678	Trq Ref B AnlgLo	683			Filtered Trq Ref	689
		Trq Ref A Mult	679	Trq Ref B Mult	684			Limited Trq Ref	690
	Inertia Comp	Inertia CompMode	695	Inertia Acc Gain	696	Inert Comp LPFBW	698	Ext Ramped Ref	700
				Inertia Dec Gain	697	Inertia Comp Out	699	InAdp LdObs Mode	704
	Friction Comp	Inertia Adapt BW	705	Load Estimate	707	IA LdObs Delay	709	Load Observer BW	711
		InertiaAdaptGain	706	InertiaTrqAdd	708	InertAdptFltrBW	710		

File	Group	Parameters							
Position Control 	Position Cfg/Sts	PTP PsnRefStatus Position Control	720 721	Psn Selected Ref Psn Command	722 723	Psn Reg Status Zero Position	724 725	In Pos Psn Band In Pos Psn Dwell	726 727
	Position Homing	Homing Status Homing Control	730 731	DI Find Home DI Redefine Psn DI OL Home Limit	732 733 734	Find Home Speed Find Home Ramp	735 736	Actual Home Psn User Home Psn	737 738
	Position Watch	PsnWatch1 Select PsnWatch1 DctIn PsnWatch1 Stpt	745 746 747	PsnWatch2 Select PsnWatch2 DctIn PsnWatch2 Stpt	748 749 750				
	Direct	Psn Ref Select	765	Psn Direct Stpt Psn Direct Ref	766 767				
	Point to Point	PTP Control PTP Mode DI Indx Step DI Indx StepRev DI Indx StepPrst	770 771 772 773 774	PTP Ref Sel PTP Reference PTP Feedback PTP Ref Scale PTP Index Preset	775 776 777 778 779	PTP Setpoint PTP Accel Time PTP Decel Time PTP Speed FwdRef PTP Command	780 781 782 783 784	PTP Fwd Vel Lmt PTP Rev Vel Lmt PTP S Curve PTP Vel Override PTP Egr Mult PTP Egr Div	785 786 787 788 789 790
	Phase Lock Loop	PLL Control PLL Ext Spd Sel PLL Ext Spd Stpt PLL Ext SpdScale	795 796 797 798	PLL Psn Ref Sel PLL Psn Stpt PLL BW PLL LPFilter BW PLL Virt Enc RPM	799 800 801 802 803	PLL EPR Input PLL Rvls Input PLL Psn Out Fitr PLL Speed Out PLL Speed OutAdv	804 805 806 807 808	PLL Enc Out PLL Enc Out Adv PLL EPR Output PLL Rvls Output	809 810 811 812
	Electronic Gear	Psn Ref EGR Out	815	Psn EGR Mult Psn EGR Div	816 817				
	Position Offset	Psn Offset 1 Sel Psn Offset 1	820 821	Psn Offset 2 Sel Psn Offset 2	822 823	Psn Offset Vel	824		
	Ld Psn Fdbk Scal	LdPsn Fdbk Mult	825	LdPsn Fdbk Div	826				
	Position Reg	PsnNtchFitrFreq PsnNtchFitrDepth Psn Out Fitr Sel Psn Out FitrGain Psn Out Fitr BW	830 831 832 833 834	Psn Error Psn Actual Psn Load Actual Psn Reg Ki Psn Reg Kp	835 836 837 838 839	PReg Pos Int Lmt PReg Neg Int Lmt PsnReg IntrgrOut PsnReg Spd Out	840 841 842 843	PReg Pos Spd Lmt PReg Neg Spd Lmt Psn Reg Droop Psn Fdbk	844 845 846 847
Communication 	Comm Control	Port 1 Reference Port 2 Reference Port 3 Reference	871 872 873	Port 4 Reference Port 5 Reference Port 6 Reference	874 875 876	Port13 Reference Port14 Reference	877 878	Drive Logic Rslt Drive Ref Rslt Drive Ramp Rslt DPI Logic Rslt	879 880 881 882
	Security	Port Mask Act Logic Mask Act	885 886	Write Mask Act Write Mask Cfg	887 888				
	DPI Datalinks	Data In A1 Data In A2 Data In B1 Data In B2	895 896 897 898	Data In C1 Data In C2 Data In D1 Data In D2	899 900 901 902	Data Out A1 Data Out A2 Data Out B1 Data Out B2	905 906 907 908	Data Out C1 Data Out C2 Data Out D1 Data Out D2	909 910 911 912
	Owners	Stop Owner Start Owner	919 920	Jog Owner Dir Owner	921 922	Clear Flt Owner Manual Owner	923 924	Ref Select Owner	925
Diagnostics 	Status	Speed Ref Source Last StartSource Last Stop Source Start Inhibits Last StrtInhibit	930 931 932 933 934	Drive Status 1 Drive Status 2 Condition Sts 1 Drive OL Count	935 936 937 940	IGBT Temp Pct IGBT Temp C Drive Temp Pct Drive Temp C	941 942 943 944	At Limit Status Safety Port STS	945 946
	Fault/Alarm Info	Minor Flt Cfg Last Fault Code Fault Status A Fault Status B	950 951 952 953	Status1 at Fault Status2 at Fault Fault Frequency Fault Amps Fault Bus Volts	954 955 956 957 958	Alarm Status A Alarm Status B Type 2 Alarms	959 960 961	AlarmA at Fault AlarmB at Fault	962 963
	Testpoints	Testpoint Sel 1 Testpoint Fval 1 Testpoint Lval 1	970 971 972	Testpoint Sel 2 Testpoint Fval 2 Testpoint Lval 2	974 975 976	Testpoint Sel 3 Testpoint Fval 3 Testpoint Lval 3	978 979 980	Testpoint Sel 4 Testpoint Fval 4 Testpoint Lval 4	982 983 984
	Peak Detection	PkDctt Stpt Real PkDctt Stpt Dint PkDctt1 In Sel	1035 1036 1037	PkDctt1PresetSel Peak1 Cfg Peak 1 Change	1038 1039 1040	PeakDetect1 Out PkDctt2 In Sel PkDctt2PresetSel	1041 1042 1043	Peak2 Cfg Peak 2 Change PeakDetect2 Out	1044 1045 1046

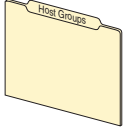
File	Group	Parameters							
Applications 	Process PID	PID Cfg	1065	PID Fdbk Sel	1072	PID Output Sel	1079	PID Prop Gain	1086
		PID Control	1066	PID Fdbk AnlgHi	1073	PID Output Mult	1080	PID Int Time	1087
		PID Ref Sel	1067	PID Fdbk AnlgLo	1074	PID Upper Limit	1081	PID Deriv Time	1088
		PID Ref AnlgHi	1068	PID FBloss SpSel	1075	PID Lower Limit	1082	PID Status	1089
		PID Ref AnlgLo	1069	PID FBloss TqSel	1076	PID Deadband	1083	PID Ref Meter	1090
		PID Setpoint	1070	PID Fdbk	1077	PID LP Filter BW	1084	PID Fdbk Meter	1091
		PID Ref Mult	1071	PID Fdbk Mult	1078	PID Preload	1085	PID Error Meter	1092
								PID Output Meter	1093
	Torque Prove	Trq Prove Cfg	1100	Trq Lmt SlewRate	1104	Brk Release Time	1107	Float Tolerance	1111
		Trq Prove Setup	1101	Speed Dev Band	1105	Brk Set Time	1108	MicroPsnScalePct	1112
		DI FloatMicroPsn	1102	SpdBand Intgrtr	1106	Brk Alarm Travel	1109	ZeroSpdFloatTime	1113
		Trq Prove Status	1103			Brk Slip Count	1110		
	Profiling	Profile Status	1210	DI Vel Override	1221	Step 1...16 Type	1230, 1240, 1250...	1380	
		Units Traveled	1212	DI StrtStep Sel0	1222	Step 1...16 Velocity	1231, 1241, 1251...	1381	
		Profile Command	1213	DI StrtStep Sel1	1223	Step 1...16 Accel	1232, 1242, 1252...	1382	
		Counts Per Unit	1215	DI StrtStep Sel2	1224	Step 1...16 Decel	1233, 1243, 1253...	1383	
		ProfVel Override	1216	DI StrtStep Sel3	1225	Step 1...16 Value	1234, 1244, 1254...	1384	
		Prof DI Invert	1217	DI StrtStep Sel4	1226	Step 1...16 Dwell	1235, 1245, 1255...	1385	
		DI Hold Step	1218			Step 1...16 Batch	1236, 1246, 1256...	1386	
		DI Abort Step	1219			Step 1...16 Next	1237, 1247, 1257...	1387	
		DI Abort Profile	1210			Step 1...16 Action	1238, 1248, 1258...	1388	
						Step 1...16 Dig In	1239, 1249, 1259...	1389	
	Camming	PCAM Control	1390	PCAM Span X	1396	PCAM Main Pt X 0...15	1407, 1409, 1411...	1437	
		PCAM Mode	1391	PCAM Scale X	1397	PCAM Main Pt Y 0...15	1408, 1410, 1412...	1438	
		PCAM Psn Select	1392	PCAM Span Y	1398	PCAM Aux EndPnt	1439		
		PCAM Psn Stpt	1393	PCAM ScaleY Sel	1399	PCAM Aux Types	1440		
		PCAM Psn Ofst	1394	PCAM ScaleYSetPt	1400	PCAM Aux Pt X 1...15	1441, 1443, 1445...	1469	
		PCAM PsnOfst Eps	1395	PCAM VelScaleSel	1401	PCAM Aux Pt Y 1...15	1442, 1444, 1446...	1470	
				PCAM VelScaleSP	1402	PCAM Status	1471		
				PCAM Slope Begin	1403	PCAM Vel Out	1472		
				PCAM Slope End	1404	PCAM Psn Out	1473		
				PCAM Main EndPnt	1405	DI PCAM Start	1474		
				PCAM Main Types	1406				

How Option Module Parameters are Organized

Option module parameters are only available when that option is installed in a host drive. To view and edit option module parameters, select the port number of the device you want to access. See [Select A Device on page D-5](#) for instructions.

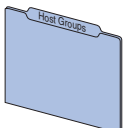
I/O Modules

Parameter descriptions begin on [page 3-120](#).

File	Group	Parameters							
Host Groups 	Digital Inputs	Dig In Sts	1	Dig In Filt Mask	2	Dig In Filt	3		
	Digital Outputs	Dig Out Sts	5	RO0 Sel	10	RO1 Sel	20	TO1 Sel	30
		Dig Out Invert	6	RO0 Level Sel	11	TO0 Sel	20	TO1 Level Sel	31
		Dig Out Setpoint	7	RO0 Level	12	RO1 Level Sel	21	TO1 Level	32
				RO0 Level CmpSts	13	RO1 Level	22	TO1 Level CmpSts	33
				RO0 On Time	14	RO1 Level CmpSts	23	TO1 On Time	34
				RO0 Off Time	15	RO1 On Time	24	TO1 Off Time	35
						RO1 Off Time	25		
	Motor PTC	PTC Cfg	40	PTC Sts	41	PTC Raw Value	42		
	Analog Inputs	Anlg In Type	45	Anlg In0 Value	50	Anlg In1 Value	60		
		Anlg In Sqrt	46	Anlg In0 Hi	51	Anlg In1 Hi	61		
		Anlg In Loss Sts	47	Anlg In0 Lo	52	Anlg In1 Lo	62		
				Anlg In0 LssActn	53	Anlg In1 LssActn	63		
				Anlg In0 Raw Val	54	Anlg In1 Raw Val	64		
				Anlg In0 Filt Gn	55	Anlg In1 Filt Gn	65		
				Anlg In0 Filt BW	56	Anlg In1 Filt BW	66		
	Analog Outpts	Anlg Out Type	70	Anlg Out0 Sel	75	Anlg Out1 Sel	85		
		Anlg Out Abs	71	Anlg Out0 Stpt	76	Anlg Out1 Stpt	86		
				Anlg Out0 Data	77	Anlg Out1 Data	87		
				Anlg Out0 DataHi	78	Anlg Out1 DataHi	88		
				Anlg Out0 DataLo	79	Anlg Out1 DataLo	89		
				Anlg Out0 Hi	80	Anlg Out1 Hi	90		
				Anlg Out0 Lo	81	Anlg Out1 Lo	91		
				Anlg Out0 Val	82	Anlg Out1 Val	92		
	Predictive Main	PredMaint Sts	99	RO0 Load Type	100	RO1 Load Type	110		
				RO0 Load Amps	101	RO1 Load Amps	111		
				RO0 TotalLife	102	RO1 TotalLife	112		
				RO0 ElapsedLife	103	RO1 ElapsedLife	113		
				RO0 RemainLife	104	RO1 RemainLife	114		
				RO0 LifeEvntLvl	105	RO1 LifeEvntLvl	115		
				RO0 LifeEvntActn	106	RO1 LifeEvntActn	116		

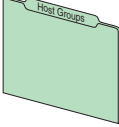
Single Incremental Encoder Module

Parameter descriptions begin on [page 3-131](#).

File	Group	Parameters							
Host Groups 	N/A	Encoder Cfg	1	Fdbk Loss Cfg	3	Encoder Status	5	Phase Loss Count	7
		Encoder PPR	2	Encoder Feedback	4	Error Status	6	Quad Loss Count	8

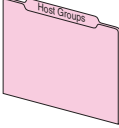
Safe Speed Monitor Module

Parameter descriptions begin on [page 3-133](#).

File	Group	Parameters							
Host Groups	N/A								
		Password	1	Fbk Mode	27	Direction Mon	42	DM Input	58
		Lock State	5	Fbk 1 Type	28	Direction Tol	43	Lock Mon Enable	59
		Operating Mode	6	Fbk 1 Units	29	Safe Stop Input	44	Lock Mon Input	60
		Reset Defaults	7	Fbk 1 Polarity	30	Safe Stop Type	45	Max Speed Enable	61
		Signature ID	10	Fbk 1 Resolution	31	Stop Mon Delay	46	Safe Max Speed	62
		New Password	13	Fbk 1 Volt Mon	32	Max Stop Time	47	Max Spd Stop Typ	63
		Password Command	17	Fbk 1 Speed	33	Standstill Speed	48	Max Accel Enable	64
		Security Code	18	Fbk 2 Units	34	Standstill Pos	49	Safe Accel Limit	65
		Vendor Password	19	Fbk 2 Polarity	35	Decel Ref Speed	50	Max Acc Stop Typ	66
		Cascaded Config	20	Fbk 2 Resolution	36	Stop Decel Tol	51	Fault Status	67
		Safety Mode	21	Fbk 2 Volt Mon	37	Lim Speed Input	52	Guard Status	68
		Reset Type	22	Fbk 2 Speed	38	LimSpd Mon Delay	53	IO Diag Status	69
		OverSpd Response	24	Fbk Speed Ratio	39	Enable SW Input	54	Config Flt Code	70
				Fbk Speed Tol	40	Safe Speed Limit	55	SS Out Mode	72
				Fbk Pos Tol	41	Speed Hysteresis	56	SLS Out Mode	73
						Door Out Type	57	Door Out Mode	74

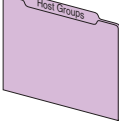
Dual Incremental Encoder Module

Parameter descriptions begin on [page 3-133](#).

File	Group	Parameters							
Host Groups	Encoder 0								
		Encoder 0 Cfg	1	Enc0 FdbkLss Cfg	3	Encoder 0 Status	5	Enc0 PhsLss Cnt	7
		Encoder 0 PPR	2	Encoder 0 Feedback	4	Enc0 Error Sts	6	Enc0 QuadLss Cnt	8
	Encoder 1	Encoder 1 Cfg	11	Enc1 FdbkLss Cfg	13	Encoder 1 Status	15	Enc1 PhsLss Cnt	17
		Encoder 1 PPR	12	Encoder 1 Feedback	14	Enc1 Error Sts	16	Enc1 QuadLss Cnt	18
	Homing Cfg	Homing Cfg	20						
	Module Status	Module Status	21						

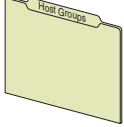
Universal Feedback Module

Parameter descriptions begin on [page 3-147](#).

File	Group	Parameters							
Host Groups	Module								
		Module Sts	1						
		Module Err Reset	2						
	Feedback 0	FB0 Position	5	FB0 Cfg	8	FB0 Inc Cfg	16	FB0 SSI Turns	22
		FB0 Device Sel	6	FB0 Loss Cfg	9	FB0 Inc Sts	17	FB0 Lin CPR	25
		FB0 Identify	7	FB0 Sts	10	FB0 SSI Cfg	20	FB0 Lin Upd Rate	26
				FB0 IncAndSC PPR	15	FB0 SSI Resol	21	Fdbk0 LinStahl Sts	27
	Feedback 1	FB1 Position	35	FB1 Cfg	38	FB1 Inc Cfg	46	FB1 SSI Turns	52
		FB1 Device Sel	36	FB1 Loss Cfg	39	FB1 Inc Sts	47	FB1 Lin CPR	55
		FB1 Identify	37	FB1 Sts	40	FB1 SSI Cfg	50	FB1 Lin Upd Rate	56
				FB1 IncAndSC PPR	45	FB1 SSI Resol	51	Fdbk1 LinStahl Sts	57
	Encoder Out	Enc Out Sel	80	Enc Out FD PPR	82	Enc Out Z Offset	83		
		Enc Out Mode	81			Enc Out Z PPR	84		
	Registration	Rgsn Arm	90	Rgsn Latch1 Cfg	100	Rgsn Latch1 Psn	101	Rgsn Latch1 Time	102
		Rgsn In 0 Filter	91	Rgsn Latch2 Cfg	103	Rgsn Latch2 Psn	104	Rgsn Latch2 Time	105
		Rgsn In 1 Filter	92	Rgsn Latch3 Cfg	106	Rgsn Latch3 Psn	107	Rgsn Latch3 Time	108
		Rgsn Hmln Filter	93	Rgsn Latch4 Cfg	109	Rgsn Latch4 Psn	110	Rgsn Latch4 Time	111
				Rgsn Latch5 Cfg	112	Rgsn Latch5 Psn	113	Rgsn Latch5 Time	114
		Rgsn Sts	94	Rgsn Latch6 Cfg	115	Rgsn Latch6 Psn	116	Rgsn Latch6 Time	117
				Rgsn Latch7 Cfg	118	Rgsn Latch7 Psn	119	Rgsn Latch7 Time	120
				Rgsn Latch8 Cfg	121	Rgsn Latch8 Psn	122	Rgsn Latch8 Time	123
				Rgsn Latch9 Cfg	124	Rgsn Latch9 Psn	125	Rgsn Latch9 Time	126
				Rgsn Latch10 Cfg	127	Rgsn Latch10 Psn	128	Rgsn Latch10 Time	129

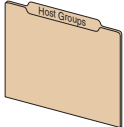
Embedded EtherNet/IP

Parameter descriptions begin on [page 3-159](#).

File	Group	Parameters							
Host Groups 	N/A	DL From Net 01	1	Port Number	33	Flt Cfg DL 01	60	DLs Fr Peer Cfg	76
		DL From Net 02	2	DLs From Net Act	34	Flt Cfg DL 02	61	DLs Fr Peer Act	77
		DL From Net 03	3	DLs To Net Act	35	Flt Cfg DL 03	62	Logic Src Cfg	78
		DL From Net 04	4	BOOTP	36	Flt Cfg DL 04	63	Ref Src Cfg	79
		DL From Net 05	5	Net Addr Src	37	Flt Cfg DL 05	64	Fr Peer Timeout	80
		DL From Net 06	6	IP Addr Cfg 1	38	Flt Cfg DL 06	65	Fr Peer Addr 1	81
		DL From Net 07	7	IP Addr Cfg 2	39	Flt Cfg DL 07	66	Fr Peer Addr 2	82
		DL From Net 08	8	IP Addr Cfg 3	40	Flt Cfg DL 08	67	Fr Peer Addr 3	83
		DL From Net 09	9	IP Addr Cfg 4	41	Flt Cfg DL 09	68	Fr Peer Addr 4	84
		DL From Net 10	10	Subnet Cfg 1	42	Flt Cfg DL 10	69	Fr Peer Enable	85
		DL From Net 11	11	Subnet Cfg 2	43	Flt Cfg DL 11	70	Fr Peer Status	86
		DL From Net 12	12	Subnet Cfg 3	44	Flt Cfg DL 12	71	DLs To Peer Cfg	87
		DL From Net 13	13	Subnet Cfg 4	45	Flt Cfg DL 13	72	DLs To Peer Act	88
		DL From Net 14	14	Gateway Cfg 1	46	Flt Cfg DL 14	73	To Peer Period	89
		DL From Net 15	15	Gateway Cfg 2	47	Flt Cfg DL 15	74	To Peer Skip	90
		DL From Net 16	16	Gateway Cfg 3	48	Flt Cfg DL 16	75	To Peer Enable	91
		DL To Net 01	17	Gateway Cfg 4	49				
		DL To Net 02	18	Net Rate Cfg	50				
		DL To Net 03	19	Net Rate Act	51				
		DL To Net 04	20	Web Enable	52				
		DL To Net 05	21	Web Features	53				
		DL To Net 06	22	Comm Flt Action	54				
		DL To Net 07	23	Idle Flt Action	55				
		DL To Net 08	24	Peer Flt Action	56				
		DL To Net 09	25	Msg Flt Action	57				
		DL To Net 10	26	Flt Cfg Logic	58				
		DL To Net 11	27	Flt Cfg Ref	59				
		DL To Net 12	28						
		DL To Net 13	29						
		DL To Net 14	30						
		DL To Net 15	31						
		DL To Net 16	32						

Embedded DeviceLogix

Parameter descriptions begin on [page G-2](#).

File	Group	Parameters							
Host Groups 	Analog Outputs	DLX Out 01	1	DLX Out 05	5	DLX Out 09	9	DLX Out 13	13
		DLX Out 02	2	DLX Out 06	6	DLX Out 10	10	DLX Out 14	14
		DLX Out 03	3	DLX Out 07	7	DLX Out 11	11	DLX Out 15	15
		DLX Out 04	4	DLX Out 08	8	DLX Out 12	12	DLX Out 16	16
	Analog Inputs	DLX In 01	17	DLX In 05	21	DLX In 09	25	DLX In 13	29
		DLX In 02	18	DLX In 06	22	DLX In 10	26	DLX In 14	30
		DLX In 03	19	DLX In 07	23	DLX In 11	27	DLX In 15	31
		DLX In 04	20	DLX In 08	24	DLX In 12	28	DLX In 16	32
	Digital Inputs	DLX DIP 01	33	DLX DIP 05	37	DLX DIP 09	41	DLX DIP 13	45
		DLX DIP 02	34	DLX DIP 06	38	DLX DIP 10	42	DLX DIP 14	46
		DLX DIP 03	35	DLX DIP 07	39	DLX DIP 11	43	DLX DIP 15	47
		DLX DIP 04	36	DLX DIP 08	40	DLX DIP 12	44	DLX DIP 16	48
	Status & Cntl	DLX DigIn Sts	49	DLX DigOut Sts	50	DLX Prog Cond	52	DLX Operation	53
				DLX DigOut Sts2	51				
	Internal Regs	DLX Real SP1	54	DLX DDINT SP1	70	DLX Bool SP1	78		
		DLX Real SP2	55	DLX DDINT SP2	71	DLX Bool SP2	79		
		DLX Real SP3	56	DLX DDINT SP3	72	DLX Bool SP3	80		
		DLX Real SP4	57	DLX DDINT SP4	73	DLX Bool SP4	81		
		DLX Real SP5	58	DLX DDINT SP5	74				
		DLX Real SP6	59	DLX DDINT SP6	75				
		DLX Real SP7	60	DLX DDINT SP7	76				
		DLX Real SP8	61	DLX DDINT SP8	77				
		DLX Real SP9	62						
		DLX Real SP10	63						
		DLX Real SP11	64						
		DLX Real SP12	65						
		DLX Real SP13	66						
		DLX Real SP14	67						
		DLX Real SP15	68						
		DLX Real SP16	69						

Drive Monitor File

File	Group	No.	Name Description	Values	Read-Write	Data Type
MONITOR	Metering	1	Output Frequency Output Frequency Output frequency present at terminals T1, T2, and T3 (U, V & W)	Units: Hz Default: 0.00 Min/Max: -/+650.00	RO	Real
		2	Commanded SpdRef Commanded Speed Reference Value of the active Speed/Frequency Reference. Displayed in Hz or RPM, depending on the value of P300 [Speed Units].	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RO	Real
		3	Mtr Vel Fdbk Motor Velocity Feedback Estimated or actual motor speed, with feedback. Displayed in Hz or RPM, depending on the value of P300 [Speed Units].	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RO	Real
		4	Commanded Trq Commanded Torque Final torque reference value after limits and filtering are applied. Percent of motor rated torque.	Units: % Default: 0.00 Min/Max: -/+800.00	RO	Real
		5	Torque Cur Fdbk Torque Current Feedback Based on the motor, the amount of current that is in phase with the fundamental voltage component.	Units: Amps Default: Based on Drive Rating Min/Max: -/+P21 [Rated Amps] x 2	RO	Real
		6	Flux Cur Fdbk Flux Current Feedback Amount of current that is out of phase with the fundamental voltage component.	Units: Amps Default: Based on Drive Rating Min/Max: -/+P21 [Rated Amps] x 2	RO	Real
		7	Output Current Output Current The total output current present at terminals T1, T2, and T3 (U, V & W).	Units: Amps Default: Based on Drive Rating Min/Max: 0.00 / P21 [Rated Amps] x 2	RO	Real
		8	Output Voltage Output Voltage Output voltage present at terminals T1, T2, and T3 (U, V & W).	Units: VAC Default: Based on Drive Rating Min/Max: 0.00 / P20 [Rated Volts] x 1.15	RO	Real
		9	Output Power Output Power Output power present at terminals T1, T2, and T3 (U, V & W).	Units: kW Default: 0.00 Min/Max: 0.00/100.00	RO	Real
		10	Output Powr Fctr Output Power Factor Output power factor.	Default: 0.00 Min/Max: 0.00/1.00	RO	Real
		11	DC Bus Volts Direct Current Bus Volts DC bus voltage.	Units: VDC Default: Based on Drive Rating Min/Max: 0.00 / P20 [Rated Volts] x 2	RO	Real
		12	DC Bus Memory Direct Current Bus Memory A six minute average of P11 [DC Bus Volts] used to estimate the DC equivalent of the input voltage. Automatically initialized upon power-up, continually updated during normal operation, and is used to trigger a power loss condition.	Units: VDC Default: Based on Drive Rating Min/Max: 0.00 / P20 [Rated Volts] x 2	RO	Real
		13	Elapsed MWH Elapsed Megawatt Hour Accumulated output energy of the drive.	Units: MWh Default: 0.000 Min/Max: 0.000 / 4294967295.000	RO	Real
		14	Elapsed kWh Elapsed Kilowatt Hour Accumulated output energy of the drive.	Units: kWh Default: 0.000 Min/Max: 0.000 / 4294967295.000	RO	Real
		15	Elapsed Run Time Elapsed Run Time Accumulated time drive is outputting power.	Units: Hrs Default: 0.000 Min/Max: 0.000 / 220000000.000	RO	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
MONITOR	Drive Data	20	Rated Volts Rated Voltage Input voltage class (208, 240, 400 etc.) of the drive.	Units: VAC Default: Based on Drive Rating Min/Max: 0.00 / 690.00	RO	Real
		21	Rated Amps Rated Amperage Continuous current rating of drive.	Units: Amps Default: Based on Drive Rating Min/Max: 0.00 / 500.00	RO	Real
		22	Rated kW Rated Kilowatts Continuous power rating of drive.	Units: kW Default: Based on Drive Rating Min/Max: 0.00 / 400.00	RO	Real

Drive Motor Control File

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Motor Data	25	Motor NP Volts  Motor Nameplate Volts Rated volts shown on the motor nameplate.	Units: VAC Default: P20 [Rated Volts] x 0.3913 Min/Max: 0.10 / P20 [Rated Volts] (P305 = 0) 0.10 / 1.5 x P20 [Rated Volts] (P305 = 1)	RW	Real
		26	Motor NP Amps  Motor Nameplate Amps Rated full load amps shown on the motor nameplate.	Units: Amps Default: Based on Drive Rating Min/Max: 0.01 / 3200.00	RW	Real
		27	Motor NP Hertz  Motor Nameplate Hertz Rated frequency shown on the motor nameplate.	Units: Hz Default: Based on Drive Rating Min/Max: 2.00 / 650.00	RW	Real
		28	Motor NP RPM  Motor Nameplate Revolutions Per Minute Rated RPM shown on the motor nameplate.	Units: RPM Default: Based on Drive Rating Min/Max: 1.0 / 40000.0	RW	Real
		29	Mtr NP Pwr Units  Motor Nameplate Power Units Power units shown on the motor nameplate.	Default: Based on Drive Rating Options: 0 = "HP" 1 = "kW"	RW	32-bit Integer
		30	Motor NP Power  Motor Nameplate Power Rated power shown on the motor nameplate.	Units: HP Default: Based on Drive Rating Min/Max: 0.01 / 2000.00	RW	32-bit Integer
		31	Motor Poles  Motor Poles Number of poles in the motor.	Units: Pole Default: 4 Min/Max: 2 / 100	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Mtr Ctrl Options	35	Motor Ctrl Mode  Motor Control Mode Motor type and motor control mode.	Default: 1 = "Induction SV" Options: 0 = "InductionVHz" 1 = "Induction SV" 2 = "Induct Econ" 3 = "Induction FV" 4 = "PM VHz" 5 = "PM SV" 6 = "PM FV" 7 = "SyncRel VHz" 8 = "SyncRel SV"		

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
MOTOR CONTROL	Mtr Ctrl Options	36	Maximum Voltage Maximum Voltage The highest voltage the drive will output.	Units: VAC Default: Based on Drive Rating Min/Max: Based on Drive Rating	RW	Real																																																		
		37	 Maximum Freq Maximum Frequency The highest frequency the drive will output.	Units: Hz Default: P27 [Motor NP Hertz] x 2 + 10 Hz Min/Max: P27 [Motor NP Hertz] + 10 Hz / 420.00	RW	Real																																																		
		38	 PWM Frequency Pulse Width Modulation Frequency Pulse Width Modulated frequency (power transistor switching frequency). Drive derating may occur with increased values. See the PowerFlex 750 Series Reference Manual.	Units: kHz Default: Based on Drive Rating Min/Max: Based on Drive Rating	RW	Real																																																		
		40	Mtr Options Cnfg Motor Options Configuration Configuration of motor control related functions. Options <table><tr><td></td><td>Jerk Select</td><td>Id Comp</td><td>Reserved</td><td>Xsistor Diag</td><td>Elect Stab</td><td>DB WhileStop</td><td>PWM FreqLock</td><td>AsyncPWMLock</td><td>PWM Type Sel</td><td>RS Adaption</td><td>Reflect Wave</td><td>Mtr Lead Rev</td><td>EndIsTrqProv</td><td>Trq ModeJog</td><td>Trq ModeStop</td><td>Zero TrqStop</td></tr><tr><td>Default</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True		Jerk Select	Id Comp	Reserved	Xsistor Diag	Elect Stab	DB WhileStop	PWM FreqLock	AsyncPWMLock	PWM Type Sel	RS Adaption	Reflect Wave	Mtr Lead Rev	EndIsTrqProv	Trq ModeJog	Trq ModeStop	Zero TrqStop	Default	1	0	0	1	1	0	0	0	1	1	1	0	0	1	1	1	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
			Jerk Select	Id Comp	Reserved	Xsistor Diag	Elect Stab	DB WhileStop	PWM FreqLock	AsyncPWMLock	PWM Type Sel	RS Adaption	Reflect Wave	Mtr Lead Rev	EndIsTrqProv	Trq ModeJog	Trq ModeStop	Zero TrqStop																																						
		Default	1	0	0	1	1	0	0	0	1	1	1	0	0	1	1	1																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		42	Bus Utilization Bus Utilization The maximum allowed bus voltage utilization for the Motor Control. Do not change this value without consulting Technical Support. Higher values may result in control instability or over-current faults.	Units: % Default: 95.00 Min/Max: 85.00 / 100.00	RW	Real																																																		
		43	Flux Up Enable Flux Up Enable “Manual” (0) – Flux is established for P44 [Flux Up Time] before acceleration. “Automatic” (1) – Flux is established for a calculated time period based on motor nameplate data before acceleration. P44 [Flux Up Time] is not used.	Default: 1 = “Automatic” Options: 0 = “Manual” 1 = “Automatic”	RW	Real																																																		
		44	Flux Up Time Flux Up Time The amount of time the drive will use to try to achieve full motor stator flux. When a Start command is issued, DC current at P26 [Motor NP Amps] level is used to build stator flux before accelerating.	Units: Secs Default: 0.0000 Min/Max: 0.0000 / 5.0000	RW	Real																																																		
45	Flux Down Ki Flux Down Ki The integral term used in the voltage regulator which controls the removal of flux in the motor.	Default: 0.20 Min/Max: 0.00 / 100.00	RW	Real																																																				
46	Flux Down Kp Flux Down Kp The proportional term used in the voltage regulator which controls the removal of flux in the motor.	Default: 150.0 Min/Max: 0.0 / 10000.0	RW	Real																																																				
47	Econ At Ref Ki Economize At Reference Ki Integral gain that determines the response of the output voltage when P35 [Motor Ctrl Mode] option 2 “Induct Econ” is selected and the output frequency is at its reference.	Default: 305.0 Min/Max: 0.0 / 100000.0	RW	Real																																																				
48	Econ AccDec Ki Economize Acceleration/Deceleration Ki Integral gain that determines the response of the output voltage when P35 [Motor Ctrl Mode] option 2 “Induct Econ” is selected and the output frequency is either accelerating or decelerating to a reference.	Default: 200.0 Min/Max: 0.0 / 100000.0	RW	Real																																																				

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Mtr Ctrl Options	49	Econ AccDec Kp Economize Acceleration/Deceleration Kp Proportional gain that determines the response of the output voltage when P35 [Motor Ctrl Mode] option 2 "Induct Econ" is selected and the output frequency is either accelerating or decelerating to a reference.	Units: V/A Default: 100.0 Min/Max: 0.0 / 1000000.0	RW	Real
		50	Stability Filter Stability Filter The filter time constant for the angle and voltage stability control.	Units: Secs Default: 5162.22 Min/Max: 0.00 / 1000000.00	RW	Real
		51	Stab Volt Gain Stability Voltage Gain The gain of the voltage stability control function. Not active when any FV motor control mode is selected with speed feedback.	Default: 5322.22 Min/Max: 0.00 / 10000000.00	RW	Real
		52	Stab Angle Gain Stability Angle Gain The gain of the electrical angle stability control function. Not active when any FV motor control mode is selected in P35 [Motor Ctrl Mode] with speed feedback.	Default: 790.43 Min/Max: 0.00 / 10000000.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Volts per Hertz	60	Start/Acc Boost Start/Acceleration Boost The voltage boost level for starting and acceleration when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: VAC Default: Based on Drive Rating Min/Max: 0.00 / Based on Drive Rating	RW	Real
		61	Run Boost Run Boost The boost level for steady state and deceleration when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: VAC Default: Based on Drive Rating Min/Max: 0.00 / Based on Drive Rating	RW	Real
		62	Break Voltage Break Voltage The voltage the drive will output at P63 [Break Frequency] when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: VAC Default: Based on Drive Rating Min/Max: 0.00 / P25 [Motor NP Volts] x 1.5	RW	Real
		63	Break Frequency Break Frequency The frequency the drive will output at P62 [Break Voltage] when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: Hz Default: P27 [Motor NP Hertz] x 0.25 Min/Max: 0.00 / P27 [Motor NP Hertz]	RW	Real
		64	SVC Boost Filter SVC Boost Filter The voltage boost filter time constant when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode].	Units: Secs Default: 0.1000 Min/Max: 0.0001 / 1000.0000	RW	Real
		65	VHz Curve VHz Curve  Selects either a predefined curve (e.g. Fan/Pump), or a custom curve when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Default: 0 = "Custom V/Hz" Options: 0 = "Custom V/Hz" 1 = "Fan/Pump"	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Autotune	70	Autotune  Autotune Provides a manual or automatic method for setting P73 [IR Voltage Drop], P74 [Ixo Voltage Drop] and P75 [Flux Current Ref]. Valid only when parameter P35 [Motor Ctrl Mode] is set to 1 "Induction SV", 2 "Induct Econ", or 3 "Induction FV". "Ready" (0) – Parameter returns to this setting following a "Static Tune" or "Rotate Tune", at which time another start transition is required to operate the drive in normal mode. It also permits manually setting P73 [IR Voltage Drop], P74 [Ixo Voltage Drop] and P75 [Flux Current Ref]. "Calculate" (1) – Uses motor nameplate data to automatically set P73 [IR Voltage Drop], P74 [Ixo Voltage Drop], P75 [Flux Current Ref] and P621 [Slip RPM @ FLA]. "Static Tune" (2) – A temporary command that initiates a non-rotational motor stator resistance test for the best possible automatic setting of P73 [IR Voltage Drop] in all valid modes and a non-rotational motor leakage inductance test for the best possible automatic setting of P74 [Ixo Voltage Drop] in "FVC Vector" mode. A start command is required following initiation of this setting. Used when motor cannot be rotated. "Rotate Tune" (3) – A temporary command that initiates a "Static Tune" followed by a rotational test for the best possible automatic setting of P75 [Flux Current Ref]. In "FVC Vector" mode, with encoder feedback, a test for the best possible automatic setting of P621 [Slip RPM @ FLA] is also run. A start command is required following initiation of this setting. Important: If using rotate tune for "Sensrls Vect" mode, the motor should be uncoupled from the load or results may not be valid. With "FVC Vector," either a coupled or uncoupled load will produce valid results.  ATTENTION: Rotation of the motor in an undesired direction can occur during this procedure. To guard against possible injury and/or equipment damage, it is recommended that the motor be disconnected from the load before proceeding. "Inertia Tune" (4) – A temporary command that initiates an inertia test of the motor/load combination. The motor will ramp up and down, while the drive measures the amount of inertia.	Default: 1 = "Calculate" Options: 0 = "Ready" 1 = "Calculate" 2 = "Static Tune" 3 = "Rotate Tune" 4 = "Inertia Tune"	RW	32-bit Integer
		71	Autotune Torque  Autotune Torque The motor torque applied to the motor during the flux current and inertia tests.	Units: % Default: 50.00 Min/Max: 0.00 / 200.00	RW	Real
		73	IR Voltage Drop  IR Voltage Drop Value of voltage drop across the resistance of the motor stator at rated motor current. Used only when P35 [Motor Ctrl Mode] is set to 1 "Induction SV", 2 "Induct Econ", or 3 "Induction FV".	Units: VAC Default: Based on Drive Rating Min/Max: 0.00 / Based on Drive Rating	RW	Real
		74	Ixo Voltage Drop  Ixo Voltage Drop Value of voltage drop across the leakage inductance of the motor at rated motor current. Used only when P35 [Motor Ctrl Mode] is set to 1 "Induction SV", 2 "Induct Econ", or 3 "Induction FV".	Units: VAC Default: P25 [Motor NP Volts] x 0.25 Min/Max: 0.00 / P25 [Motor NP Volts]	RW	Real
		75	Flux Current Ref  Flux Current Reference Value of amps for full motor flux.	Units: Amps Default: P26 [Motor NP Amps] x 0.35 Min/Max: 0.00 / P26 [Motor NP Amps] x 0.995	RW	Real
		76	Total Inertia  Total Inertia Time for a motor coupled to a load to accelerate from zero to base speed at rated motor torque. Calculated during auto-tune.	Units: Secs Default: 2.00 Min/Max: 0.01 / 600.00	RW	Real
		77	Inertia Test Lmt  Inertia Test Limit Maximum number of revolutions the motor rotates during the Inertia AutoTune test. When the value is zero, the limit is not active.	Units: Revs Default: 0.0 Min/Max: 0.0 / 65535.0	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																					
MOTOR CONTROL	Autotune	78	EncdrIss AngComp Encoderless Angle Compensation Represents electrical angle compensation dependent on motor cable and PWM Frequency. Determined during autotuning when P35 [Motor Ctrl Mode] is set to one of the FV modes without speed feedback.	Units: Rad Default: 0.0000 Min/Max: -/+6.2831.0000	RW	Real																																																					
		79	EncdrIss VltComp Encoderless Voltage Compensation Represents voltage compensation dependent on motor cable and PWM Frequency. Determined during autotuning when P35 [Motor Ctrl Mode] is set to one of the FV modes without speed feedback.	Units: VAC Default: Based on Drive Rating Min/Max: 0.00 / P25 [Motor NP Volts] x 0.25	RW	Real																																																					
		80	PM Cfg  Permanent Magnet Motor Configuration This parameter includes two options for PM FV mode selected by P35 [Motor Ctrl Mode]. When Bit 0 = 1 - PM Offset test will be executed before the drive runs normal operation only after a power cycle or drive reset. When Bit 1 = 1 - Vqs regulator will be enabled. <table><tr><td>Options</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Vqs Reg En</td><td>AutoOfstTest</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True	Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Vqs Reg En	AutoOfstTest	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0		
		Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Vqs Reg En	AutoOfstTest																																								
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0																																								
		81	PM PriEnc Offset Permanent Magnet Motor Primary Encoder Offset The amount of offset between the primary feedback encoder counts, and the rotor flux center position of the PM motor. A value of 1024 is equal to 360 electrical degrees. This parameter is updated during the PM Offset test which runs at the first start after a power cycle/ system reset (P80 [PM Cfg] Bit 0 = 1) and during autotune in PM FV mode.	Default: 0 Min/Max: 0 / 1023	RW	32-bit Integer																																																					
		82	PM AltEnc Offset Permanent Magnet Motor Alternate Encoder Offset The amount of offset between the alternate feedback encoder counts, and the rotor flux center position of the PM motor. A value of 1024 is equal to 360 electrical degrees. This parameter is updated during the PM Offset test which runs at the first start after a power cycle/ system reset (P80 [PM Cfg] Bit 0 = 1) and during autotune in PM FV mode. Active only when Alternate Velocity Feedback is being used during Auto Tach Loss Switchover (see P635 [Spd Options Ctrl]).	Default: 0 Min/Max: 0 / 1023	RW	32-bit Integer																																																					
		83	PM OfstTst Cur  Permanent Magnet Motor Offset Test Current Amplitude of the current command in per unit of the motor rated current during the PM Offset Test, which is one of the auto tune tests in PM FV mode.	Units: % Default: 40.00 Min/Max: 0.00 / 200.00	RW	Real																																																					
		84	PM OfstTst CRamp  Permanent Magnet Motor Offset Test Current Ramp Ramp time of the current command during the PM Offset Test in PM FV mode, which is defined as ramp time to reach the P80 [PM Cfg] current command amplitude.	Units: Secs Default: 3.00 Min/Max: 0.00 / 100.00	RW	Real																																																					
85	PM OfstTst FRamp  Permanent Magnet Motor Offset Test Frequency Ramp Defines the frequency ramp time of the current command during the PM Offset Test in PM FV mode, which is defined as ramp time in seconds from 0 to 3 Hz.	Units: Secs Default: 60.00 Min/Max: 0.00 / 1000.00	RW	Real																																																							
86	PM CEMF Voltage Permanent Magnet Motor Counter Electro Motive Force Counter electromotive force (CEMF) voltage displayed in line-to-line rms value, which is normalized to the base motor speed. Updated after the completion of the auto tune in PM FV mode.	Units: VAC Default: P25 [Motor NP Volts] x 0.0675 Min/Max: 0.00 / P25 [Motor NP Volts] x 1.5	RW	Real																																																							

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Autotune	87	PM IR Voltage Permanent Magnet Motor Stator Voltage Drop Voltage across the stator resistance of the PM motor at the rated motor current displayed in line-to-line rms value. Updated after the completion of the auto tune in PM FV mode.	Units: VAC Default: Based on Drive Rating Min/Max: 0.00 / P25 [Motor NP Volts] x 0.25	RW	Real
		88	PM IXq Voltage Permanent Magnet Motor Q-Axis Stator Inductance Voltage Drop Voltage across the q-axis stator inductance of the PM motor at the rated motor current and the rated motor frequency displayed in line-to-line rms value. This parameter is updated after the completion of the auto tune in PM FV mode.	Units: VAC Default: P25 [Motor NP Volts] x 0.0435 Min/Max: 0.00 / P25 [Motor NP Volts] x 1.5	RW	Real
		89	PM IXd Voltage Permanent Magnet Motor D-Axis Stator Inductance Voltage Drop Voltage across the d-axis stator inductance of the PM motor at the rated motor current and the rated motor frequency displayed in line-to-line rms value. Updated after the completion of the auto tune in PM FV mode.	Units: VAC Default: P25 [Motor NP Volts] x 0.0435 Min/Max: 0.00 / P25 [Motor NP Volts] x 1.5	RW	Real
		91	PM Vqs Reg Kp Permanent Magnet Motor Vqs Regulator Proportional Gain Proportional gain of the vqs regulator in PM FV mode. When P80 [PM Cfg] Bit 1 = 1, the vqs regulator will be active either when the motor voltage exceeds the voltage limited by the DC bus voltage or when the motor voltage exceeds the value set by P36 [Maximum Voltage].	Default: 2.50 Min/Max: 0.00 / 1000.00	RW	Real
		92	PM Vqs Reg Ki Permanent Magnet Motor Vqs Regulator Integral Gain Integral gain of the vqs regulator in PM FV mode.	Default: 0.50 Min/Max: 0.00 / 1000.00	RW	Real
		93	PM Dir Test Cur Permanent Magnet Motor Direction Test Current Amount of current commanded during the direction test when P35 [Motor Ctrl Mode] option 6 "PM FV" is selected. When the Start-Up feature is used, this value is automatically set to 10% of the motor rated current.	Units: Amps Default: P26 [Motor NP Amps]/10 Min/Max: 0.00 / P26 [Motor NP Amps]	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Vector Regulator	95	VCL Cur Reg BW Vector Closed Loop Current Regulator Bandwidth Sets the bandwidth of the current regulator by automatically adjusting the gains (P96 and P97) based on motor autotune results. When the value of bandwidth is zero (default) the current regulator gains can be manually adjusted. The default values for P95, P96, and P97 typically provide excellent performance, and do not normally need to be adjusted.	Units: R/S Default: 0.0 Min/Max: 0.0 / 9999.0	RW	Real
		96	VCL Cur Reg Kp Vector Closed Loop Current Regulator Proportional Gain Proportional gain of the current regulator. Can be adjusted when P95 is set to zero. The default values for P95, P96, and P97 typically provide excellent performance, and do not normally need to be adjusted.	Default: 1250.0 Min/Max: 0.0 / 10000.0	RW	Real
		97	VCL Cur Reg Ki Vector Closed Loop Current Regulator Integral Gain Integral gain of the current regulator. Can be adjusted when P95 is set to zero. The default values for P95, P96, and P97 typically provide excellent performance, and do not normally need to be adjusted.	Default: 60.0 Min/Max: 0.0 / 10000.0	RW	Real
		98	VEncdls FReg Kp Encoderless Vector Frequency Regulator Proportional Gain Represents electrical angle compensation dependent on motor cable and PWM Frequency. Determined during autotuning when P35 [Motor Ctrl Mode] is set to one of the FV modes without speed feedback.	Units: Hz/A Default: 524.0 Min/Max: 0.0 / 100000.0	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Vector Regulator	99	VEncdls FReg Ki Encoderless Vector, Frequency Regulator Integral Gain Determined during autotuning when P35 [Motor Ctrl Mode] is set to one of the FV modes without speed feedback. Represents voltage compensation dependent on motor cable and PWM Frequency.	Units: Hz/A Default: 9080.0 Min/Max: 0.0 / 100000.0	RW	Real
		100	Slip Reg Enable Slip Regulator Enable Enables or disables the slip frequency regulator. Active only when P35 [Motor Cntl Mode] = 7 "FV Induction" and encoder feedback is used.	Default: 1 = "Enabled" Options: 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		101	Slip Reg Ki Slip Regulator Integral Gain Integral gain for the slip frequency regulator.	Default: 10.00 Min/Max: 0.00 / 10000.00	RW	Real
		102	Slip Reg Kp Slip Regulator Proportional Gain Proportional gain for the slip frequency regulator.	Default: 0.50 Min/Max: 0.00 / 10000.00	RW	Real
		103	Flux Reg Enable Flux Regulator Enable Enables or disables the flux regulator. Active only when P35 [Motor Cntl Mode] = 7 "FV Induction".	Default: 1 = "Enabled" Options: 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		104	Flux Reg Ki Flux Regulator Integral Gain Integral gain for the flux regulator.	Default: 30.00 Min/Max: 0.00 / 10000.00	RW	Real
		105	Flux Reg Kp Flux Regulator Proportional Gain Proportional gain for the flux regulator.	Default: 1.00 Min/Max: 0.00 / 10000.00	RW	Real
		106	Trq Adapt Speed Torque Adaption Speed Operating frequency (speed) at which the adaptive torque control regulators become active as a percent of motor nameplate frequency. Active only when P35 [Motor Cntl Mode] = 7 "FV Induction".	Units: % Default: 10.00 Min/Max: 0.00 / 100.00	RW	Real
		107	Trq Adapt En Torque Adaption Enable Enables or disables the adaptive torque control. Active only when P35 [Motor Cntl Mode] = 7 "FV Induction".	Default: 1 = "Enabled" Options: 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		108	Phase Delay Comp Phase Delay Compensation Used to adjust the sample delay compensation gain for the current feedback. The gain compensation is scaled to the sample time (for example, +1.0 would be a compensation of positive 1 sample time).	Units: % Default: 0.00 Min/Max: -/+100.00	RW	Real
		109	Trq Comp Mode Torque Compensation Mode Automatic: Updates the torque compensation gains (P110 [Trq Comp Mtring] and P111 [Torque Comp Regen]) after autotune.	Default: 1 = "Auto" Options: 0 = "Manual" 1 = "Auto"	RW	32-bit Integer
		110	Trq Comp Mtring Torque Compensation Motoring Motor torque compensation applied to the torque command for motoring power. This parameter can be set manually or determined automatically during autotune. (See P109 [Trq Comp Mode].) In manual mode, a value of 5% will increase the commanded torque by 5% (gain of 1.05). This is used for flux vector motor control modes (P35 [Motor Ctrl Mode]).	Units: % Default: 0.00 Min/Max: -/+50.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Vector Regulator	111	Trq Comp Regen Torque Compensation Regeneration Motor torque compensation applied to the torque command for regenerating torque. This parameter can be set manually or determined automatically during autotune. (See P109 [Trq Comp Mode].) In manual mode, a value of -3% will decrease the commanded torque by 3% (gain of 0.97). This is used for flux vector motor control modes (P35 [Motor Ctrl Mode]).	Units: % Default: 0.00 Min/Max: -/+50.00	RW	Real
		112	Slip Adapt lqs Slip Adaption lqs Level of per unit lqs at which the adaptive slip frequency regulator becomes active. Active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: 0.05 Min/Max: 0.00 / 1.00	RW	Real
		113	SFAdapt SlewLmt Slip and Flux Adaption Slew Limit Time that the slip, flux, and torque regulators are allowed to converge before the regulators are turned on after the motor speed reaches the level set in P106 [Trq Adapt Speed].	Units: Secs Default: 0.00 Min/Max: 0.00 / 60.00	RW	Real
		114	SFAdapt SlewRate Slip and Flux Adaption Slew Rate Rate that the slip and flux regulators can converge before the regulators are enabled.	Default: 0.005000 Min/Max: 0.000010 / 1.000000	RW	Real
		115	SFAdapt CnvrgrLvl Slip and Flux Adaption Converge Level Slip and flux regulator error level that indicates convergence.	Default: 0.010000 Min/Max: 0.000010 / 1.000000	RW	Real
		116	SFAdapt CnvrgrLmt Slip and Flux Adaption Converge Limit Duration of convergence before the adaption regulators are enabled after the error has decreased below the level set in P115 [SFAdapt CnvrgrLvl].	Default: 0.500 Min/Max: 0.000 / 5.000	RW	Real

Drive Feedback & IO File

File	Group	No.	Name Description	Values	Read-Write	Data Type
FEEDBACK & IO	Feedback	125	Pri Vel Fdbk Sel  Primary Velocity Feedback Select Selects the source of the P3 [Mtr Vel Fdbk] and P131 [Active Vel Fdbk] that will be used when the drive is in operation without an Auto Tach Loss Switchover. Possible selections include: Port 0 – Open Loop Fdbk, Port 0 – Simulator Fdbk, and any Port that contains a feedback module (for example, Encoder). The Disabled and Open Loop Fdbk selections are functionally equivalent, with Open Loop being the default setting. Open Loop velocity feedback is estimated based on P1 [Output Frequency] and P5 [Torque Cur Fdbk], adjusted using P621 [Slip RPM @ FLA]. Simulator Fdbk is available in the Flux Vector selections for P35 [Motor Ctrl Mode]. Simulator velocity feedback is calculated based on P690 [Limited Trq Ref] and P76 [Total Inertia]. This selection is useful for drive operational checkout and test when motor movement is undesired. In simulation mode, gating of the power inverter section of the drive is disabled. Selection of any option module port that contains an encoder module results in P3 [Mtr Vel Fdbk] based on a measured value. Data obtained from the selected feedback module will be used to determine motor velocity feedback.	Default: 137 Options: 0 / 159999	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
FEEDBACK & IO	Feedback	126	Pri Vel FdbkFiltr Primary Velocity Feedback Filter Adjusts a filter setting that is applied to the motor velocity feedback source that is selected by P125 [Pri Vel Fdbk Sel]. The purpose of this filter is to reduce the level of noise in the feedback signal. This is moving average type filter that has a delay setting of N, where N is an integer number (0, 1, 2 ...). A setting of zero provides no filtering and no delay. Larger values of N result in more filtering and more delay. The best setting for this filter depends on the level of noise in the feedback signal and the bandwidth setting of the velocity regulator. In the Flux Vector selections for P35 [Motor Ctrl Mode], setting P636 [Speed Reg BW] to a non-zero setting places the drive in an automatic gain/filter adjustment mode. When the drive is in this automatic adjustment mode, the value of P666 [Speed Comp Gain] and possibly P644 [Spd Err Filt BW] are adjusted, based on the setting of P126 [Pri Vel FdbkFiltr]. The automatic setting of P644 [Spd Err Filt BW] becomes independent of the feedback filter setting when P704 [InAdp LdObs Mode] is set to 1 "InertiaAdapt."	Default: 3 = "50R/S Noise" Options: 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer
		127	 Pri Vel Feedback Primary Velocity Feedback Output of the Primary Velocity Feedback Delay filter, in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFiltr]. The Primary Velocity Feedback is used when the drive is operating without an auto Tach Loss Switchover.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real
		128	 Alt Vel Fdbk Sel Alternate Velocity Feedback Select Selects the source of the P3 [Mtr Vel Fdbk] and P131 [Active Vel Fdbk] to be used when the drive is in operation with an auto Tach Loss Switchover.	Default: 137 Options: 0 / 159999	RW	32-bit Integer
		129	Alt Vel FdbkFiltr Alternate Velocity Feedback Filter Adjusts a filter setting that is applied to the motor velocity feedback source that is selected by P128 [Alt Vel Fdbk Sel]. The purpose of this filter is to reduce the level of noise in the feedback signal. Filter adjustment and operation is similar to P126 [Pri Vel FdbkFiltr].	Default: 3 = "50R/S Noise" Options: 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer
		130	 Alt Vel Feedback Alternate Velocity Feedback Output of the Alternate Velocity Feedback Delay filter, displayed in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFiltr]. The Alternate Velocity Feedback is used when the drive is operating with an auto Tach Loss Switchover.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real
		131	 Active Vel Fdbk Active Velocity Feedback Active motor velocity feedback value that used by the Flux Vector control's velocity regulator. This value in use is the result of the Primary/Alternate feedback selection. When the drive is operating without an auto Tach Loss Switchover, then P127 [Pri Vel Feedback] is selected. When the drive is operating with an auto Tach Loss Switchover, then the P130 [Alt Vel Feedback] will be selected. Status Bit 5 "FdbkLoss SwO" will become set in P936 [Drive Status 2] when an Auto Tach Switchover has occurred.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real
		132	 Aux Vel Fdbk Sel Auxiliary Velocity Feedback Select Selects the source of the drive's P134 [Aux Vel Feedback]. Possible selections are the same as for P125 [Pri Vel Fdbk Sel].	Default: 137 Options: 0 / 159999	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
FEEDBACK & IO	Feedback	133	Aux Vel FdbkFltr Auxiliary Velocity Feedback Filter Adjusts a filter setting that is applied to the P134 [Aux Vel Feedback] that is selected by P132 [Aux Vel Fdbk Sel]. The purpose of this filter is to reduce the level of noise present in the feedback signal. Filter adjustment and operation is similar to P126 [Pri Vel FdbkFltr].	Default: 3 = "50R/S Noise" Options: 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer
		134	 Aux Vel Feedback Auxiliary Velocity Feedback Output of the Auxiliary Velocity Feedback Delay filter, in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFltr]. Typically used as a speed reference source. This selection is available in P545 [Spd Ref A Sel] and P550 [Spd Ref B Sel].	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real
		135	 Mtr Psn Fdbk Sel Motor Position Feedback Select Selects the source of P847 [Psn Fdbk]. Possible selections include: Port 0 – Simulator Fdbk, and any Port that contains a feedback module (for example, Encoder). Open Loop Feedback is not available as a Position feedback source. The default setting is P138 [Simulator Fdbk]. This is a test mode where position feedback is calculated based on P690 [Limited Trq Ref] and P76 [Total Inertia]. When position control is used, a valid position feedback source must be selected.	Default: 138 Options: 0 / 159999	RW	32-bit Integer
		136	 Load Psn FdbkSel Load Position Feedback Select Selects a position load feedback source for the position control. The position load feedback P847 [Psn Fdbk] indicates the selected position feedback value. The value forms the primary feedback for the position regulator integration channel.	Default: 137 Options: 0 / 159999	RW	32-bit Integer
		137	Open Loop Fdbk Open Loop Feedback An estimated motor feedback source that is available to any of the Velocity Feedback Selection parameters – P125 [Pri Vel Fdbk Sel], P128 [Alt Vel Fdbk Sel], and P132 [Aux Vel Fdbk Sel]. Open Loop Feedback is not available as a Position feedback source. The Open Loop Feedback's parameter value has units of encoder counts as established by P141 [Virtual Enc EPR]. Open Loop feedback is estimated based on P1 [Output Frequency] and P5 [Torque Cur Fdbk], adjusted using P621 [Slip RPM @ FLA].	Default: 0 Options: -2147483648 / 2147483647	RW	32-bit Integer
		138	Simulator Fdbk Simulator Feedback Simulator Feedback is a calculated motor feedback source. It can be used when operating in any of the Flux Vector control modes that are selected in P35 [Motor Ctrl Mode]. Simulator Feedback is available to any of the Velocity Feedback Selection parameters: P125 [Pri Vel Fdbk Sel], P128 [Alt Vel Fdbk Sel], and P132 [Aux Vel Fdbk Sel]. Simulator Feedback is also available as a Position feedback source as selected by P135 [Mtr Psn Fdbk Sel]. The Simulator Feedback's parameter value has units of encoder counts, as established by P141 [Virtual Enc EPR]. Simulator velocity feedback is calculated based on P690 [Limited Trq Ref] and P76 [Total Inertia]. This selection is useful for drive operational checkout and test when motor movement is undesired. In simulation mode, gating of the power inverter section of the drive is disabled.	Default: 0 Options: -2147483648 / 2147483647	RW	32-bit Integer
		139	Delayed Spd Ref Delayed Speed Reference One sample period delayed output of P594 [Ramped Spd Ref]. Used in some applications to synchronize the speed reference value when controlling multiple drives. In these applications, the drive that supplies the master speed reference would use the [Delayed Spd Ref] value. Setting P635 [Spd Options Ctrl] bit 8 "Delayed Ref" will select the delayed reference in the master drive. P594 [Ramped Spd Ref] would then be transmitted to the slave drives over a communication link.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
FEEDBACK & IO	Feedback	140	Virtual EncDelay Virtual Encoder Delay One sample period delayed output of P142 [Virtual Enc Psn]. Used in some applications to phase synchronize position reference through a drive communications link. The master is delayed one sample while the downstream drives update their position references – then all drives sample position simultaneously. The downstream drives do not select a delay. The selection of the delayed or non-delayed position reference is made by choosing the desired parameter in P766 [Psn Direct Stpt].	Default: 0 Options: –2147483648 / 2147483647	RW	32-bit Integer
		141	Virtual Enc EPR Virtual Encoder Edges Per Revolution Equivalent Edges Per Revolution (EPR) or line count of a virtual encoder. A virtual encoder is a position reference whose input is derived from the speed reference. It accumulates pulses at the same rate as a real encoder of identical Pulses Per Revolution (PPR). Enter the equivalent PPR. For example, enter 1024 PPR to match an encoder with 1024 EPR.	Default: 4096 Min/Max: 10 / 67108864	RW	32-bit Integer
		142	Virtual Enc Psn Virtual Encoder Position A 32 bit pulse accumulator of the virtual encoder. The accumulated pulse count is equivalent to the hardware accumulator of a real encoder. It accumulates at a rate of 4x the value placed in P141 [Virtual Enc EPR]. The accumulator starts at zero upon position enable.	Default: 0 Min/Max: –/+32767	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
FEEDBACK & IO	Digin Functions	150	 Digital In Conf Digital Input Configure Defines operation for DI Run type parameters. “Run Edge” (0) – Control function requires a rising edge (open to close transition) in order for the drive to run. “Run Level” (1) – As long as a separate “Stop” command is not issued, the level alone (no rising edge required) determines whether or not the drive will run.	Default: 0 = “Run Edge” Options: 0 = “Run Edge” 1 = “Run Level”	RW	32-bit Integer
		 ATTENTION: Equipment damage and/or personal injury may result if this parameter is used in an inappropriate application. Do not use this function without considering applicable local, national and international codes, standards, regulations, or industry guidelines.				
		155	 DI Enable Digital Input Enable Assigns a digital input used to enable the drive.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		156	 DI Clear Fault Digital Input Clear Fault Assigns a digital input used to clear faults.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		157	 DI Aux Fault Digital Input Auxiliary Fault Assigns a digital input used to force an external auxiliary fault.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		158	 DI Stop Digital Input Stop Assigns a digital input used to issue a stop command.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		159	 DI Cur Lmt Stop Digital Input Current Limit Stop Assigns a digital input used to perform a current limited stop.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
FEEDBACK & IO	Digin Functions	160	DI Coast Stop Digital Input Coast Stop Assigns a digital input used to perform a coast-to-stop.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		161	DI Start Digital Input Start Assigns a digital input used to start the drive (3-wire control).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		162	DI Fwd Reverse Digital Input Forward Reverse Assigns a digital input used to command reverse direction.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		163	DI Run Digital Input Run Assigns a digital input used to run the drive (2-wire control).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		164	DI Run Forward Digital Input Run Forward Assigns a digital input used to run the drive (2 wire control) and command forward direction.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		165	DI Run Reverse Digital Input Run Reverse Assigns a digital input used to run the drive (2 wire control) and command reverse direction.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		166	DI Jog 1 Digital Input Jog 1 Assigns a digital input used to jog the drive at the speed of P556 [Jog Speed 1].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		167	DI Jog 1 Forward Digital Input Jog 1 Forward Assigns a digital input used to jog the drive in the forward direction at the speed of P556 [Jog Speed 1].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		168	DI Jog 1 Reverse Digital Input Jog 1 Reverse Assigns a digital input used to jog the drive in the reverse direction at the speed of P556 [Jog Speed 1].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		169	DI Jog 2 Digital Input Jog 2 Assigns a digital input used to jog the drive at the speed of P557 [Jog Speed 2].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		170	DI Jog 2 Forward Digital Input Jog 2 Forward Assigns a digital input used to jog the drive in the forward direction at the speed of P557 [Jog Speed 2].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		171	DI Jog 2 Reverse Digital Input Jog 2 Reverse Assigns a digital input used to jog the drive in the reverse direction at the speed of P557 [Jog Speed 2].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		172	DI Manual Ctrl Digital Input Manual Control Assigns a digital input used to command manual control.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type																																								
FEEDBACK & IO	Digin Functions	173 174 175	DI Speed Sel 0 DI Speed Sel 1 DI Speed Sel 2  Digital Input Speed Select 0, 1, 2 Assigns digital inputs used to select between speed references as follows: <table><tr><th colspan="3">Input Status (1 = Input Actuated)</th><th>Auto Reference Source</th></tr><tr><th>DI Speed Sel 2</th><th>DI Speed Sel 1</th><th>DI Speed Sel 0</th><th></th></tr><tr><td>0</td><td>0</td><td>0</td><td>Reference A</td></tr><tr><td>0</td><td>0</td><td>1</td><td>Reference A</td></tr><tr><td>0</td><td>1</td><td>0</td><td>Reference B</td></tr><tr><td>0</td><td>1</td><td>1</td><td>Preset Speed 3</td></tr><tr><td>1</td><td>0</td><td>0</td><td>Preset Speed 4</td></tr><tr><td>1</td><td>0</td><td>1</td><td>Preset Speed 5</td></tr><tr><td>1</td><td>1</td><td>0</td><td>Preset Speed 6</td></tr><tr><td>1</td><td>1</td><td>1</td><td>Preset Speed 7</td></tr></table>	Input Status (1 = Input Actuated)			Auto Reference Source	DI Speed Sel 2	DI Speed Sel 1	DI Speed Sel 0		0	0	0	Reference A	0	0	1	Reference A	0	1	0	Reference B	0	1	1	Preset Speed 3	1	0	0	Preset Speed 4	1	0	1	Preset Speed 5	1	1	0	Preset Speed 6	1	1	1	Preset Speed 7	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		Input Status (1 = Input Actuated)			Auto Reference Source																																									
		DI Speed Sel 2	DI Speed Sel 1	DI Speed Sel 0																																										
		0	0	0	Reference A																																									
		0	0	1	Reference A																																									
		0	1	0	Reference B																																									
		0	1	1	Preset Speed 3																																									
		1	0	0	Preset Speed 4																																									
		1	0	1	Preset Speed 5																																									
		1	1	0	Preset Speed 6																																									
		1	1	1	Preset Speed 7																																									
		177	DI MOP Inc  Digital Input Motor Operated Potentiometer Increment Assigns a digital input used to increment the MOP speed reference.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																								
		178	DI MOP Dec  Digital Input Motor Operated Potentiometer Decrement Assigns a digital input used to decrement the MOP speed reference.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																								
		179	DI Accel 2  Digital Input Acceleration 2 Assigns a digital input used to activate P536 [Accel Time 2].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																								
		180	DI Decel 2  Digital Input Deceleration 2 Assigns a digital input used to activate P538 [Decel Time 2].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																								
181 182	DI SpTqPs Sel 0 DI SpTqPs Sel 1  Digital Input Speed Torque Position Select 0, 1 Assigns digital inputs used to select between speed, torque, and position modes.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																										
185	DI Stop Mode B  Digital Input Stop Mode B Assigns a digital input used to activate P371 [Stop Mode B].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																										
186	DI BusReg Mode B  Digital Input Bus Regulation Mode B Assigns a digital input used to activate P373 [Bus Reg Mode B].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																										
187	DI PwrLoss ModeB  Digital Input Power Loss Mode B Assigns a digital input used to activate P453 [Pwr Loss Mode B].	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																										
188	DI Pwr Loss  Digital Input Power Loss Assigns a digital input used to force a power loss condition.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																										
189	DI Precharge  Digital Input Precharge Assigns a digital input used to force the drive into precharge (normally only used in common bus applications).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																										
190	DI Prchrg Seal  Digital Input Precharge Seal Assigns a digital input used to force a unique fault when an external precharge circuit opens.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer																																										

File	Group	No.	Name Description	Values	Read-Write	Data Type
FEEDBACK & IO	Digin Functions	191	DI PID Enable Digital Input Proportional Integral Derivative Enable Assigns a digital input used to activate the Process PID control.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		192	DI PID Hold Digital Input Proportional Integral Derivative Hold Assigns a digital input used to hold the Process PID integrator.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		193	DI PID Reset Digital Input Proportional Integral Derivative Reset Assigns a digital input used to reset the Process PID integrator.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		194	DI PID Invert Digital Input Proportional Integral Derivative Invert Assigns a digital input used to invert the output of the Process PID control.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		195	DI Torque StptA Digital Input Torque Setpoint A Assigns a digital input used to force P676 [Trq Ref A Stpt] as the source for Torque Reference A, regardless of the setting in P675 [Trq Ref A Sel]. Used when the drive is in a mode that is commanding torque (see P309...P312).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		196	DI Fwd End Limit Digital Input Forward End Limit Assigns a digital input used trigger a Forward End Limit (primarily used in the Torque Prove function).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		197	DI Fwd Dec Limit Digital Input Forward Deceleration Limit Assigns a digital input used trigger a Forward Decel Limit (primarily used in the Torque Prove function).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		198	DI Rev End Limit Digital Input Reverse End Limit Assigns a digital input used trigger a Reverse End Limit (primarily used in the Torque Prove function).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		199	DI Rev Dec Limit Digital Input Reverse Deceleration Limit Assigns a digital input used trigger a Reverse Decel Limit (primarily used in the Torque Prove function).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		200	DI PHdwr OvrTrvl Digital Input Positive Hardware Over Travel Assigns a digital input used trigger a Positive Hardware Over-travel (primarily used in the Torque Prove function).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		201	DI NHdwr OvrTrvl Digital Input Negative Hardware Over Travel Assigns a digital input used trigger a Negative Hardware Over-travel (primarily used in the Torque Prove function).	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type													
FEEDBACK & IO	Control Board IO	220	Digital In Sts																
			Digital Input Status																
			Status of the digital input(s) resident on the main control board (Port 0).																
			Options																
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Digital In 0		
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 = Condition False	
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	1 = Condition True	

Drive Cfg File

File	Group	No.	Name Description	Values	Read-Write	Data Type
DRIVE CFG	Preferences	300	Speed Units  Speed Units Selects the units to be used for all speed related parameters. Options 0 and 1 do not convert other parameter values (e.g. a 60 Hz reference becomes 60 rpm). Options 2 and 3 perform an automatic conversion of other parameter values (e.g. a 60 Hz reference becomes 1800 rpm, based on motor nameplate settings). This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Current Selection Options: 0 = "Hz" 1 = "RPM"	RW	32-bit Integer
		301	Access Level Access Level Sets the access level for parameters and option choices. The "Basic" setting provides a smallest, simplest, and most user friendly view. The "Advanced" setting may often be required to use advanced features. The "Expert" view is not normally recommended (makes the list very long), and shows extra parameters that should rarely be required. When the access level is changed, PC based tools (e.g. Drive Tools and Drive Explorer) will require a reconnect. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Current Selection Options: 0 = "Basic" 1 = "Advanced" 2 = "Expert"	RW	32-bit Integer
		302	Language Language Select display language. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: 0 = "Not Used" Options: 0 = "Not Used" 1 = "English" 2 = "Spanish" 3 = "French" 4 = "Italian" 5 = "German" 6 = "Dutch" 7 = "Portuguese" 8 = "Chinese" 9 = "Japanese" 10 = "Korean"	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type								
DRIVE CFG	Control Cfg	305	Voltage Class Voltage Class  Selects the voltage class operation of the drive (e.g. for 400 / 480V drives, "Low Voltage" = 400V, "High Voltage" = 480V). This setting affects how the drive will appear as a node on a system (e.g. 400V or 480V), and also affects the drive's current rating (Rated Amps). This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: 0 = "Low Voltage" Options: 0 = "Low Voltage" 1 = "High Voltage"	RW	32-bit Integer								
		306	Duty Rating Duty Rating  Selects the continuous and overload capacity of the drive. "Normal Duty" provides the highest continuous rating, but smaller overload ratings (110% for 60 sec, 150% for 3 sec). "Heavy Duty" provides a smaller continuous rating, but larger overload ratings (150% for 60 sec, 180% for 3 sec). This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: 0 = "Normal Duty" Options: 0 = "Normal Duty" 1 = "Heavy Duty"	RW	32-bit Integer								
		308	Direction Mode Direction Mode  Selects method for changing direction. <table><tr><td>Mode</td><td>Direction Change</td></tr><tr><td>Unipolar</td><td>Drive Logic</td></tr><tr><td>Bipolar</td><td>Sign of Reference</td></tr><tr><td>Rev Disable</td><td>Not Changeable</td></tr></table>	Mode	Direction Change	Unipolar	Drive Logic	Bipolar	Sign of Reference	Rev Disable	Not Changeable	Default: 0 = "Unipolar" Options: 0 = "Unipolar" 1 = "Bipolar" 2 = "Rev Disable"	RW	32-bit Integer
		Mode	Direction Change											
Unipolar	Drive Logic													
Bipolar	Sign of Reference													
Rev Disable	Not Changeable													
ATTENTION: Enabling the Bipolar Direction Mode can cause unexpected direction changes. Equipment damage and/or personal injury can result if this parameter is used in an inappropriate application. Do Not use this function without considering all applicable local, national, and international codes standards, regulations, or industry guidelines.														

File	Group	No.	Name Description	Values	Read-Write	Data Type
DRIVE CFG	Control Cfg	309	SpdTrqPsn Mode A	Default: 1 = "Speed Reg" Options: 0 = "Zero Torque" 1 = "Speed Reg" 2 = "Torque Reg" 3 = "SLAT Min" 4 = "SLAT Max" 5 = "Sum" 6 = "Profiler" 7 = "Psn PTP" 8 = "Psn Camming" 9 = "Psn PLL" 10 = "Psn Direct"	RW	32-bit Integer
		310	SpdTrqPsn Mode B			
		311	SpdTrqPsn Mode C			
		312	SpdTrqPsn Mode D			
			Speed Torque Position Mode A			
			Applies only to the Flux Vector control modes in P35 [Motor Ctrl Mode]. It selects between speed regulation, torque regulation, or position regulation operation of the drive. The source of P685 [Selected Trq Ref] will be determined by the selection in this parameter when P181 [DI SpTqPs Sel 0] and P182 [DI SpTqPs Sel 1] have selected "Disabled" or selected bits that are logic low.			
			In P935 [Drive Status 1] three bits are provided that indicate the regulation mode of the drive when it is running. Bit 21 "Speed Mode" will become set when the drive is running with the speed regulator active. Similarly, Bit 22 "Position Mode" and Bit 23 "Torque Mode" indicate when their respective regulation modes are active.			
			Under some conditions, the active torque mode may be forced into speed mode regardless of the setting of Speed/Torque/Position. The P313 [Activ SpTqPs Mode] parameter will indicate this and will reflect the mode selection that is in use.			
			Possible selections for Speed/Torque/Position are:			
			"Zero Torque" (0) – Drive operates as a torque regulator with P685 [Selected Trq Ref] forced to a constant value of zero torque.			
			"Speed Reg" (1) – Drive operates as a speed regulator. P685 [Selected Trq Ref] comes from P660 [SReg Output] plus P699 [Inertia Comp Out].			
			"Torq Ref" (2) – Drive operates as a torque regulator. P685 [Selected Trq Ref] comes from P4 [Commanded Trq]. Under some conditions such as jogging or performing a ramp to stop operation, the drive will automatically bypass this selection and temporarily switch to speed regulation mode.			
			"SLAT Min" (3) – Drive operates in "Speed Limited Adjustable Torque – Minimum select" mode. This is a special mode of operation used primarily in winder applications. The drive will typically operate as a torque regulator, provided that the P4 [Commanded Trq] value is algebraically smaller in value than the speed regulator's output. The drive may automatically enter speed regulation mode, based on conditions within the speed regulator and the magnitude of the speed regulator's output relative to the torque reference.			
			"SLAT Max" (4) – Drive operates in "Speed Limited Adjustable Torque – Maximum select" mode. This is a special mode of operation used primarily in winder applications. The drive will typically operate as a torque regulator, provided that the P4 [Commanded Trq] value is algebraically larger in value than the speed regulator's output. The drive may automatically enter speed regulation mode, based on conditions within the speed regulator and the magnitude of the speed regulator's output relative to the torque reference.			
			"Sum" (5) – Drive operates as a speed regulator. P685 [Selected Trq Ref] comes from P660 [SReg Output] plus torque adders summed with P4 [Commanded Trq].			
			"Profiler" (6) – Drive uses the Speed Profiler / Position Indexer function. The drive operates as either a speed or position regulator. Mode of operation will depend on the configuration of the Step Types in the Profiler / Indexer table.			
			"Psn P2P" (7) – Drive operates as a position regulator. P685 [Selected Trq Ref] has the same source as in Sum mode. The position control is active in Point-to-Point mode and uses its Point-to-point position reference.			
			"Psn Camming" (8) – Drive operates as a position regulator. P685 [Selected Trq Ref] has the same source as in Sum mode. The position control is active in Position CAM mode and uses its PCAM Planner position and speed reference.			
			"Psn PLL" (9) – Drive operates as a position regulator. P685 [Selected Trq Ref] has the same source as in Sum mode. The position control is active in Position Phase Lock Loop mode and uses its PLL Planner position and speed reference.			
			"Psn Direct" (10) – Drive operates as a position regulator. P685 [Selected Trq Ref] has the same source as in Sum mode. The position control is active in Direct mode and uses its Direct Position Reference.			

File	Group	No.	Name Description	Values		Read-Write	Data Type													
DRIVE CFG	Control Cfg	313	Actv SpTqPs Mode  Active Speed Torque Position Mode Displays the Speed, Torque, Position Mode that is active, based on the dynamic selection of modes A, B, C, and D, per P309...P312, and digital input conditions programmed via P181 and P182. In some cases, such as operation in the SLAT min/max modes, the final regulation mode may be forced into Speed Regulation .Refer to the Speed, Torque, and Position mode bits in P935 [Drive Status 1] that indicate the final regulation mode of the drive when it is running.	Default:	1 = "Speed Reg"	RW	32-bit Integer													
			Options:	0 = "Zero Torque" 1 = "Speed Reg" 2 = "Torque Reg" 3 = "SLAT Min" 4 = "SLAT Max" 5 = "Sum" 6 = "Profiler" 7 = "Psn PTP" 8 = "Psn Camming" 9 = "Psn PLL" 10 = "Psn Direct"																
		314	SLAT Err Stpt Speed Limited Adjustable Torque, Error Setpoint Sets the magnitude of P641 [Speed Error] at which the SLAT function will release its Forced Speed Mode signal. This condition must exist for the time specified by P315 [SLAT Dwell Time]. Once released, the drive can operate as a torque regulator, depending on the relative levels of P660 [SReg Output] and P4 [Commanded Trq]. This parameter will be entered in units of Hz or RPM, depending on the value of P300 [Speed Units].	Units:	Hz RPM	RW	Real													
			Default:	0.00																
			Min/Max:	0.00 / P27 [Motor NP Hertz] 0.00 / P28 [Motor NP RPM]																
		315	SLAT Dwell Time Speed Limited Adjustable Torque, Dwell Time Sets the amount of time period that P641 [Speed Error] must exceed the P314 [SLAT Err Stpt] magnitude in order to return to min/max torque mode.	Units:	Secs	RW	Real													
			Default:	0.00																
	Min/Max:	0.00 / 2.00																		
	321	Prchrg Control Precharge Control When disabled, the drive will stay in the precharge mode and will not be able to run. When enabled, the normal precharge operation is run. This parameter allows programmable control of the completion of the precharge function and may be used to coordinate the precharge of a system of drives or to reset P12 [DC Bus Memory] in the drive.	Default:	1 = "Enabled"	RW	32-bit Integer														
			Options:	0 = "Disabled" 1 = "Enabled"																
	322	Prchrg Delay Precharge Delay Adjustable delay between the time all other precharge conditions have been met and the time the drive leaves the precharge state. This can be used to control the sequences of precharge completion in a drive system.	Units:	Secs	RW	Real														
			Default:	0.50																
			Min/Max:	0.10 / 30.00																
	323	Prchrg Err Cfg Precharge Error Configuration Selects the action to take when P190 [DI Prchrg Seal] is used to indicate that an external precharge circuit has opened.	Default:	3 = "FltCoastStop"	RW	32-bit Integer														
			Options:	3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"																
	324	Logic Mask  Logic Mask Enables/disables ports to control the logic command (such as start, stop, direction).																		
		Options	Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In	
		Default	0	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		0 = Condition False 1 = Condition True																		

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																					
DRIVE CFG	Auto Manual Ctrl	325	Auto Mask  Automatic Mask Enables/disables ports to control the logic command (such as start, stop, direction), while in Auto mode. Options <table><tr><td></td><td>Reserved</td><td>Port 14</td><td>Port 13</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Digital In</td></tr><tr><td>Default</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True		Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In	Default	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
			Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In																																								
		Default	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1																																									
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									
		326	Manual Cmd Mask  Manual Command Mask Enables/disables ports to control the logic command (such as start, stop, direction), while in Manual Mode. Options <table><tr><td></td><td>Reserved</td><td>Port 14</td><td>Port 13</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Digital In</td></tr><tr><td>Default</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td></td></tr></table> 0 = Condition False 1 = Condition True		Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In	Default	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
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		Default	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1																																								
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																											
327	Manual Ref Mask  Manual Reference Mask Enables/disables ports to control the speed reference while in Manual Mode. When a port is commanding manual mode, the reference is forced to the commanding port (or alternate source selected by P328 [Alt Man Ref Sel]), if the respective bit in this parameter is set. Options <table><tr><td></td><td>Reserved</td><td>Port 14</td><td>Port 13</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Digital In</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td></td></tr></table> 0 = Condition False 1 = Condition True		Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0					
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Default	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1																																										
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																											
328	Alt Man Ref Sel  Alternate Manual Reference Select Provides a way to select a speed reference source when in manual mode, that is different than the port which is actuating the manual request. Specifies the port to be used for the reference. The default setting (0) results in the actuating port being the one that is used for the manual reference.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer																																																							
329	Alt Man Ref AnHi Alternate Manual Reference Analog High Hi scale for the alternate manual speed reference when P328 [Alt Man Ref Sel] is connected to an Analog Input.	Units: Hz RPM Default: P520 Min/Max: P521 / P520	RW	Real																																																							
330	Alt Man Ref AnLo Alternate Manual Reference Analog Low Lo scale for the alternate manual speed reference when P328 [Alt Man Ref Sel] is connected to an Analog Input.	Units: Hz RPM Default: 0 Min/Max: P521 / P520	RW	Real																																																							
331	Manual Preload Manual Preload Enables/disables automatic preloading of the “Auto” speed reference into a HIM when the HIM has been granted Manual control. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Reserved</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td></td></tr></table> 0 = Condition False 1 = Condition True		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 3	Port 2	Port 1	Reserved	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0					
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Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																											

File	Group	No.	Name Description	Values	Read-Write	Data Type
DRIVE CFG	Drive Memory	336	Reset Meters Reset Meters Resets selected meters to zero.	Default: 0 = "Ready" Options: 0 = "Ready" 1 = "MWH and kWh" 2 = "Elapsed Time"	RW	32-bit Integer

File	Group	No.	Name Description	Values		Read-Write	Data Type										
DRIVE CFG	Start Features	345	Start At PowerUp  Start At Power Up Enables/disables a feature to issue a Start or Run command and automatically resume running at commanded speed after drive input power is restored. Requires a digital input configured for Run or Start and a valid start contact.	Default:	0 = "Disabled"	RW	32-bit Integer										
				Options:	0 = "Disabled" 1 = "Enabled"												
		 ATTENTION: Equipment damage and/or personal injury may result if this parameter is used in an inappropriate application. Do not use this function without considering applicable local, national and international codes, standards, regulations or industry guidelines.															
		346	PowerUp Delay Power Up Delay Defines the programmed delay time, in seconds, before a start command is accepted after power up.	Units:	Secs	RW	Real										
				Default:	0.00												
		Min/Max:	0.00 / 10800.00														
DRIVE CFG	Start Features	347	Auto Retry Fault Automatic Retry Fault Enables Retries Exhausted fault action.														
		Options															
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	AtmpsExhstd
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
					0 = Condition False												
					1 = Condition True												
DRIVE CFG	Start Features	348	Auto Rstrt Tries Automatic Restart Tries Sets the maximum number of times the drive attempts to reset a fault and restart.	Default:	0	RW	Real										
				Min/Max:	0 / 9												
		 ATTENTION: Equipment damage and/or personal injury may result if this parameter is used in an inappropriate application. Do not use this function without considering applicable local, national and international codes, standards, regulations or industry guidelines.															
		349	Auto Rstrt Delay Automatic Restart Delay Sets the time between restart attempts when 348 [Auto Rstrt Tries] is set to a value other than zero.	Units:	Secs	RW	Real										
				Default:	1.00												
		Min/Max:	0.50 / 30.00														

File	Group	No.	Name Description	Values	Read-Write	Data Type																									
DRIVE CFG	Start Features	350	 Sleep Wake Mode Sleep Wake Mode Enables/disables the Sleep/Wake function. Important: When enabled, the following conditions must be met: - A proper value must be programmed for 352 [Sleep Level] and 354 [Wake Level]. - A sleep / wake reference must be selected in 351 [SleepWake RefSel]. - At least one of the following must be programmed (and input closed) in P155 [DI Enable] or P163 [DI Run].	Default: 0 = "Disabled" Options: 0 = "Disabled" 1 = "Direct" (Enabled) 2 = "Invert" (Enabled) ⁽⁷⁾	RW	32-bit Integer																									
		 ATTENTION: Enabling the Sleep/Wake function can cause unexpected machine operation during the Wake mode. Equipment damage and/or personal injury can result if this parameter is used in an inappropriate application. Do Not use this function without considering the information below. In addition, all applicable local, national, and international codes, standards, regulations, or industry guidelines must be considered.																													
		<table><tr><th></th><th>After Power-Up</th><th colspan="2">After a Drive Fault</th><th>After a Stop Command</th></tr><tr><th>Input</th><th></th><th>Reset by Stop-CF, HIM or TB</th><th>Reset by Clear Faults (TB)</th><th>HIM or TB</th></tr><tr><td>Stop</td><td>Stop Closed Wake Signal</td><td>Stop Closed Wake Signal New Start or Run Cmd. ⁽⁴⁾</td><td>Stop Closed Wake Signal</td><td>Stop Closed Direct Mode Analog Sig. > Sleep Level ⁽⁶⁾ Invert Mode Analog Sig. < Sleep Level ⁽⁶⁾ New Start or Run Cmd. ⁽⁴⁾</td></tr><tr><td>Enable</td><td>Enable Closed Wake Signal ⁽⁴⁾</td><td>Enable Closed Wake Signal New Start or Run Cmd. ⁽⁴⁾</td><td>Enable Closed Wake Signal</td><td>Enable Closed Direct Mode Analog Sig. > Sleep Level ⁽⁶⁾ Invert Mode Analog Sig. < Sleep Level ⁽⁶⁾ New Start or Run Cmd. ⁽⁴⁾</td></tr><tr><td>Run Run For. Run Rev.</td><td>Run Closed Wake Signal</td><td>New Run Cmd. ⁽⁵⁾ Wake Signal</td><td>Run Closed Wake Signal</td><td>New Run Cmd. ⁽⁵⁾ Wake Signal</td></tr></table>						After Power-Up	After a Drive Fault		After a Stop Command	Input		Reset by Stop-CF, HIM or TB	Reset by Clear Faults (TB)	HIM or TB	Stop	Stop Closed Wake Signal	Stop Closed Wake Signal New Start or Run Cmd. ⁽⁴⁾	Stop Closed Wake Signal	Stop Closed Direct Mode Analog Sig. > Sleep Level ⁽⁶⁾ Invert Mode Analog Sig. < Sleep Level ⁽⁶⁾ New Start or Run Cmd. ⁽⁴⁾	Enable	Enable Closed Wake Signal ⁽⁴⁾	Enable Closed Wake Signal New Start or Run Cmd. ⁽⁴⁾	Enable Closed Wake Signal	Enable Closed Direct Mode Analog Sig. > Sleep Level ⁽⁶⁾ Invert Mode Analog Sig. < Sleep Level ⁽⁶⁾ New Start or Run Cmd. ⁽⁴⁾	Run Run For. Run Rev.	Run Closed Wake Signal	New Run Cmd. ⁽⁵⁾ Wake Signal	Run Closed Wake Signal	New Run Cmd. ⁽⁵⁾ Wake Signal
			After Power-Up	After a Drive Fault		After a Stop Command																									
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Enable	Enable Closed Wake Signal ⁽⁴⁾	Enable Closed Wake Signal New Start or Run Cmd. ⁽⁴⁾	Enable Closed Wake Signal	Enable Closed Direct Mode Analog Sig. > Sleep Level ⁽⁶⁾ Invert Mode Analog Sig. < Sleep Level ⁽⁶⁾ New Start or Run Cmd. ⁽⁴⁾																											
Run Run For. Run Rev.	Run Closed Wake Signal	New Run Cmd. ⁽⁵⁾ Wake Signal	Run Closed Wake Signal	New Run Cmd. ⁽⁵⁾ Wake Signal																											
(1) When power is cycled, if all of the above conditions are present after power is restored, restart will occur. (2) If all of the above conditions are present when [Sleep-Wake Mode] is "enabled," the drive will start. (3) The active speed reference. The Sleep/Wake function and the speed reference may be assigned to the same input. (4) Command must be issued from HIM, TB, or network. (5) Run Command must be cycled. (6) Signal does not need to be greater than wake level. (7) For Invert function, refer to [Analog In x Loss].																															
351	 SleepWake RefSel Sleep Wake Reference Select Selects the source of the input controlling the Sleep-Wake function.	Default: 0 (Disabled) Min/Max: 0 / 159999	RW	32-bit Integer																											
352	Sleep Level Sleep Level Defines the analog input level that will stop the drive.	Units: VAC, P351 = 0 (Disabled) VAC or mA, P351 = not 0 (Port X Device Jumper Setting) Default: 5.00 VAC (P351 = 0) 5.00 VAC / 0.00 mA (Port X Device Jumper Setting) Min/Max: 0.00 / 10.00 VAC 0.00 / 20.00 mA	RW	Real																											
353	Sleep Time Sleep Time Defines the amount of time at or below 352 [Sleep Level] before a Stop is issued.	Units: Secs Default: 0.00 Min/Max: 0.00 / 1000.00	RW	Real																											

File	Group	No.	Name Description	Values	Read-Write	Data Type
DRIVE CFG	Start Features	354	Wake Level Wake Level Defines the analog input level that will start the drive.	Units: VAC, P351 = 0 (Disabled) VAC or mA, P351 = not 0 (Port X Device Jumper Setting) Default: 6.00 VAC (P351 = 0) 6.00 VAC / 12.00 mA (Port X Device Jumper Setting) Min/Max: 0.00 / 10.00 VAC 0.00 / 20.00 mA	RW	Real
		355	Wake Time Wake Time Defines the amount of time at or above 354 [Wake Level] before a Start is issued.	Units: Secs Default: 0.00 Min/Max: 0.00 / 1000.0	RW	Real
		356	FlyingStart Mode Flying Start Mode Enables/disables the function which reconnects to a spinning motor at actual RPM when a start command is issued.	Default: 0 = "Disabled" Options: 0 = "Disabled" 1 = "Enhanced"	RW	32-bit Integer
		357	FS Gain Flying Start Gain Proportional term used in the current regulator which controls the reconnect function.	Default: 1200.0 Min/Max: 0.0 / 10000.0	RW	Real
		358	FS Ki Flying Start Intergal Gain Integral term used in the current regulator which controls the reconnect function.	Default: 60.0 Min/Max: 0.0 / 1000.0	RW	Real
		359	FS Speed Reg Ki Flying Start Speed Regulator Intergal Gain Integral term used in the speed regulator which controls the reconnect function.	Default: 100.0 Min/Max: 0.0 / 10000.0	RW	Real
		360	FS Speed Reg Kp Flying Start Speed Regulator Proportional Gain Proportional term used in the speed regulator which controls the reconnect function.	Default: 75.0 Min/Max: 0.0 / 100000.0	RW	Real
		361	FS Excitation Ki Flying Start Excitation Intergal Gain Integral term used in the current regulator which controls the excitation function when the need is determined by the reconnect function.	Default: 60.0 Min/Max: 0.0 / 32767.0	RW	Real
		362	FS Excitation Kp Flying Start Excitation Proportional Gain Proportional term used in the current regulator which controls the excitation function when the need is determined by the reconnect function.	Default: 1200.00 Min/Max: 0.0 / 32767.0	RW	Real
		363	FS Reconnect Dly Flying Start Reconnect Delay Delay time used between the issued start command and the start of the reconnect function.	Units: Secs Default: 50.00 Min/Max: 0.10 / 10000.00	RW	Real
		364	FS Msrmt CurLvl Flying Start Measurement Current Level Level of the current used during the measurement stage of the reconnect function.	Default: 44.97 Min/Max: 0.00 / 4096.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
DRIVE CFG	Braking Features	370 371	Stop Mode A Stop Mode B Stop Mode A, B Method of stopping the drive when a stop command is given. Normal Stop command and the RUN input changing from true to false will command a Normal Stop. "Coast" (0) – Power removed from motor, motor coasts to zero. "Ramp" (1) – Decelerates to zero speed at the decel rate. "Ramp to Hold" (2) – Decelerates to zero speed at the decel rate, followed by DC braking until the next start sequence. "DC Brake" (3) – DC braking is immediately applied (does not follow programmed decel ramp). "DCBrkAutoOff" (4) – Applies DC braking until zero speed is reached or DC brake time is reached, whichever is shorter. "Current Lmt" (5) – Max torque / current applied until zero speed "Fast Brake" (6) – High slip braking for maximum braking performance above base speed.	Default: 1 = "Ramp" 0 = "Coast" Options: 0 = "Coast" 1 = "Ramp" 2 = "Ramp to Hold" 3 = "DC Brake" 4 = "DCBrkAutoOff" 5 = "Current Lmt" 6 = "Fast Brake"	RW	32-bit Integer
		372 373	Bus Reg Mode A Bus Reg Mode B Bus Regulation Mode A, B Method and sequence of the DC bus regulator voltage. Choices are dynamic brake, frequency adjust or both. Sequence is determined by programming or digital input to the terminal block. <u>Dynamic Brake Setup</u> If a dynamic brake resistor is connected to the drive, both of these parameters must be set to either option 2, 3 or 4.	Default: 1 = "Adjust Freq" 4 = "Both-Frq 1st" Options: 0 = "Disabled" 1 = "Adjust Freq" 2 = "Dyn Brake" 3 = "Both-DB 1st" 4 = "Both-Frq 1st"	RW	32-bit Integer
		 ATTENTION: The drive does not offer protection for externally-mounted brake resistors. A risk of fire exists if external braking resistors are not protected. External resistor packages must be self-protected from over-temperature or the protective circuit shown in Figure C.1 on page C-2 (or equivalent) must be supplied.				
		374	Bus Reg Lvl Cnfg Bus Regulation Level Configuration Selects the reference used to determine of bus voltage regulation level for the bus voltage regulator and the reference used for the dynamic brake. "Bus Memory" (0) – References are determined based on P12 [DC Bus Memory]. "BusReg Level" (1) – References are determined based on the voltage set in the bus regulator level parameter P375 [Bus Reg Level]. If coordinated operation of the dynamic brakes of a common bus system is desired, use this selection and set the P375 [Bus Reg Level] to coordinate the brake operation of the common bus drives.	Default: 0 = "Bus Memory" Options: 0 = "Bus Memory" 1 = "BusReg Level"	RW	32-bit Integer
		375	Bus Reg Level Bus Regulation Level Sets the "turn-on" bus voltage level for the bus voltage regulator and the dynamic brake. The voltage of turn-on is determined from the drive's high voltage class voltage and the percentage set in the Bus Reg Level. e.g. on a 400-480 VAC drive where the Bus Reg Level is set to 111.0% then the bus voltage regulator level would be: $(111.0\% / 100) \times \sqrt{2} \times 480 = 753.5$ VDC.	Units: VDC Default: $P20 [\text{Rated Volts}] \times 1.6306$ Min/Max: $P20 \times 1.6306 / P20 \times 1.695$	RW	Real
		376	Bus Limit Kp Bus Limit Proportional Gain Not functional when any of the FV motor control modes are selected.	Units: A/V Default: 1170.0 Min/Max: 0.0 / 1000000.0	RW	Real
		377	Bus Limit Kd Bus Limit Derivative Gain Not functional when any of the FV motor control modes are selected.	Units: Secs Default: 152.0 Min/Max: 0.0 / 1000000.0	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
DRIVE CFG	Braking Features	378	Bus Limit ACR Ki Bus Limit Active Current Regulator Integral Gain Not functional when any of the FV motor control modes are selected.	Default: 2045.0 Min/Max: 0.0 / 50000.0	RW	Real
		379	Bus Limit ACR Kp Bus Limit Active Current Regulator Proportional Gain Not functional when any of the FV motor control modes are selected.	Units: Hz/A Default: 524.0 Min/Max: 0.0 / 100000.0	RW	Real
		380	Bus Reg Ki Bus Regulator Integral Gain Integral gain for the bus voltage regulator. Sets the responsiveness of the bus voltage regulator.	Default: 100.000 Min/Max: 0.000 / 65535.000	RW	Real
		381	Bus Reg Kp Bus Regulator Proportional Gain Proportional gain for the bus voltage regulator. Sets the responsiveness of the bus voltage regulator.	Default: 10.000 Min/Max: 0.000 / 65535.000	RW	Real
		382	DB Resistor Type Dynamic Brake Resistor Type Selects whether the internal or external DB protection will be used. Important: For drive frames 0...3 only one DB resistor can be connected to the drive. Connecting both an internal and external resistor is likely to cause drive damage. If a dynamic brake resistor is connected to the drive, P372 [Bus Reg Mode A] and P373 [Bus Reg Mode B] must be set to either option 2, 3, or 4; otherwise the dynamic brake will not turn on.	Default: 0 = "Internal" Options: 0 = "Internal" 1 = "External"	RW	32-bit Integer
		 ATTENTION: Equipment damage may result if a drive mounted (internal) resistor is installed and this parameter is set to "External." Thermal protection for the internal resistor will be disabled, resulting in possible device damage.				
		383	DB Ext Ohms Dynamic Brake External Ohms Calculates the maximum negative torque available from the dynamic brake and is used for the external resistor dynamic brake protection.	Units: Ohms Default: Based on Drive Rating Min/Max: Internal / 10000	RW	Real
		384	DB Ext Watts Dynamic Brake External Watts Sets the continuous rated power reference for the external dynamic brake resistor. Only valid when an external dynamic brake resistor is selected (P382 [DB Resistor Type] = 1 "External"). The DB continuous watts are used in the dynamic brake thermal protection algorithm. Important: If customer-supplied protection is to be used in place of the drive's calculated resistor thermal protection, set the [DB Ext Watts] to its maximum value.	Units: Watt Default: 100.00 Min/Max: 1.00 / 500000.00	RW	Real
		385	DB ExtPulseWatts Dynamic Brake External Pulse Watts Sets the thermal transient response of the external dynamic brake resistor defined by the maximum allowable power to the dynamic brake resistor for 1 second without exceeding the resistor's element temperature. This parameter is only valid when an external dynamic brake resistor is selected (P382 [DB Resistor Type] = 1 "External"). If this value is not available from the resistor vendor it can be approximated by 1 or 2 below: 1. [DB ExtPulseWatts] = 75,000 x weight (lbs), where weight is the weight of the resistor wire in pounds (not the weight of the entire resistor). 2. [DB ExtPulseWatts] = Time Constant x Brake Watts, where the Time Constant equals the amount of time to reach 63% of its rated temperature while the maximum power is applied to the resistor and Brake Watts is the maximum continuous power rating of the resistor. Important: If customer supplied protection is to be used in place of the drive's calculated resistor thermal protection, set the [DB ExtPulse Watts] to its maximum value.	Units: Watt Default: 2000.00 Min/Max: 1.00 / 100000000.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
DRIVE CFG	Braking Features	388	Flux Braking En Flux Braking Enable Displays a value of 1 when flux braking is active and 0 when flux braking is not active.	Default: 0 = "Disabled" Options: 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		389	Flux Braking Lmt Flux Braking Limit Sets the limit on the desired motor voltage during flux braking as a percent of P25 [Motor NP Volts].	Units: % Default: 125.00 Min/Max: 100.00 / 250.00	RW	Real
		390	Flux Braking Ki Flux Braking Integral Gain Flux braking controller integral gain.	Default: 10000.0 Min/Max: 0.0 / 1000000.0	RW	Real
		391	Flux Braking Kp Flux Braking Proportional Gain Flux braking controller proportional gain.	Default: 100.0 Min/Max: 0.0 / 1000000.0	RW	Real
		393	 DC Brake Lvl Sel DC Brake Level Select Sets link to source used for P394 [DC Brake Level].	Default: 394 Min/Max: 1 / 159999	RW	32-bit Integer
		394	DC Brake Level DC Brake Level Defines the DC brake current level injected into the motor when [Stop Mode x] = 3 "DC Brake." This also sets the braking current level when 6 "Fast Stop" is selected. The DC braking voltage used in this function is created by a PWM algorithm and may not generate the smooth holding force needed for some applications.	Units: Amps Default: [Rated Amps] Min/Max: P21 [Rated Amps] x 0.01 / Based on Drive Rating	RW	Real
		 ATTENTION: If a hazard of injury due to movement of equipment or material exists, an auxiliary mechanical braking device must be used. ATTENTION: This feature should not be used with synchronous or permanent magnet motors. Motors may be demagnetized during braking.				
		395	DC Brake Time DC Brake Time Sets the amount of time DC brake current is "injected" into the motor. Not used when [Stop Mode x] = 2 "Ramp to Hold" which will apply DC braking continuously.	Units: Secs Default: 0.00 Min/Max: 0.00 / 90.00	RW	Real
		396	DC Brake Ki DC Brake Integral Gain Sets the integral term used in the current regulator which controls the DC Brake function.	Default: 10.0 Min/Max: 0.0 / 1000.0	RW	Real
		397	DC Brake Kp DC Brake Proportional Gain Sets the proportional term used in the current regulator which controls the DC Brake function.	Default: 1000.0 Min/Max: 0.0 / 10000.0	RW	Real
		398	DC Brk Vq Filtr DC Brake Vq Filter Sets the level of filtering used on the Vq signal when [Stop Mode x] = 4 "DCBrkAutoOff."	Default: 250.0 Min/Max: 50.0 / 2000.0	RW	Real
		399	DC Brk Vd Filtr DC Brake Vd Filter Sets the level of filtering used on the Vd signal when [Stop Mode x] = 4 "DCBrkAutoOff."	Default: 250.0 Min/Max: 50.0 / 2000.0	RW	Real
		400	Fast Braking Ki Fast Braking Integral Gain Sets the integral term used in the speed regulator which controls the Fast Braking function.	Default: 0.10 Min/Max: 0.00 / 10.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
DRIVE CFG	Braking Features	401	Fast Braking Kp Fast Braking Proportional Gain Sets the proportional term used in the speed regulator which controls the Fast Braking function.	Default: 0.0015 Min/Max: 0.0000 / 10.0000	RW	Real
		402	Brake Off Adj 1 Brake Off Adjustment 1 When Fast Braking is the selected Stop Mode, this parameter sets the power sensitivity to transition from Fast Braking to DC Brake. When DC Brake w/Auto ShutOff is selected, this parameter sets the level sensitivity for shut off.	Default: 1.00 Min/Max: 0.01 / 5.00	RW	Real
		403	Brake Off Adj 2 Brake Off Adjustment 2 When Fast Braking is the selected Stop Mode, this parameter sets the frequency sensitivity to transition from Fast Braking to DC Brake. When DC Brake w/Auto ShutOff is selected, this parameter sets the time sensitivity for shut off.	Default: 1.00 Min/Max: 0.01 / 5.00	RW	Real
		409	Dec Inhibit Actn Deceleration Inhibit Action Configures the response to a Decel Inhibit condition, which occurs when the drive is not decelerating due to bus voltage regulation.	Default: 3 = "FltCoastStop" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop"	RW	32-bit Integer

Drive Protection File

File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Motor Overload	410	Motor OL Actn Motor Overload Action Configures the response to a motor overload condition.	Default: 3 = "FltCoastStop" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		411	Mtr OL at Pwr Up Motor Overload At Power Up Selects the mode to use for initial value of the motor overload counter, upon drive power-up.	Default: 0 = "Assume Cold" Options: 0 = "Assume Cold" 1 = "UseLastValue" 2 = "RealTimeClk"	RW	32-bit Integer
		412	Mtr OL Alarm Lvl Motor Overload Alarm Level Sets the level of P418 [Mtr OL Counts] for which a motor overload alarm will occur. Useful to provide warning prior to the drive taking action that is selected by P410 [Motor OL Actn]. This alarm level is different than , and independent of, the "Alarm" action selected by P410 [Motor OL Actn].	Units: % Default: 0.00 Min/Max: 0.00 / 100.00	RW	Real
		413	Mtr OL Factor Motor Overload Factor Sets the minimum level of current (in percent or P26 [Motor NP Amps]) that causes the motor overload counter to increment. Current levels below this value will decrement the overload counter. For example, a service factor of 1.15 implies continuous operation up to 115% of nameplate motor current.	Default: 1.00 Min/Max: 0.20 / 2.00	RW	Real
		414	Mtr OL Hertz Motor Overload Hertz Selects the output frequency below which the motor operating current is derated (more sensitive) to account for the reduced self-cooling capability of typical motors, operating at slower speeds. For motors with extra low speed cooling capacity (e.g. 10:1 or blower cooled), reduce this setting to take full advantage of the motor being used.	Units: Hz Default: 20.00 Min/Max: 0.00 / 4096	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Motor Overload	415	Mtr OL Reset Lvl Motor Overload Reset Level Sets the level that resets a motor overload condition, and allows a fault (if selected as the motor overload action) to be manually reset.	Units: % Default: 0.00 Min/Max: 0.00 / 100.00	RW	Real
		416	MtrOL Reset Time Motor Overload Reset Time Displays the time it will take to restart the drive after a motor overload fault has occurred and the value in P418 [Mtr OL Counts] is less than the P415 [Mtr OL Reset Lvl].	Units: Secs Default: 0.00 Min/Max: -/+99999.00	RW	Real
		418	Mtr OL Counts Motor Overload Counts Accumulated percentage of motor overload. Continuously operating the motor over 100% of the motor overload setting will increase this value to 100% and cause the action selected in P410 [Motor OL Actn] to be taken.	Units: % Default: 0.00 Min/Max: 0.0 / 100.00	RW	Real
		419	Mtr OL Trip Time Motor Overload Trip time Displays the inverse of the motor overload time, equal to the number of seconds before P418 [Mtr OL Counts] reaches 100%, and the motor overload action is taken.	Units: Secs Default: 99999 Min/Max: 0 / 99999	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Load Limits	420	Drive OL Mode  Drive Overload Mode Selects the action to take when the drive detects that it is being overloaded. Reducing current limit and / or PWM frequency may allow the drive to continue running without faulting. When using a sine wave output filter, set this parameter to 1 "Reduce CLmt" or 0 "Disabled."	Default: 3 = "Both-PWM1rst" Options: 0 = "Disabled" 1 = "Reduce CLmt" 2 = "Reduce PWM" 3 = "Both-PWM1rst"	RW	32-bit Integer
		421	Current Lmt Sel Current Limit Select Selects the source for the current limit value. When the load is large enough to cause current that equals or exceeds this value, the output frequency will automatically adjust (increase or decrease, as required) to attempt limiting the output current to this value.	Default: 422 Options: 1 / 159999	RW	32-bit Integer
		422 423	Current Limit 1 Current Limit 2 Current Limit 1, 2 Constant values that can be used possible as sources for P421 [Current Lmt Sel].	Units: Amps Default: Based on Drive Rating Min/Max: Based on Drive Rating	RW	Real
		424	Active Cur Lmt  Active Current Limit Displays that is actively being used, including the automatic foldback effect from the drive overload function (see P420 [Drive OL Mode]).	Units: Amps Default: 0.00 Min/Max: -/+P26 [Motor NP Amps] x 8	RW	Real
		425	Current Rate Lmt Current Rate Limit Sets the largest allowable rate of change for the torque producing current reference (Iq). This number is scaled in percent of rated motor current for every 250 microseconds.	Units: % Default: 400.00 Min/Max: 1.00 / 800.00	RW	Real
		426	Regen Power Lmt Regenerative Power Limit Sets the limit for power flow from the motor to the drive (regenerating).	Units: % Default: -50.00 Min/Max: -800.00 / 0.00	RW	Real
		427	Motor Power Lmt Motor Power Limit Sets the limit for power flow from the drive to the motor (motoring).	Units: % Default: 200.00 Min/Max: 0.00 / 800.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																					
PROTECTION	Load Limits	428	Current Limit Kd Current Limit Derivative Gain Derivative gain for the current limit function. This parameter is not functional when any of the FV motor control modes are selected.	Units: Secs Default: 760.0 Min/Max: 0.0 / 1000000.0	RW	Real																																																					
		429	Current Limit Ki Current Limit Integral Gain Integral gain for the current limit function. This parameter is not functional when any of the FV motor control modes are selected.	Default: 680.0 Min/Max: 0.0 / 10000.0	RW	Real																																																					
		430	Current Limit Kp Current Limit Proportional Gain Proportional gain for the current limit function. This parameter is not functional when any of the FV motor control modes are selected.	Units: Hz/A Default: 290.0 Min/Max: 0.0 / 1000000.0	RW	Real																																																					
		431	Id Lo FreqCur Kp Id Low Frequency Current Kp Current limit proportional gain active at very low operating frequencies. This parameter is not functional when any of the FV motor control modes are selected.	Units: V/A Default: 50.0 Min/Max: 0.0 / 100000.0	RW	Real																																																					
		432	Iq Lo FreqCur Kp Iq Low Frequency Current Kp Current limit proportional gain active at very low operating frequencies. This parameter is not functional when any of the FV motor control modes are selected.	Units: V/A Default: 50.0 Min/Max: 0.0 / 100000.0	RW	Real																																																					
		433	Jerk Gain Jerk Gain Allows you to adjust the amount of S Curve or "Jerk" applied to the Accel/Decel rate.	Default: 5200.0 Min/Max: 0.0 / 1000000000.0	RW	Real																																																					
		434	Shear Pin Cfg Shear Pin Configure Configures operation of the shear pin function. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Shear2NoAcc</td><td>Shear1NoAcc</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td>0</td></tr></table> Bit 0 "Shear1NoAcc" – 0 = Active during acceleration, 1 = Ignore during acceleration Bit 1 "Shear2NoAcc" – 0 = Active during acceleration, 1 = Ignore during acceleration		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Shear2NoAcc	Shear1NoAcc	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Shear2NoAcc	Shear1NoAcc																																								
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0																																								
435	Shear Pin 1 Actn Shear Pin 2 Actn Shear Pin 1 Action Shear Pin 2 Action Configures the action to take when the output current is greater than or equal to [Shear PinX Level] for the amount of time set in [Shear Pin X Time]. These two independent shear pin functions can be set up to achieve the equivalent of external overloads that have "stall" and "jam" indication.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer																																																							
436	Shear Pin1 Level Shear Pin2 Level Shear Pin 1 Level Shear Pin 2 Level Sets the value of current which will activate the shear pin function (see [Shear Pin X Actn]).	Units: Amps Default: P21 [Rated Amps] Min/Max: 0.0 / P21 [Rated Amps] x 1.5	RW	Real																																																							
437	Shear Pin 1 Time Shear Pin 2 Time Shear Pin 1 Time Shear Pin 2 Time Sets the time associated with activation of the shear pin function (see [Shear Pin X Actn]).	Units: Secs Default: 0.00 Min/Max: 0.00 / 30.00	RW	Real																																																							

File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Load Limits	441	Load Loss Action Load Loss Action Configures the action to take when the load is less than or equal to P442 [Load Loss Level] for the amount of time set in P443 [Load Loss Time].	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		442	Load Loss Level Load Loss Level Sets the percentage of motor nameplate torque (absolute value) associated with activation of the load loss function (see P441 [Load Loss Action]).	Units: % Default: 200.00 Min/Max: 0.00 / 800.00	RW	Real
		443	Load Loss Time Load Loss Time Sets the time associated with activation of the load loss function (see P441 [Load Loss Action]).	Units: Secs Default: 0.00 Min/Max: 0.00 / 300.00	RW	Real
		444	OutPhaseLossActn Output Phase Loss Action Selects action to take if output phase loss is detected.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		445	Out PhaseLossLvl Output Phase Loss Level Sets the threshold level which is used to determine an output phase loss condition.	Default: 200 Min/Max: 0 / 1000	RW	32-bit Integer
		449	Power Loss Actn Power Loss Action Configures the drive's response to a power loss timeout condition.	Default: 1 = "Alarm" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop"	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Power Loss	450 453	Pwr Loss Mode A Pwr Loss Mode B Power Loss Mode A, B Configures the drive's response to a loss of input power as sensed by a drop in bus voltage. The bus voltage drop is specified in [Pwr Loss X Level] and compared to the bus voltage memory P12 [DC Bus Memory].	Default: 0 = "Coast" Options: 0 = "Coast" 1 = "Decel" 2 = "Continue"	RW	32-bit Integer
		451 454	Pwr Loss A Level Pwr Loss B Level Power Loss Mode A, B Level Sets the bus voltage level at which ride-through begins and modulation ends. When bus voltage falls below this level, the drive prepares for an automatic restart. Enter a percentage of the bus voltage derived from the high voltage setting for the voltage class. For example: on a 400/480V drive, $0.221 \times 480 \text{ VAC} \times \sqrt{2} = 150 \text{ VDC}$	Units: VDC Default: P20 [Rated Volts] x 0.3913 Min/Max: 0.0 / P20 [Rated Volts] x 1.41	RW	Real
		452 455	Pwr Loss A Time Pwr Loss B Time Power Loss Mode A, B Time Sets the time that the drive will remain in power loss mode before a fault is detected.	Units: Secs Default: 2.00 Min/Max: 0.00 / 60.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Power Loss	456	PwrLoss RT BusKp Power Loss Ride Through Bus Kp Proportional gain that adjusts the response of the bus regulator when power loss ride through is enabled and detected. This parameter is not functional when any of the FV motor control modes are selected.	Units: A/V Default: 585.0 Min/Max: 0.0 / 1000000.0	RW	Real
		457	PwrLoss RT BusKd Power Loss Ride Through Bus Kd Derivative gain that adjusts the response of the bus regulator when power loss ride through is enabled and detected. This parameter is not functional when any of the FV motor control modes are selected.	Units: Secs Default: 50.0 Min/Max: 0.0 / 1000000.0	RW	Real
		458	PwrLoss RT ACRKp Power Loss Ride Through Active Current Regulator Kp Proportional gain that adjusts the response of the active current regulator portion of the bus regulator when power loss ride through is enabled and detected. This parameter is not functional when any of the FV motor control modes are selected.	Units: Hz/A Default: 524.0 Min/Max: 0.0 / 1000000.0	RW	Real
		459	PwrLoss RT ACRKi Power Loss Ride Through Active Current Regulator Ki Integral gain that adjusts the response of the active current regulator portion of the bus regulator when power loss ride through is enabled and detected. This parameter is not functional when any of the FV motor control modes are selected.	Units: Hz/A Default: 2045.0 Min/Max: 0.0 / 50000.0	RW	Real
		460	UnderVltg Action Under Voltage Action Configures the drive's response to an under voltage event.	Default: 3 = "FltCoastStop" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		461	UnderVltg Level Under Voltage Level AC line voltage level below which an undervoltage event occurs.	Units: VDC Default: P20 [Rated Volts] x 0.3913 Min/Max: 0.00 / P20 [Rated Volts] x 1.41	RW	Real
		462	InPhase LossActn In Phase Loss Action Selects action to take if an Input Phase loss is detected.	Default: 3 = "FltCoastStop" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		463	InPhase Loss Lvl In Phase Loss Level Sets the threshold level which is used to determine an Input phase loss condition.	Default: 325 Min/Max: 10 / 32767	RW	32-bit Integer
		464	DC Bus Mem Reset Direct Current Bus Memory Reset Forces a manual update to P12 [DC Bus Memory], which is automatically initialized upon power-up and continually updated during normal operation. A manual reset is rarely required, but may occur when when input voltage is abnormally high or low for an extended period of time followed by a fast return to a nominal value. A transition from 0 to 1 will cause an update, only if the drive is not regenerating and not firing the dynamic brake. The update will be ignored if not completed with 30 seconds of the command.	Default: 0 = "Disabled" Options: 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Ground Fault	466	Ground Warn Actn Ground Warning Action Selects ground current event configuration.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	
		467	Ground Warn Lvl Ground Warning Level Sets the level at which a ground warning alarm will occur.	Units: Amps Default: 3.0 Min/Max: 1.0 / 5.0	RW	

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																	
PROTECTION	Predictive Maint	469	PredMaint Status Predictive Maintenance Status Status of predictive maintenance elapsed life relative to the programmed event level. A value of 1 = event level has been exceeded. Bit 15 is a master bit which = 1 when 1 or more individual bits = 1. Options <table><tr><td></td><td>Master</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Mch Lube</td><td>Mch Bearing</td><td>Mtr Lube</td><td>Mtr Bearing</td><td>Internal Fan</td><td>Heatsink Fan</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True		Master	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Mch Lube	Mch Bearing	Mtr Lube	Mtr Bearing	Internal Fan	Heatsink Fan	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
			Master	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Mch Lube	Mch Bearing	Mtr Lube	Mtr Bearing	Internal Fan	Heatsink Fan																																					
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																					
		470	PredMaintAmbTemp Predictive Maintenance Ambient Temperature Used to predict cooling fan life, and possibly the life of other temperature dependent components in the future. Changes to this parameter affect the total life and remaining life, meaning that only one temperature can be programmed for the entire life of the drive.	Units: Degrees C Default: 50.00 Min/Max: 0.00 / 50.00	RW	Real																																																	
		471	PredMaint Rst En  Predictive Maintenance Reset Enable Enables [PredMaint Reset] to execute a reset of the selected elapsed life parameter. Any single reset in [PredMaint Reset] will force this parameter back to 0 (disabled), so that only one elapsed life parameter can be reset at a time. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Current Selection Options: 0 = "Disable" 1 = "Enable"	RW	32-bit Integer																																																	
		472	PredMaint Reset  Predictive Maintenance Reset Resets predictive maintenance elapsed life parameters, one at a time. Enabled by P471 [PredMaint Rst En]. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Current Selection Options: 0 = "Ready" 1 = "HS Fan Life" 2 = "InFan Life" 3 = "MtrBrng Life" 4 = "MtrLube Hrs" 5 = "MchBrng Life" 6 = "MchLube Hrs"	RW	32-bit Integer																																																	
488	HSFan Derate Heatsink Fan Derate Derating factor applied to P489 [HSFan TotalLife]. Used to adjust total fan life for poor air quality or vibration.	Default: 1.00 Min/Max: 0.01 / 1.00	RW	Real																																																			
489	HSFan TotalLife Heatsink Fan Total Life Total number of hours expected over the life of the heatsink fans. Calculated as a function of fan manufacturer's life data (from frame rating table), P470 [PredMaintAmbTemp], and P488 [HSFan Derate].	Units: Hrs Default: 0.00 Min/Max: 0.00 / 21,474,836.47 (31 bits)	RW	32-bit Integer																																																			

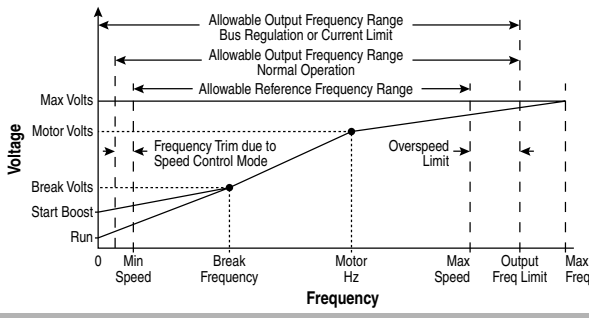
File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Predictive Maint	490	HSFan ElpsdLife Heatsink Fan Elapsed Life Accumulated hours of heatsink fan run time.	Units: Hrs Default: 0.00 Min/Max: 0.00 / 21,474,836.47 (31 bits)	RW	32-bit Integer
		491	HSFan RemainLife Heatsink Fan Remaining Life Remaining number of hours until estimated end of life for heatsink fans, and is the difference between P489 [HSFan TotalLife] and P490 [HSFan ElpsdLife]. All negative values of this parameter need to be treated as excessive use (> 100%), and trigger the appropriate action chosen by P493 [HSFan EventActn].	Units: Hrs Default: 0.00 Min/Max: -21,474,836.48 / 21,474,836.47	RW	32-bit Integer
		492	HSFan EventLevel Heatsink Fan Event Level Percent of total expected heatsink fan life for which an early warning alarm or fault can be programmed.	Units: % Default: 80.000 Min/Max: 0.000 / 100.000	RW	Real
		493	HSFan EventActn Heatsink Fan Event Action Configures the response to a heatsink fan event, which occurs when P492 [HSFan EventLevel] is met or exceeded.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		494	HSFan ResetLog Heatsink Fan Reset Log Total number of resets performed on the P490 [HSFan ElpsdLife] parameter.	Default: 0 Min/Max: 0 / 255 (unsigned 8 bits)	RW	32-bit Integer
		495	InFan Derate Internal Fan Derate Derating factor applied to P496 [InFan TotalLife]. Used to adjust total fan life for poor air quality or vibration.	Default: 1.00 Min/Max: 0.01 / 1.00	RW	Real
		496	InFan TotalLife Internal Fan Total Life Total number of hours expected over the life of the internal stirring fan(s). Calculated as a function of fan manufacturer's life data (from frame rating table) and P470 [PredMaintAmbTemp].	Units: Hrs Default: 0.00 Min/Max: 0.00 / 21,474,836.47 (31 bits)	RW	32-bit Integer
		497	InFan ElpsdLife Internal Fan Elapsed Life Accumulated hours of internal stirring fan run time (Note that frames 6 and 7 run continuously. Frames 2 through 5 are controlled by firmware).	Units: Hrs Default: 0.00 Min/Max: 0.00 / 21,474,836.47 (31 bits)	RW	32-bit Integer
		498	InFan RemainLife Internal Fan Remaining Life Remaining number of hours until estimated end of life for internal stirring fans, and is the difference between P496 [InFan TotalLife] and P497 [InFan ElpsdLife]. All negative values of this parameter need to be treated as excessive use (> 100%), and trigger the appropriate action chosen by P500 [InFan EventActn].	Units: Hrs Default: 0.00 Min/Max: -21,474,836.48 / 21,474,836.47	RW	32-bit Integer
		499	InFan EventLevel Internal Fan Event Level Percent of total expected internal stirring fan life for which an early warning alarm or fault can be programmed.	Units: % Default: 80.000 Min/Max: 0.000 / 100.000	RW	Real
		500	InFan EventActn Internal Fan Event Action Configures the response to an internal stirring fan event, which occurs when P499 [InFan EventLevel] is met or exceeded.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		501	InFan ResetLog Internal Fan Reset Log Total number of resets performed on the P497 [InFan ElpsdLife] parameter.	Default: 0 Min/Max: 0 / 255 (unsigned 8 bits)	RW	32-bit Integer
		502	 MtrBrngTotalLife Motor Bearing Total Life Total number of hours expected over the life of the motor bearings.	Units: Hrs Default: 0.00 Min/Max: 0.00 / 21,474,836.47 (31 bits)	RW	32-bit Integer

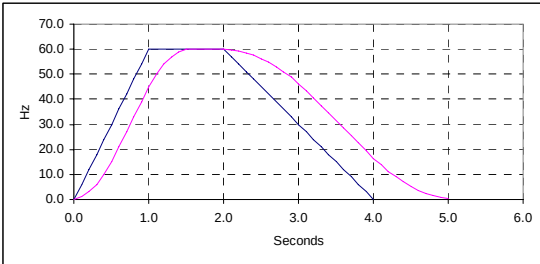
File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Predictive Maint	503	MtrBrngElpsdLife Motor Bearing Elapsed Life Accumulated hours of motor bearing run time. Hours are accumulated any time drive is running greater than zero speed.	Units: Hrs Default: 0.00 Min/Max: 0.00 / 21,474,836.47 (31 bits)	RW	32-bit Integer
		504	MtrBrngRemainLif Motor Bearing Remaining Life Remaining number of hours until estimated end of life for motor bearings, and is the difference between P502 [MtrBrngTotalLife] and P503 [MtrBrngElpsdLife].	Units: Hrs Default: 0.00 Min/Max: -21,474,836.48 / 21,474,836.47	RW	32-bit Integer
		505	MtrBrngEventLvl Motor Bearing Event Level Percent of total expected motor bearing life for which an early warning alarm or fault can be programmed.	Units: % Default: 80.000 Min/Max: 0 / 100.000	RW	Real
		506	MtrBrngEventActn Motor Bearing Event Action Configures the response to a motor bearing event, which occurs when P505 [MtrBrngEventLvl] is met or exceeded.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		507	MtrBrng ResetLog Motor Bearing Reset Log Total number of resets performed on the P503 [MtrBrngElpsdLife] parameter.	Default: 0 Min/Max: 0 / 255 (unsigned 8 bits)	RW	32-bit Integer
		508	 MtrLubeElpsdHrs Motor Lubricant Elapsed Hours Accumulated hours since the most recent lubrication of the motor bearings. Can be reset without restriction.	Units: Hrs Default: 0.00 Min/Max: 0.00 / 21,474,836.47	RW	32-bit Integer
		509	MtrLubeEventLvl Motor Lubricant Event Level Number of hours between scheduled lubrications of the motor bearings. Used for an early warning alarm or fault according to P510 [MtrLubeEventActn]. Event is disabled when set to 0.	Units: Hrs Default: 0.000 Min/Max: 0.000 / 220000000.000	RW	Real
		510	MtrLubeEventActn Motor Lubricant Event Action Configures the response to a motor bearing lubrication event, which occurs when P510 [MtrLubeEventLvl] is met or exceeded.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		511	 MchBrngTotalLife Machine Bearing Total Life Total number of hours expected over the life of the machine bearings.	Units: Hrs Default: Current Value Min/Max: 0 / 21,474,836.47	RW	32-bit Integer
		512	MchBrngElpsdLife Machine Bearing Elapsed Life Accumulated hours of machine bearing run time.	Units: Hours Default: 0.00 Min/Max: 0 / 21,474,836.47	RW	32-bit Integer
		513	MchBrngRemainLif Machine Bearing Remaining Life Remaining number of hours until estimated end of life for machine bearings, and is the difference between Machine Bearing Total Life and Machine Bearing Elapsed Life.	Units: Hrs Default: 0.00 Min/Max: -21,474,836.48 / 21,474,836.47	RW	32-bit Integer
		514	MchBrngEventLvl Machine Bearing Event Level Percent of total expected machine bearing life for which an early warning alarm or fault can be programmed.	Units: % Default: 80.000 Min/Max: 0.000 / 100.000	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
PROTECTION	Predictive Maint	515	MtrBrngEventActn Machine Bearing Event Action Configures the response to a machine bearing event, which occurs when P518 [MchBrngEventLvl] is met or exceeded.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		516	MchBrngResetLog Machine Bearing Reset Log Total number of resets performed on the P512 [MchBrngElpsdLife] parameter.	Default: 0 Min/Max: 0 / 255	RW	32-bit Integer
		517	MchLubeElpsdHrs Machine Lubricant Elapsed Hours  Accumulated machine hours since the most recent lubrication of the machine bearings. Can be reset without restriction.	Units: Hrs Default: 0.00 Min/Max: 0.00 / 21,474,836.47.00	RW	32-bit Integer
		518	MchLube EventLvl Machine Lubricant Event Level Number of hours between scheduled lubrications of the machine bearings. Used for an early warning alarm or fault according to P519 [MchLubeEventActn]. Event is disabled when set to 0.	Units: Hrs Default: 0.000 Min/Max: 0.000 / 220000000.000	RW	Real
		519	MchLubeEventActn Machine Lubricant Event Action Configures the response to a machine bearing lubrication event, which occurs when P518 [MchLube EventLvl] is met or exceeded.	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Continue" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer

Drive Speed Control File

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Limits	520	Max Fwd Speed  Maximum Forward Speed Sets the forward speed high limit. Refer to P524 [Overspeed Limit]. When using an analog input for the speed reference, this parameter is scaled to [Anlg In X Hi].	Units: Hz RPM Default: P27 [Motor NP Hertz] P28 [Motor NP RPM] Min/Max: [Motor NP Hertz] x 0.05 / [Motor NP Hertz] x 16.00 [Motor NP RPM] x 0.05 / [Motor NP RPM] x 16.00	RW	Real
		521	Max Rev Speed  Maximum Reverse Speed Sets the reverse speed low limit. Refer to P524 [Overspeed Limit]. When using an analog input for the speed reference, this parameter is scaled to [Anlg In X Hi].	Units: Hz RPM Default: P27 [Motor NP Hertz] x -1.00 P28 [Motor NP RPM] x -1.00 Min/Max: [Motor NP Hertz] x -16.00 / 0.00 [Motor NP RPM] x -16.00 / 0.00	RW	Real
		522	Min Fwd Speed  Minimum Forward Speed Sets the low limit for speed reference after scaling is applied. Refer to P524 [Overspeed Limit].	Units: Hz RPM Default: 0.00 Min/Max: 0.00 / [Motor NP Hertz] x 16.00 0.00 / [Motor NP RPM] x 16.00	RW	Real
		523	Min Rev Speed  Minimum Reverse Speed Sets the low limit for speed reference after scaling is applied. Refer to P524 [Overspeed Limit].	Units: Hz RPM Default: 0.00 Min/Max: [Motor NP Hertz] x -16.00 / 0.00 [Motor NP RPM] x -16.00 / 0.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Limits	524	Overspeed Limit  Overspeed Limit Sets the incremental amount of the output frequency (above maximum speed: either P520 [Max Fwd Speed] or P521 [Max Rev Speed]) allowable for functions such as slip compensation. Maximum speed + P524 [Overspeed Limit] must be $\leq$ P37 [Maximum Freq]	Units: Hz RPM Default: P27 [Motor NP Hertz] / 6 P28 [Motor NP RPM] / 6 Min/Max: 0.00 / (P27 [Motor NP Hertz] / 3) 0.00 / (P28 [Motor NP RPM] / 6)	RW	Real
						
		525	Zero Speed Limit  Zero Speed Limit Establishes a band around zero speed that is used to determine when the drive considers the motor to be at zero speed.	Units: Hz RPM Default: P27 [Motor NP Hertz] x 0.001 P28 [Motor NP RPM] x 0.001 Min/Max: 0.00 / P27 [Motor NP Hertz] x 0.5 0.00 / P28 [Motor NP RPM] x 0.5	RW	Real
		526 527 528	Skip Speed 1 Skip Speed 2 Skip Speed 3 Skip Speed 1, 2, 3 Sets a frequency at which the drive will not operate. [Skip Speed X] and P529 [Skip Speed Band] must not equal 0.	Units: Hz Default: 0.00 Min/Max: P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		529	Skip Speed Band Skip Speed Band Sets the bandwidth around a skip speed. [Skip Speed Band] is split, applying 1/2 above and 1/2 below the skip speed. The same bandwidth applies to all skip speeds.	Units: Hz RPM Default: 0.00 Min/Max: 0.00 / P27 [Motor NP Hertz] x 0.5 0.00 / P28 [Motor NP RPM] x 0.5	RW	Real
SPEED CONTROL	Speed Ramp Rates	535 536	Accel Time 1 Accel Time 2 Acceleration Time 1, 2 Sets the acceleration rate for all speed changes. Defined as the time to accelerate from 0 to P27 [Motor NP Hertz] or P28 [Motor NP RPM], according to the setting in P300 [Speed Units]. Selection between Time 1 and Time 2 is controlled by a digital input function (see Digin Functions) or by Logic Command (sent over a communication network).	Units: Secs Default: 10.00 Min/Max: 0.00 / 3600.00	RW	Real
		537 538	Decel Time 1 Decel Time 2 Deceleration Time 1, 2 Sets the deceleration rate for all speed changes. Defined as the time to decelerate from P27 [Motor NP Hertz] or P28 [Motor NP RPM] to 0, according to the setting in P300 [Speed Units]. Selection between Time 1 and Time 2 is controlled by a digital input function (see Digin Functions) or by Logic Command (sent over a communication network). Some stop modes (see P370 and P371) will cause the programmed decel time to be ignored during a stop command.	Units: Secs Default: 10.00 Min/Max: 0.00 / 3600.00	RW	Real
		539	Jog Acc Dec Time Jog Acceleration Deceleration Time Acceleration and deceleration rates while commanding jog (uses a jog speed reference).	Units: Secs Default: 10.00 Min/Max: 0.00 / 3600.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Ramp Rates	540	S Curve Accel S Curve Acceleration Sets the percentage of accel time applied to the ramp to soften (reduce jerk) the acceleration. Time is added, 1/2 at the beginning and 1/2 at the end of the ramp. 	Units: % Default: 0.000 Min/Max: 0.000 / 100.000	RW	Real
		541	S Curve Decel S Curve Deceleration Sets the percentage of decel time applied to the ramp to soften (reduce jerk) the deceleration. Time is added, 1/2 at the beginning and 1/2 at the end of the ramp.	Units: % Default: 0.000 Min/Max: 0.000 / 100.000	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Reference	545 550	Spd Ref A Sel Spd Ref B Sel  Speed Reference A Select Speed Reference B Select Selects the source for speed references while in "Auto" (typical) mode. When the drive is in "Manual" mode, these sources are overridden (see P327). [Speed Ref A] is the drive's main speed reference. [Speed Ref B] is an alternate speed reference. Selecting between Reference A and Reference B is controlled by a digital input function (see Digin Functions) or by Logic Command (sent over a communication network).	Default: 871 551 Min/Max: 0 / 159999	RW	32-bit Integer
		546 551	Spd Ref A Stpt Spd Ref B Stpt Speed Reference A Setpoint Speed Reference B Setpoint A constant speed value (similar to a preset speed) to be used as a possible source for P545 and P550.	Units: Hz RPM Default: 0.0000 Hz Min/Max: $\pm P27$ [Motor NP Hertz] x 8 $\pm P27$ [Motor NP RPM] x 8	RW	Real
		547 552	Spd Ref A AnlgHi Spd Ref B AnlgHi Speed Reference A Analog High Speed Reference B Analog High Used only when an analog input is selected as a speed reference according to P546 or P551. Sets the speed that corresponds to [Anlg InX Hi] on an I/O module. This establishes scaling throughout the range.	Units: Hz Default: P520 [Max Fwd Speed] Min/Max: P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		548 553	Spd Ref A AnlgLo Spd Ref B AnlgLo Speed Reference A Analog Low Speed Reference B Analog Low Used only when an analog input is selected as a speed reference according to P546 or P551. Sets the speed that corresponds to [Anlg InX Lo] on an I/O module. This establishes scaling throughout the range.	Units: Hz Default: 0.00 Min/Max: P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		549 554	Spd Ref A Mult Spd Ref B Mult Speed Reference A Multiplier Speed Reference B Multiplier Applies multipliers to speed references A and B respectively.	Default: 1.00 Min/Max: ± 22000.00	RW	Real

File	Group	No.	Name Description	Values		Read-Write	Data Type																																																		
SPEED CONTROL	Speed Reference	555	Spd Ref Scale Speed Reference Scale Applies only in Flux Vector (FV) modes according to P35 [Motor Ctrl Mode]. Applies a multiplier to P595 [Filtered Spd Ref] after it has been offset by the PID function (P1093 [PID Output Meter]). The scaled result, once limited, will become the primary component of the value of P597 [Final Speed Ref].	Default:	1.000	RW	Real																																																		
			Min/Max:	0.000 / 1000.000																																																					
		556 557	Jog Speed 1 Jog Speed 2 Jog Speed 1, 2 The speed used for jogging when the Jog 1 or Jog 2 function (respectively) is activated by a digital input function or by Logic Command (sent over a communication network).	Units:	Hz	RW	Real																																																		
			Default:	P27 [Motor NP Hertz] / 6 P27 [Motor NP RPM] / 6																																																					
			Min/Max:	−/+P27 [Motor NP Hertz] x 8 −/+P27 [Motor NP RPM] x 8																																																					
		558	MOP Reference Motor Operated Potentiometer Reference Value of the MOP (Motor Operated Potentiometer) Reference to be used a possible source for P545 and P550. The MOP Reference is activated (incremented or decremented) by digital input functions.	Units:	%	RW	Real																																																		
			Default:	0.00																																																					
			Min/Max:	−/+800.00																																																					
		559	Save MOP Ref Save Motor Operated Potentiometer Reference Enables/disables the feature that saves the present MOP Ref value at power down or stop.																																																						
			Options	<table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>At Stop</td><td>At Pwr Down</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table>		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	At Stop	At Pwr Down	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = False 1 = True	
	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	At Stop	At Pwr Down																																									
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									
560	MOP Rate Motor Operated Potentiometer Rate Sets the rate of change of the MOP reference when an increasing or decreasing MOP signal is present.	Units:	%/Secs	RW	Real																																																				
	Default:	1.0000																																																							
	Min/Max:	0.0100 / 100.0000																																																							
561	MOP High Limit Motor Operated Potentiometer High Limit Sets the upper limit for the MOP Reference.	Units:	%	RW	Real																																																				
	Default:	100.000																																																							
	Min/Max:	0.000 / 800.000																																																							
562	MOP Low Limit Motor Operated Potentiometer low Limit Sets the lower limit for the MOP Reference.	Units:	%	RW	Real																																																				
	Default:	−100.000																																																							
	Min/Max:	−800.000 / 0.000																																																							
563	DI ManRef Sel  Digital Input Manual Reference Select Selects a speed reference to be used when a digital input activates Manual control, according to the operation described by P172 [DI Manual Ctrl].	Default:	872	RW	32-bit Integer																																																				
		Min/Max:	1 / 159999																																																						
564	DI ManRef AnlghI Digital Input Manual Reference Analog High Hi scale for the manual speed reference that is activated by a digital input when P563 [DI ManRef Sel] is connected to an Analog Input.	Units:	Hz RPM	RW	Real																																																				
		Default:	P520 [Max Fwd Speed]																																																						
		Min/Max:	P521 [Max Rev Speed] / P520 [Max Fwd Speed]																																																						

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Reference	565	DI ManRef AnlgLo Digital Input Manual Reference Analog Low Used only when P563 [DI ManRef Sel] has selected an analog input as the source of the speed reference. Specifies the speed reference value that will be associated with the Analog In Lo parameter for the I/O Module. Example, P563 [DI ManRef Sel] has selected P50 [Anlg In0 Value] on an I/O Module. The P51 [Anlg In0 Hi] parameter on the I/O Module is set to -10 volts. P564 [DI ManRef AnlgHi] will specify the speed reference value that will correspond with a -10 volt analog input signal.	Units: Hz RPM Default: 0.000 Min/Max: P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		571 572 573 574 575 576 577	Preset Speed 1 Preset Speed 2 Preset Speed 3 Preset Speed 4 Preset Speed 5 Preset Speed 6 Preset Speed 7 Preset Speed 1, 2, 3, 4, 5, 6, 7 Discrete speed references that are activated by a digital input function (see Digin Functions) or by Logic Command (sent over a communication network).	Units: Hz RPM Default: 1/12 x P27 or P28 (Preset Speed 1) 1/6 x P27 or P28 (Preset Speed 2) 1/3 x P27 or P28 (Preset Speed 3) 1/2 x P27 or P28 (Preset Speed 4) 2/3 x P27 or P28 (Preset Speed 5) 5/6 x P27 or P28 (Preset Speed 6) P27 or P28 (Preset Speed 7) Min/Max: P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		588	Spd Ref Filter Speed Reference Filter Selects the amount of filtering applied to the ramped speed reference (P594), and is only active in FV motor control modes (P35). When set to any of the custom settings (3, 4, or 5) the filter is configured using the values set in P589 [Spd Ref Fltr BW] and P590 [Spd Ref FltrGain]. Settings 4 and 5 initialize the values for light and heavy respectively.	Default: 0 = "Off" Options: 0 = "Off" 1 = "Light" 2 = "Heavy" 3 = "Custom" 4 = "SetCustLight" 5 = "SetCustHeavy"	RW	32-bit Integer
		589	Spd Ref Fltr BW Speed Reference Filter Bandwidth Sets the bandwidth of the speed reference filter when P588 [Spd Ref Filter] is set to one of the "Custom" settings (3, 4, or 5) A value of zero will disable (bypass) the filter.	Units: R/S Default: 0.00 Min/Max: 0.00 / 500.00	RW	Real
		590	Spd Ref FltrGain Speed Reference Filter Gain Sets the gain (kn) of the speed reference filter when P588 [Spd Ref Filter] is set to one of the "Custom" settings (3, 4, or 5). A gain value of zero results in a filter characteristic that behaves as a first order low pass. A gain value ranging between zero and one results in a lag type filter. A gain value greater than one results in a lead type filter. A gain value of one will disable (bypass) the filter. This is the default setting. This parameter has no units.	Default: 1.000 Min/Max: -/+5.000	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																	
SPEED CONTROL	Speed Reference	591	Spd Ref Sel Sts Speed Reference Select Status Options <table><tr><td></td><td>Reserved</td><td>Skip Band</td><td>End Lmt Sw</td><td>Decel Lmt Sw</td><td>Unipolar Ref</td><td>Rev Disable</td><td>Bipolar Ref</td><td>Sel Override</td><td>Preset Auto</td><td>Trim Ref</td><td>Trim Pct Ref</td><td>MicroPsnMult</td><td>Ref B Mult</td><td>Ref A Mult</td><td>Ref B Auto</td><td>Ref A Auto</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True		Reserved	Skip Band	End Lmt Sw	Decel Lmt Sw	Unipolar Ref	Rev Disable	Bipolar Ref	Sel Override	Preset Auto	Trim Ref	Trim Pct Ref	MicroPsnMult	Ref B Mult	Ref A Mult	Ref B Auto	Ref A Auto	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
			Reserved	Skip Band	End Lmt Sw	Decel Lmt Sw	Unipolar Ref	Rev Disable	Bipolar Ref	Sel Override	Preset Auto	Trim Ref	Trim Pct Ref	MicroPsnMult	Ref B Mult	Ref A Mult	Ref B Auto	Ref A Auto																																					
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																					
Displays the operating status of the speed referencing section of the drive. Individual bits are provided to represent the following conditions: Bit 0 "Ref A Auto" – When set, the Reference A Auto path is active. Control Logic has selected the Speed Reference source A. The exact origin of this speed reference is determined by the parameter specified in P545 [Spd Ref A Sel]. This parameter should also be reported in P930 [Speed Ref Source]. Bit 1 "Ref B Auto" – When set, the Reference B Auto path is active. Control Logic has selected the Speed Reference source B. The exact origin of this speed reference is determined by the value specified in P550 [Spd Ref B Sel]. This parameter should also be reported in P930 [Speed Ref Source]. Bit 2 "Ref A Mult" – When set, speed reference A is being modified by P549 [Spd Ref A Mult]. When clear, either the multiplier is 1 or is not affecting the speed reference because the Ref A Auto path is inactive. Bit 3 "Ref B Mult" – When set, the speed reference B is being modified by P554 [Spd Ref B Mult]. When clear, either the multiplier is 1 or is not affecting the speed reference because the "Ref B Auto" path is inactive. Bit 4 "MicroPsnMult" – When set, P592 [Selected Spd Ref] is being multiplied by P1112 [MicroPsnScalePct]. Bit 5 "Trim Pct Ref" – When set, the speed reference is being multiplied by one plus the value of the parameter indicated in P616 [SpdTrimPrcRefSrc]. Bit 6 "Trim Ref" – When set, the speed reference is being offset by the value of the parameter indicated in P617 [Spd Trim Source]. Bit 7 "Preset Auto" – When set, Control Logic has selected a preset auto speed reference. The P930 [Speed Ref Source] parameter will indicate the source of this reference. Bit 8 "Sel Override" – The Selected Speed Reference parameter has been overridden by another reference. Refer to P930 [Speed Ref Source] for the cause of the override. Bit 9 "Bipolar Ref" – When set, P308 [Direction Mode] = 1 "Bipolar." When in bipolar mode, the sign of the speed reference value will determine the direction of motor rotation. Bit 10 "Rev Disable" – When set, P308 [Direction Mode] = 2 "Rev Disable." When in reverse disable mode, negative speed reference values are rejected and a zero speed value is used in their place. Bit 11 "Unipolar Ref" – When set, P308 [Direction Mode] = 0 "Unipolar." When in unipolar mode, the sign of the speed reference value (and therefore direction of motor rotation) is determined by P879 [Drive Logic Rslt] Bit 4 "Forward" and Bit 5 "Reverse." Bit 12 "Decel Lmt Sw" – When set, the Torque Proving function's control logic has detected a decel limit switch active and has selected P571 [Preset Speed 1] for the speed reference value. Bit 13 "End Lim Sw" – When set, the Torque Proving function's control logic has detected an end limit switch active and has selected zero speed for the speed reference value. Bit 14 "Skip Band" – When set, the Skip Band function has modified P2 [Commanded SpdRef]. When clear, the Skip Band function has not changed p2 [Commanded SpdRef].																																																							
592	Selected Spd Ref Selected Speed Reference Displays the value of the active speed reference.	Units: Default: Min/Max:	Hz RPM 0.00 -/+P27 [Motor NP Hertz] -/+P28 [Motor NP RPM]	RW	Real																																																		
593	Limited Spd Ref Limited Speed Reference Displays the value of the speed reference after the following limits have been applied: P520 [Max Fwd Speed], P521 [Max Rev Speed], P522 [Min Fwd Speed] and P523 [Min Rev Speed].	Units: Default: Min/Max:	Hz RPM 0.00 -/+P27 [Motor NP Hertz] -/+P28 [Motor NP RPM]	RW	Real																																																		

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Reference	594	Ramped Spd Ref Ramped Speed Reference Displays the output of the speed reference ramp and S-curve functions, but prior to any corrections added by slip comp, PI, etc.	Units: Hz Default: RPM Min/Max: 0.00 -/+P27 [Motor NP Hertz] -/+P28 [Motor NP RPM]	RW	Real
		595	Filtered Spd Ref Filtered Speed Reference Displays the output of the filter that is applied by P588.	Units: Hz Default: RPM Min/Max: 0.00 -/+P27 [Motor NP Hertz] -/+P28 [Motor NP RPM]	RW	Real
		596	Speed Rate Ref Speed Rate Reference This parameter is shared by both the Inertia Compensation and Speed Compensation functions. These functions are only available in the Flux Vector selections for P35 [Motor Ctrl Mode]. A value shared by both the Inertia Compensation and Speed Compensation functions (active only in FV motor control modes), typically supplied by an external controller that is also providing a rate limited speed reference. The Speed Rate Reference corresponds to the derivative with respect to time of the speed reference signal. Units of time are in seconds. For example, if the controller provides a 10 second reference ramp, the controller would also supply a Speed Rate Ref value of 1 pu / 10 sec = 0.1 sec-1 while the reference is accelerating. When the reference is constant, Speed Rate Ref should be zero.	Units: Hz Default: RPM Min/Max: 0.00 -/+P27 [Motor NP Hertz] -/+P28 [Motor NP RPM]	RW	Real
		597	Final Speed Ref Final Speed Reference Displays the speed reference value, after all reference modifications (including ramps), that is used as a final reference by the speed regulator. In Open Loop, Sensorless Vector mode, then this value represents the anticipated motor operating speed, and may differ slightly from the output frequency value due to slip compensation.	Units: Hz Default: RPM Min/Max: 0.00 -/+P27 [Motor NP Hertz] -/+P28 [Motor NP RPM]	RW	Real

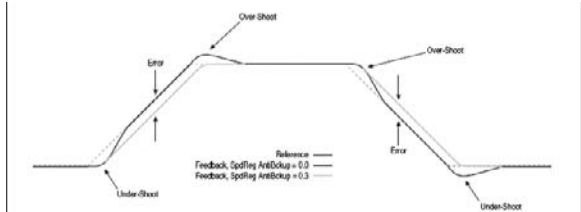
File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Trim	600 604	Trim Ref A Sel Trim Ref B Sel  Trim Reference A Select Trim Reference B Select Selects a trim source (in Hz or RPM) for Speed Reference A or Speed Reference B, respectively. For trim in % instead of Hz or RPM, use P608 and P612 (TrimPct RefX Sel).	Default: P601 [Trim Ref A Sel] P605 [Trim Ref B Stpt] Min/Max: 0 / 159999	RW	32-bit Integer
		601 605	Trim Ref A Stpt Trim Ref B Stpt Trim Reference A Setpoint Trim Reference B Setpoint A digital value to be used a possible trim source for P600 or P605, respectively	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] -/+P28 [Motor NP RPM]	RW	Real
		602 606	Trim RefA AnlgHi Trim RefB AnlgHi Trim Reference A Analog High Trim Reference B Analog High Used only when an analog input is selected as a trim source according to P600 or P604. Sets the amount of trim that corresponds to [Anlg InX Hi] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: Hz RPM Default: P520 [Max Fwd Speed] Min/Max: P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Trim	603 607	Trim RefA AnlgLo Trim RefB AnlgLo Trim Reference A Analog Low Trim Reference B Analog Low Used only when an analog input is selected as a trim source according to P600 or P604. Sets the amount of trim that corresponds to [Anlg InX Lo] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: Hz RPM Default: 0.00 Min/Max: P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		608 612	 TrmPct RefA Sel TrmPct RefB Sel Trim Percent Reference A Select Trim Percent Reference B Select Selects a trim source (in %) for Speed Reference A or Speed Reference B, respectively. For trim in Hz or RPM instead of %, use P600 and P604 (Trim Ref X Sel).	Default: P609 [TrmPct RefA Stpt] P613 [TrmPct RefB Stpt] Min/Max: 0 / 159999	RW	32-bit Integer
		609 613	TrmPct RefA Stpt TrmPct RefB Stpt Trim Percent Reference A Setpoint Trim Percent Reference B Setpoint A digital value to be used as a possible trim source for P608 or P613, respectively.	Units: % Default: 0.000 Min/Max: -/+800.000	RW	Real
		610 614	TrmPct RefA AnHi TrmPct RefB AnHi Trim Percent Reference A Analog High Trim Percent Reference B Analog High Used only when an analog input is selected as a percent trim source according to P608 or P612. Sets the amount of trim that corresponds to [Anlg InX Hi] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: % Default: 100.00 Min/Max: -/+800.00	RW	Real
		611 615	TrmPct RefA AnLo TrmPct RefB AnLo Trim Percent Reference A Analog Low Trim Percent Reference B Analog Low Used only when an analog input is selected as a percent trim source according to P608 or P612. Sets the amount of trim that corresponds to [Anlg InX Lo] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		616	SpdTrimPrcRefSrc Speed Trim Percent Reference Source Displays the source of Motor Speed Reference Trim Percent, in the format SSPPPP, where SS indicates the source port number (if non-zero) and PPPP indicates the source parameter number. A value of zero indicates that a source has not been assigned.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer
		617	Spd Trim Source Speed Trim Source Displays the source of Motor Speed Reference Trim, in the format SSPPPP, where SS indicates the source port number (if non-zero) and PPPP indicates the source parameter number. A value of zero indicates that a source has not been assigned.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer

File	Group	No.	Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Slip/Droop Comp	620	Droop RPM @ FLA Droop Revolutions Per Minute at Full Load Amps Selects amount of droop that the speed reference is reduced when at full load torque. Zero disables the droop function.	Units: RPM Default: 0.00 Min/Max: 0.00/900.00		RW	Real
		621	Slip RPM @ FLA Slip Revolutions Per Minute at Full Load Amps For open loop modes, this parameter sets the amount of slip (in rpm) that the motor is expected to experience at full load. A setting of zero disables slip compensation (not used in closed loop modes with encoder feedback). If the value of P70 [Autotune] is set to "Calculate", this value (in addition to others) is automatically calculated, and cannot be manually adjusted.	Units: RPM Default: (P27 [Motor NP Hz] x 120) / (P31 [Motor Poles] – P28 [Motor NP RPM]) Min/Max: 0.00 / 1200.00		RW	Real
		622	Slip Comp BW Slip Compensation Bandwidth Adjusts the bandwidth of a low pass filter used for slip compensation. The response time of slip compensation will vary inversely with the setting of this filter.	Units: R/S Default: 10.00 Min/Max: 1.00 / 50.00		RW	Real
		623	VHzSV SpdTrimReg Volts per Hertz Sensorless Vector Speed Trim Regulator Displays the amount of trim that the slip compensation function dynamically adds (based on load) to final speed reference for improved open loop speed control.	Units: Hz RPM Default: 0.00 Min/Max: –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8		RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type	
SPEED CONTROL	Speed Regulator	635	Spd Options Ctrl Speed Options Control				
			Options				
			Reserved				
			Reserved				
			Reserved				
			Reserved				
			Reserved				
			Reserved				
			Reserved				
			Delayed Ref				
			Auto Tach SW				
			Jog No Integ				
			SpdErrFilter				
			SpdRegIntHld				
			SpdRegIntRes				
			StpNoSCrvAcc				
			Ramp Disable				
			Ramp Hold				
			Default	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 = False		
			Bit	15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0	1 = True		
Configures options related to Speed Control as follows:							
Bit 0 “Ramp Hold” – The output of the speed reference ramp will stop changing and hold its output constant while this bit is set. When this bit is clear, the ramp output will be allowed to change. If this bit becomes set while P594 [Ramped Spd Ref] is in the S Curve region, the S Curve will be allowed to complete before the output is held.							
Bit 1 “Ramp Disable” – When set, the speed reference ramp will become disabled. P594 [Ramped Spd Ref] will track the ramp input.							
Bit 2 “StpNoSCrvAcc” – There are some conditions where the drive may continue to accelerate briefly following a request to stop. This will occur if the drive was in the process of accelerating on an S Curve when the stop request occurred. This bit enables an option to discontinue acceleration immediately when the stop request occurs. The S Curve profile that was in process will then change to a linear decel ramp.							
Bit 3 “SpdRegIntRes” – When set, the P654 [Spd Reg Int Out] which is the output of the Vector mode speed regulator’s integral term will be forced to zero. The same result can be achieved by setting the regulator’s integral gain to zero.							
Bit 4 “SpdRegIntHld” – When set, the P654 [Spd Reg Int Out] which is the output of the Vector mode speed regulator’s integral term will stop changing and be held constant. Other conditions in the drive such as a limit condition in P945 [At Limit Status] may have the same result.							
Bit 5 “SpdErrFilter” – When set, the speed error filter in the drive’s Vector mode speed regulator will be configured for a single stage low pass filter. When clear, the error filter will be configured for a two stage low pass filter. The two stage configuration is the normal or default setting for the error filter.							
Bit 6 “Jog No Integ” – When set, the P654 [Spd Reg Int Out] which is the output of the Vector mode speed regulator’s integral term will be forced to zero while jogging.							
Bit 7 “Auto Tach SW” – This bit is used to enable the Automatic Tach Switchover feature. This feature is used to switch motor velocity feedback sources from the Primary to Alternate source in the event that the primary source fails. This switchover can take place while the drive is running. The P936 [Drive Status 2] Bit 5 “FdbkLoss SwO” will indicate clear when the Primary source is active and set when the alternate source is active. Clearing the (Auto Tach SW) bit when the alternate source is active will restore control to the Primary source, provided that the primary source is functioning. If the (Auto Tach SW) bit remains off, then the Automatic Tach Switchover feature will be disabled.							
Bit 8 “Delayed Ref” – When this bit is set, an additional processor scan delay period is inserted between the P594 [Ramped Spd Ref] and the input to the Speed Reference filter. This delay is intended to be used in applications where multiple, coordinated drives are used. A drive that supplies the speed reference for use by other drives to follow would typically use this delay. The delay would allow time for the speed reference to reach the other units before it is acted upon by the sourcing unit, thereby synchronizing the speed reference among all units. When this bit is clear, no speed reference delay is inserted.							

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Regulator	636	Speed Reg BW Speed Regulator Bandwidth Sets the speed loop bandwidth and determines the dynamic behavior of the speed loop. As bandwidth increases, the speed loop becomes more responsive and can track a faster changing speed reference. A change to this parameter will cause an automatic update of P645 [Speed Reg Kp], P647 [Speed Reg Ki] and P644 [Spd Err Filt BW]. The configuration settings for Inertia Adaption (product dependent) will also be automatically selected when this feature is enabled. To disable the automatic gain and filter update, set this parameter to a value of zero. The maximum allowable value of this parameter will be limited by the ratio of P646 [Spd Reg Max Kp] to P76 [Total Inertia], and the type of speed feedback source in use (encoder vs. open loop). For operation following an automatic tach switchover, the bandwidth specified in P648 [Alt Speed Reg BW] will be used.	Units: R/S Default: Calculated Min/Max: 0.00 / 1200.00	RW	Real
		637	SReg FB Fitr Sel Speed Regulator Feedback Filter Select Selects the amount of filtering applied to the feedback channel of the speed regulator, and is only active in FV motor control modes (P35). When set to any of the custom settings (3, 4, or 5) the filter is configured using the values set in P638 [Spd Ref Fitr BW] and P639 [Spd Ref FitrGain]. Settings 4 and 5 initialize the values for light and heavy respectively.	Default: 0 = "Off" Options: 0 = "Off" 1 = "Light" 2 = "Heavy" 3 = "Custom" 4 = "SetCustLight" 5 = "SetCustHeavy"	RW	32-bit Integer
		638	SReg FB FitrGain Speed Regulator Feedback Filter Gain Sets the gain of the speed regulator feedback filter when P637 [SReg FB Fitr Sel] is set to one of the "Custom" settings (3, 4, or 5). A gain value of zero results in a filter characteristic that behaves as a first order low pass. A gain value ranging between zero and one results in a lag type filter. A gain value greater than one results in a lead type filter. A gain value of one will disable (bypass) the filter.	Default: 0.700 Min/Max: -5.000 / 20.000	RW	Real
		639	SReg FB Fitr BW Speed Regulator Feedback Filter Bandwidth Sets the bandwidth of the speed regulator feedback filter when P637 [SReg FB Fitr Sel] is set to one of the "Custom" settings (3, 4, or 5). A value of zero will disable (bypass) the filter.	Units: R/S Default: 35.00 Min/Max: 0.00 / 3760.00	RW	Real
		640	Filtered SpdFdbk Filtered Speed Feedback Displays the output of the filter that is applied by P637.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real
		641	Speed Error Speed Error Displays the error (difference) between the P597 [Final Speed Ref] (+) and the P640 [Filtered SpdFdbk] (-). This error signal is the primary input for the Vector control mode speed regulator.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Regulator	642	Servo Lock Gain Servo Lock Gain Sets the gain of an additional integrator in the Vector control mode speed regulator. The effect of Servo Lock is to increase stiffness of the speed response to a load disturbance. It behaves like a position regulator with velocity feed forward, but without the pulse accuracy of a true position regulator. Gain should normally be set to less than 1/3 speed regulator bandwidth, or for the desired response. A value of zero disables this feature.	Units: /Sec Default: 0.000 Min/Max: 0.000 / 300.000	RW	Real
		643	SpdReg AntiBckup Speed Regulator Anti-backup Allows control of over-shoot/under-shoot in the step response of the Vector control mode speed regulator. Over-shoot/under-shoot can be effectively eliminated with a setting of 0.3, which will remove backup of the motor shaft when zero speed is reached. This parameter has no affect on the drive's response to load changes. A value of zero disables this feature 	Default: 0.0000 Min/Max: 0.0000 / 0.5000	RW	Real
		644	Spd Err Filt BW Speed Error Filter Bandwidth Sets the bandwidth of a 2nd order Butterworth low pass filter that is located in the proportional gain section of the speed regulator (in FV motor control modes). It filters a signal that is derived from P641 [Speed Error]. The purpose of this filter is to reduce quantization noise. When P636 [Speed Reg BW] is set to a non-zero value, this filter will be automatically set. If P636 [Speed Reg BW] is set to zero, this filter setting must be manually adjusted. It is normally set to at least 3 to 5 times the value of P636 [Speed Reg BW]. A value of zero disables the filter. The rules that are used to set the error filter bandwidth in automatic mode are as follows: 1. If the primary motor velocity feedback is Open Loop, then the error filter is set to 5 times P636 [Speed Reg BW]. 2. If a primary motor velocity feedback device has been selected and P704 [InAdp LdObs Mode] = 1 "InertiaAdapt," then the error filter is set to 3 times P636 [Speed Reg BW]. 3. If a primary motor velocity feedback device has been selected and P704 [InAdp LdObs Mode] = 0 "Disabled" or 2 "LoadObserver" then the error filter is using a table look up value determined by the setting of P126 [Pri Vel FdbkFiltr]. Important: When Auto Tach Switchover is enabled through P635 [Spd Options Cntl], this filter adjustment applies only to the primary feedback source. The filter setting P651 [AltSpdErr FiltBW] is used for the alternate feedback source.	Units: R/S Default: 50.00 Min/Max: 0.00 / 8000.00	RW	Real
		645	Speed Reg Kp Speed Regulator Kp Sets the proportional gain of the speed regulator (in FV motor control modes). This value is automatically calculated based on the bandwidth setting in P636 [Speed Reg BW] and P76 [Total Inertia]. The proportional gain may be manually adjusted by setting P636 [Speed Reg BW] to a value of zero. Proportional gain has effective scaling of (per unit torque) / (per unit speed). The maximum allowable value of this parameter is limited by P76 [Total Inertia] and P646 [Spd Reg Max Kp].	Default: 20.00 Min/Max: 0.00 / P646 [Speed Reg Max Kp]	RW	Real
		646	Speed Reg Max Kp Speed Regulator Maximum Kp Limits the maximum value of P645 [Speed Reg Kp] and P649 [Alt Speed Reg Kp]. When gains are automatically calculated, this parameter is necessary to limit the amplification of noise with increased inertia.	Default: 3000.00 Min/Max: 0.00 / 3000.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Regulator	647	Speed Reg Ki Speed Regulator Ki Sets the integral gain of the speed regulator (in FV motor control modes). This value is automatically calculated based on the bandwidth setting in P636 [Speed Reg BW], P645 [Speed Reg Kp] and P653 [Spd Loop Damping]. Integral gain may be manually adjusted by setting P636 [Speed Reg BW] to a value of zero. Integral gain has effective scaling of (per unit torque/sec) / (per unit speed).	Units: /Sec Default: 50.00 Min/Max: 0.00 / 100000.00	RW	Real
		648	Alt Speed Reg BW Alternate Speed Regulator Bandwidth Provides an independent setting for the same function as P636 [Speed Reg BW], but is active only when Automatic Feedback Loss Switchover occurs (indicated by bit 5 of P936 [Drive Status 2]). A change to this parameter will cause an automatic update of P649 [Alt Speed Reg Kp], P650 [Alt Speed Reg Ki] and P651 [Alt Spd Err Filt BW]. See P636 for additional information regarding speed regulator bandwidth. Also see P635 [Spd Options Ctrl] to enable the Auto Tach Switchover feature.	Units: R/S Default: 10.00 Min/Max: 0.00 / 100000.00	RW	Real
		649	Alt Speed Reg Kp Alternate Speed Regulator Kp Provides an independent setting for the same function as P645 [Speed Reg Kp], but is active only when Automatic Feedback Loss Switchover occurs (indicated by bit 5 of P936 [Drive Status 2]). This value is automatically calculated based on the bandwidth setting in P648 [Alt Speed Reg BW] and P76 [Total Inertia]. The proportional gain may be manually adjusted by setting P648 [Alt Speed Reg BW] to a value of zero.	Default: 20.00 Min/Max: 0.00 / 100000.00	RW	Real
		650	Alt Speed Reg Ki Alternate Speed Regulator Ki Provides an independent setting for the same function as P647 [Speed Reg Ki], but is active only when Automatic Feedback Loss Switchover occurs (indicated by bit 5 of P936 [Drive Status 2]). This value is automatically calculated based on the bandwidth setting in P648 [Alt Speed Reg BW], P649 [Alt Speed Reg Kp] and P653 [Spd Loop Damping]. Integral gain may be manually adjusted by setting P648 [Alt Speed Reg BW] to a value of zero.	Default: 50.00 Min/Max: 0.00 / 100000.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Regulator	651	AltSpdErr FiltBW Alternate Speed Error Filter Bandwidth Provides an independent setting for the same function as P644 [Spd Err Filt BW], but is active only when Automatic Feedback Loss Switchover occurs (indicated by bit 5 of P936 [Drive Status 2]) When P648 [Alt Speed Reg BW] is set to a non-zero value, this filter setting will be automatically selected. If P648 [Alt Speed Reg BW] is set to zero, then this filter setting must be manually adjusted. An error filter value of 0 will disable the filter. This filter is normally set to at least 3 to 5 times the value of P648 [Alt Speed Reg BW]. Units for the error filter are rad/sec (R/S). The rules that are used to set the error filter bandwidth in automatic mode are as follows: 1. If the alternate motor velocity feedback is Open Loop, then the error filter is set to 5 times P648 [Alt Speed Reg BW]. 2. If an alternate motor velocity feedback device has been selected and P704 [InAdp LdObs Mode] = 1 "InertiaAdapt," then the error filter is set to 3 times P648 [Alt Speed Reg BW]. 3. If an alternate motor velocity feedback device has been selected and P704 [InAdp LdObs Mode] 0 "Disabled" or 2 "LoadObserver" then the error filter is using a table look up value determined by the setting of P129 [Alt Vel FdbkFiltr].	Units: R/S Default: 50.00 Min/Max: 0.00 / 8000.00	RW	Real
		652	SReg Trq Preset Speed Regulator Torque Preset Sets the initial value of P654 [Spd Reg Int Out]. This is the output of the vector speed regulator's integral channel, and will be present in P654 [Spd Reg Int Out] when the regulator is first enabled (for example, upon rise of start or jog). The normal, default setting for this parameter is zero. In some applications, it may be necessary to preset the speed regulator integrator to a non-zero setting. This will result in the regulator's output reaching its final steady state value sooner than it would if the integrator started from zero.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		653	Spd Loop Damping Speed Loop Damping Sets the damping factor of the vector speed loop's characteristic equation. Damping will affect the integral gain when a non-zero bandwidth has been entered. A damping factor of 1.0 is considered critical damping. Lowering the damping will produce faster load disturbance rejection, but may cause a more oscillatory response. When the speed regulator bandwidth is zero, gains are set manually and damping factor has no effect.	Default: 1.0000 Min/Max: 0.5000 / 65.0000	RW	Real
		654	Spd Reg Int Out Speed Regulator Integrator Output Displays the current value of the vector speed regulator's integral channel.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		655	Spd Reg Pos Lmt Speed Regulator Positive Limit Adjusts the upper limit of the vector speed regulator's output.	Units: % Default: 300.00 Min/Max: 0.00 / 600.00	RW	Real
		656	Spd Reg Neg Lmt Speed Regulator Negative Limit Adjusts the lower limit of the vector speed regulator's output.	Units: % Default: -300.00 Min/Max: -600.00 / 0.00	RW	Real

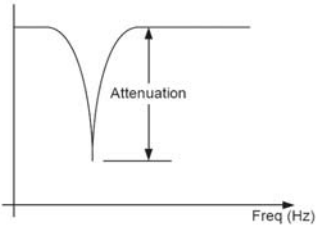
File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Regulator	657	SReg OutFiltr Sel Speed Regulator Output Filter Select Selects the amount of filtering applied to the vector speed regulator's output. When set to any of the custom settings (3, 4, or 5) the filter is configured using the values set in P658 [SReg OutFiltrGain] and P659 [SReg OutFiltrBW]. Settings 4 and 5 initialize the values for light and heavy respectively.	Default: 0 = "Disabled" Options: 0 = "Disabled" 1 = "Light" 2 = "Heavy" 3 = "Custom" 4 = "SetCustLight" 5 = "SetCustHeavy"	RW	32-bit Integer
		658	SReg OutFiltrGain Speed Regulator Output Filter Gain Sets the gain of the vector speed regulator's output filter when P657 [SReg OutFiltr Sel] is set to one of the "Custom" settings (3, 4, or 5). A gain value of zero results in a filter characteristic that behaves as a first order low pass. A gain value ranging between zero and one results in a lag type filter. A gain value greater than one results in a lead type filter. A gain value of one will disable (bypass) the filter.	Default: 1.000 Min/Max: -/+5.000	RW	Real
		659	SReg OutFiltr BW Speed Regulator Output Filter Bandwidth Sets the bandwidth of the speed regulator's output filter when P657 [SReg OutFiltr Sel] is set to one of the "Custom" settings (3, 4, or 5). A value of zero will disable (bypass) the filter.	Units: R/S Default: 35.00 Min/Max: 0.00 / 3760.00	RW	Real
		660	SReg Output Speed Regulator Output Displays the output of the vector speed regulator. This signal will be routed to the P685 [Selected TorqRef] when [Spd/Torq/PosMode] has selected the output of the speed regulator.	Units: % Default: 0.00 Min/Max: -/+ 800.00	RW	Real
		663	VHzSV Spd Reg Kp Volts per Hertz Sensorless Vector Speed Regulator Proportional Gain Adjusts the proportional gain of the Speed Regulator used in non-vector modes according to P35 [Motor Cntl Mode]. The output of this regulator will adjust P623 [VHzSV SpdTrimReg] when P131 [Active Vel Fdbk] originates from a feedback device.	Default: 20.00 Min/Max: 0.00 / 3000.00	RW	Real
		664	VHzSV Spd Reg Ki Volts per Hertz Sensorless Vector Speed Regulator Integral Gain Adjusts the integral gain of the Speed Regulator used in non-vector modes according to P35 [Motor Cntl Mode]. The output of this regulator will adjust P623 [VHzSV SpdTrimReg] when P131 [Active Vel Fdbk] originates from a feedback device.	Units: /Sec Default: 50.00 Min/Max: 0.00 / 100000.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Comp	665	Speed Comp Sel Speed Compensation Select Configures the Speed Compensation function, which is used in Vector Control modes to create a feedforward compensation that is added into the speed reference. This helps compensate for position tracking errors during acceleration. These tracking errors are caused by the sample and hold process and delays caused by the position to velocity FIR filter. Speed Compensation will help reduce position error in position follower applications. Available settings for this parameter are: "Disabled" (0) – Function is disabled, speed compensation does not affect the speed reference. "Ramped Ref" (1) – Speed compensation function is enabled and uses an internally generated ramped speed reference signal. The rate of change (derivative) of the speed reference becomes the input to the Speed Compensation function. This is the most common setting when speed compensation is in use. "Rate Ref" (2) – Speed compensation function is enabled and uses an externally generated speed rate signal. The rate of change or derivative of the speed reference is supplied by P596 [Speed Rate Ref]. This signal is typically supplied by an external controller when the speed reference ramp is generated external to the drive.	Default: 0 = "Disabled" Options: 0 = "Disabled" 1 = "Ramped Ref" 2 = "Rate Ref"	RW	32-bit Integer
		666	Speed Comp Gain Speed Compensation Gain The Speed Compensation Gain adjusts the magnitude of P667 [Speed Comp Out]. This gain can be either manually set or automatically determined as part of automatic gain mode for Vector speed control. Automatic mode can be activated by selecting a motor speed feedback device in P125 [Pri Vel Fdbk Sel] and setting a non-zero speed regulator bandwidth in P636 [Speed Reg BW]. In automatic mode, the gain is calculated internally using a table lookup from the interrupt times and delays of the speed feedback FIR filter. For any other case – non-vector control, open loop speed feedback, or zero bandwidth setting, the speed compensation gain must be manually adjusted.	Default: -2.50 Min/Max: -/+32767.00	RW	Real
		667	Speed Comp Out Speed Compensation Output Displays the output of the Speed Compensation function. This value will be summed with the speed reference, following the application of P555 [Spd Ref Scale].	Units: Hz Default: RPM Min/Max: 0.00 -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real

Drive Torque Control File

File	Group	No.	Name Description	Values	Read-Write	Data Type
TORQUE CONTROL	Torque Limits	670	Pos Torque Limit Positive Torque Limit Defines the torque limit for the positive torque reference value. The reference will not be allowed to exceed this value.	Units: % Default: 200.00 Min/Max: 0.00 / 800.00	RW	Real
		671	Neg Torque Limit Negative Torque Limit Defines the torque limit for the negative torque reference value. The reference will not be allowed to exceed this value.	Units: % Default: -200.00 Min/Max: -800.00 / 0.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
TORQUE CONTROL	Torque Reference	675 680 	Trq Ref A Sel Trq Ref B Sel Torque Reference A Select Torque Reference B Select Selects the source for a torque reference, used when the drive is configured to command torque according to P309-312 [SpdTrqPsn Mode X]. Torque Ref A and Torque Ref B are added together to provide a single torque reference.	Default: 676 681 Options: 0 / 159999	RW	32-bit Integer
		676 681	Trq Ref A Stpt Trq Ref B Stpt Torque Reference A Setpoint Torque Reference B Setpoint A digital torque value to be used as a possible source for P675 and P685 respectively.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		677 682	Trq Ref A AnlgHi Trq Ref B AnlgHi Torque Reference A Analog High Torque Reference B Analog High Used only when an analog input is selected as a torque reference according to P676 or P681. Sets the torque value that corresponds to [Anlg InX Hi] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: % Default: 100.00 Min/Max: -/+800.00	RW	Real
		678 683	Trq Ref A AnlgLo Trq Ref B AnlgLo Torque Reference A Analog Low Torque Reference B Analog Low Used only when an analog input is selected as a torque reference according to P676 or P681. Sets the torque value that corresponds to [Anlg InX Lo] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		679 684	Trq Ref A Mult Trq Ref B Mult Torque Reference A Multiplier Torque Reference B Multiplier A multiplier that is applied to Torque Reference A and B respectively. A value of 1 leaves the reference unaffected. Negative values invert the reference.	Default: 1.000 Min/Max: -/+1000.000	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
TORQUE CONTROL	Torque Reference	685	Selected Trq Ref Selected Torque Reference Displays the torque value of the selected torque reference (dynamic selection according to P313 [Actv SpTqPs Mode]). This value will be summed with P686 [Torque Step]. The result is then applied to the input of the notch filter located in the Vector torque reference section.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		686	Torque Step Torque Step Defines the amount of torque reference step change to simulate a load disturbance, used to test the response. This value is added to the main torque reference P685 [Selected TrqRef], and then applied to the input of the notch filter located in the Vector control torque reference section.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		687	Notch Fitr Freq Notch Filter Frequency The center frequency for the Notch filter located in the Vector control torque reference section. To disable, set to zero (0).	Units: Hz Default: 0.00 Min/Max: 0.00 / 500.00	RW	Real
		688	Notch Fitr Atten Notch Filter Attenuation Sets the attenuation of the notch filter located in the Vector control torque reference section. Attenuation is the ratio of the notch filter input signal to its output at the P687 [Notch Fitr Freq]. An attenuation of 30 means that the notch output is 1/30th of the input at the specified frequency. 	Default: 50.000 Min/Max: 0.000 / 500.000	RW	Real
		689	Filtered Trq Ref Filtered Torque Reference Displays the output of the notch filter defined by P687 and P688. If P704 [InAdp LdObs Mode] indicates that either the Inertia Adaption or Load Estimate functions are active, then the filtered torque reference will also be modified by these functions.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		690	Limited Trq Ref Limited Torque Reference Displays the torque reference value after filtering (P689), Power Limits, Torque Limits, and Current Limits have been applied. Motor power limits are set by P426 [Regen Power Lmt] and P427 [Motor Power Lmt]. Motor torque limits are set by P670 [Pos Torque Limit] and P671 [Neg Torque Limit]. Motor current limit is set by P422 [Current Limit 1] or P423 [Current Limit 2].	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
TORQUE CONTROL	Inertia Comp	695	Inertia CompMode Inertia Compensation Mode The inertia compensation function calculates a feed forward torque signal P699 [Inertia Comp Out]. Inertia compensation attempts to predict the motor torque required to accelerate and decelerate an inertial load. The P699 [Inertia Comp Out] signal is summed with P660 [SReg Output] and becomes an input available to the P313 [Actv SpTqPs Mode] selector. The inputs to the inertia comp function are the rate of change of motor speed reference and P76 [Total Inertia]. This parameter enables the inertia comp function and selects possible sources of motor speed reference as follows: “Disabled” (0) – Inertia compensation function is disabled. P699 [Inertia Comp Out] is zero so the motor torque reference is not affected. “Int Ramp Ref” (1) – Inertia compensation is enabled. The function is configured to use the rate of change of P595 [Filtered Spd Ref]. This is the typical setting that should be used for inertia compensation on a stand-alone drive. “Ext Ramp Ref” (2) – Inertia compensation is enabled. The function is configured to use the rate of change of P700 [Ext Ramped Ref]. This setting is available for applications that supply a ramped speed reference external to the drive. “Spd Rate Ref” (3) – Inertia compensation is enabled. The function is configured to use the P596 [Speed Rate Ref]. This parameter should contain a value that represents the rate of change of the motor speed reference. This setting is available for applications that supply a ramped speed reference external to the drive.	Default: 0 = “Disabled” Options: 0 = “Disabled” 1 = “Int Ramp Ref” 2 = “Ext Ramp Ref” 3 = “Spd Rate Ref”	RW	32-bit Integer
		696	Inertia Acc Gain Inertia Acceleration Gain Sets the acceleration gain for Inertia Compensation. A value of 1 produces 100% compensation.	Default: 1.0000 Min/Max: 0.0000 / 2.0000	RW	Real
		697	Inertia Dec Gain Inertia Deceleration Gain Sets the deceleration gain for Inertia Compensation. A value of 1 produces 100% compensation.	Default: 1.0000 Min/Max: 0.0000 / 2.0000	RW	Real
		698	Inert Comp LPFBW Inertia Compensation Low Pass Filter Bandwidth Sets the bandwidth of a low pass filter for inertia compensation. The output of this filter supplies P699 [Inertia Comp Out].	Units: R/S Default: 35.00 Min/Max: 0.00 / 2000.00	RW	Real
		699	Inertia Comp Out Inertia Compensation Output Displays the output of the inertia compensation function. The P699 [Inertia Comp Out] signal is summed with P660 [Spd Reg Out] and becomes an input available to the P313 [Actv SpTqPs Mode] selector. Inertia compensation provides a torque feed forward signal during changes in motor speed reference.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real
		700	Ext Ramped Ref External Ramped Reference This parameter is meant for an external motor speed ramp input signal. This signal will be used by the inertia compensation function when P695 [InertiaComp Mode] has selected Ext Ramp Ref (2).	Units: Hz Default: RPM Min/Max: 0.00 -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
TORQUE CONTROL	Inertia Comp	704	InAdp LdObs Mode Inertia Adaption Load Observer Mode Used to enable operation of either Inertia Adaption or Load Observer. These System Control modes are only available in Vector Control mode when using a motor speed feedback device. The value of P76 [Total Inertia] must be valid in order for these features to work correctly. The P70 [Autotune] setting 4 "Inertia Tune" can be used to measure the System Inertia. Regardless of the Sys Control mode used, the parameter P707 [Load Estimate] is updated for monitoring purposes. The possible settings for Sys Control Sel are: "Disabled" (0) – Both Inertia Adaption and Load Observer functions are disabled. P708 [InertiaTrqAdd] is zero so the motor torque reference is not affected. P707 [Load Estimate] is still valid, provided that the drive is in Vector Mode, using a motor speed feedback device, and a valid P76 [Total Inertia] is used. "InertiaAdapt" (1) – Inertia Adaption function is enabled. The Inertia Adaption function will provide enhanced stability, higher bandwidths and dynamic stiffness. Inertia Adaption is especially useful in systems with a gear-box that become, in effect, disconnected from the load. Inertia Adaption may also be used for motors with very little inertia that otherwise would lack dynamic stiffness, even at high bandwidths. The output of the Inertia Adaption function P708 [InertiaTrqAdd], will subtract from the motor torque reference. "LoadObserver" (2) – Load Observer function is enabled. The Load Observer function removes or greatly reduces the effects of load disturbances and provides quicker system response. The output of the Load Observer function is similar to P707 [Load Estimate], but has a filter setting determined by P711 [Load Observer BW]. The Load Observer's output signal will add to the motor torque reference.	Default: 0 = "Disabled" Options: 0 = "Disabled" 1 = "InertiaAdapt" 2 = "LoadObserver"	RW	32-bit Integer

File	Group	No.	Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Friction Comp	705	Inertia Adapt BW Inertia Adapt Bandwidth Sets the bandwidth of a low pass filter located in the output of the Inertia Adaption function. This parameter should typically be set to match the bandwidth of the drive's speed regulator. This matching setting is automatically made when the Inertia Adaption function is active and the speed regulator bandwidth (P636 [Speed Reg BW]), is set to a non-zero value. If the speed regulator bandwidth is set to zero, then this filter setting must be manually adjusted.	Units:	R/S	RW	Real
				Default:	10.00		
				Min/Max:	1.00 / 1000.00		
		706	InertiaAdaptGain Inertia Adaption Gain Sets a multiplier of system inertia used when the Inertia Adaption function is selected P704 [InAdp LdObs Mode] = 1 "InertiaAdapt." This gain has no effect on the parameter P707 [Load Estimate]. Higher gain values may cause high frequency ringing, while smaller values may cause fundamental load instability. This gain should typically range from 0.3 to 1.0 with 0.5 nominal best. The gain setting of 0.5 is automatically made when the speed regulator bandwidth (P636 [Speed Reg BW]), is set to a non-zero value. If the speed regulator bandwidth is set to zero, then this gain setting must be manually adjusted	Default:	0.500	RW	Real
				Min/Max:	0.300 / 1.000		
		707	Load Estimate Load Estimate Displays an estimated load torque value for the drive. This value is only available in Vector Control mode when using a motor speed feedback device. The load estimate does not include any torque required to accelerate or decelerate the motor. In order to be accurate, the parameter P76 [Total Inertia] must contain a reasonably accurate value.	Units:	%	RO	Real
				Default:	0.00		
TORQUE CONTROL	Friction Comp			Min/Max:	-/+800.00		
		708	InertiaTrqAdd Inertia Torque Adaption Displays the output of the Inertia Adaption function. This value will be subtracted from the motor torque reference, with the result displayed as P689 [Filtered Trq Ref]. The inertia adaption function will be active when operating in Vector Control mode with a motor speed feedback device and P704 [InAdp LdObs Mode] = 1 "InertiaAdapt." A value of 100% represents rated motor torque.	Units:	%	RO	Real
				Default:	0.00		
				Min/Max:	-/+800.00		
		709	IA LdObs Delay Inertia Adaption Load Observer Delay Adjusts a filter setting that is applied to the active motor velocity feedback source. The purpose of this filter is to reduce the level of noise present in the feedback signal. Note that this filter is the same type but separate from the filters used to provide P127 [Pri Vel Feedback] and P130 [Alt Vel Feedback]. The derivative of the Sys Control Delay filtered motor velocity signal will be a Motor Acceleration Feedback signal. The Motor Acceleration Feedback is applied to the Inertia Adaption and Load Observer/ Load Estimate functions. This is moving average type filter that has a delay setting of N, where N is an integer number (0, 1, 2 ...). A setting of zero provides no filtering and no delay. Larger values of N result in more filtering and more delay. The best setting for this filter will depend on the level of noise present in the feedback signal and the bandwidth setting of the velocity regulator.	Default:	3 = "50R/S Noise"	RW	32-bit Integer
				Options:	0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"		
		710	InertAdptFiltBW Inertia Adaption Filter Bandwidth Sets the bandwidth of a low pass filter located in the output of the vector control speed regulator and used in connection with the Inertia Adaption function. The bandwidth of this filter should typically be set to five times the bandwidth of the speed regulator. This setting is automatically made when the Inertia Adaption function is active and the speed regulator bandwidth (P636 [Speed Reg BW]), is set to a non-zero value. If the speed regulator bandwidth is set to zero, then this filter setting must be manually adjusted.	Units:	R/S	RO	Real
TORQUE CONTROL	Friction Comp			Default:	50.00		
				Min/Max:	0.00 / 1000.00		
		711	Load Observer BW Load Observer Bandwidth Sets the bandwidth of a low pass filter located in the output of the Load Observer function. Typical filter settings range from 10 radians/sec to 150 radians/sec with the higher values being more responsive to disturbances but with increased system noise. There is no nominal best setting, but 40 rad/sec is a suggested starting point. This selection may not function well in sloppy geared systems.	Units:	R/S	RO	Real
				Default:	40.00		
				Min/Max:	1.00 / 1000.00		

Drive Position Control File

POSITION CONTROL

Position Cfg/Sts

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																						
		720	PTP PsnRefStatus Point-To-Point Position Reference Status Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>SpdFFRef En</td><td>PTP Int Hold</td><td>Ref Complete</td><td>ZeroFFSpdRef</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td></td></tr></table> 0 = False 1 = True Displays the current operating status of the Pt-Pt Position Planner in the Position Referencing. Bit 0 "ZeroFFSpdRef" – Indicates the speed feed forward reference P783 [PTP Speed FwdRef] is zero. Bit 1 "Ref Complete" – Indicates the position pt-pt feedback P777 [PTP Feedback] reaches the position pt-pt reference P784 [PTP Command], and the speed forward reference P783 [PTP Speed FwdRef] reaches zero. Bit 2 "P2P Int Hold" – Indicates the position pt-pt planner integrator is holding. Read back of the Pt-Pt integral hold bit P770 [PTP Control] Bit 4 "Intgrtr Hold". Bit 3 "SpdFFRef En" – Indicates the speed feed forward reference P783 [PTP Speed FwdRef] is active.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	SpdFFRef En	PTP Int Hold	Ref Complete	ZeroFFSpdRef	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	SpdFFRef En	PTP Int Hold	Ref Complete	ZeroFFSpdRef																																											
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																											
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																												
		721	Position Control Position Control Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Add Spd Ref</td><td>PsnWatch2Dir</td><td>PsnWatch2Arm</td><td>PsnWatch1Dir</td><td>PsnWatch1Arm</td><td>Intgrtr Hold</td><td>Zero Psn</td><td>OffsetVel En</td><td>Offset ReRef</td><td>Intgrtr En</td><td>Reserved</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True Sets bits to enable various position control functions. Bit 1 "Intgrtr En" – Enables integrator operation. Resetting it resets the integrator. Bit 2 "Offset ReRef" – Permits changing the value of position offsets without changing actual position. Bit 3 "OffsetVel En" – Uses the offset velocity P824 [Psn Offset Vel] for the position offset integrator. Sets the offset integrator bit, P724 [Psn Reg Status] Bit 0 "OffsetIntgrtr" when this bit is on. Bit 4 "Zero Psn" – Puts P836 [Psn Actual] in absolute mode with zero position offset. P836 [Psn Actual] sets value of P847 [Psn Fdbk] - the position P725 [Zero Position]. Bit 5 "Intgrtr Hold" – Holds the position integrator in present state. Bit 6 "PsnWtch1Arm" – Enables the position watch 1. Resetting this bit clears the position watch 1 detection P724 [Psn Reg Status] Bit 9 "PsnW1Detect". Bit 7 "PsnWatch1Dir" – Causes the position watch 1 output to be set when P746 [PsnWatch 1 DtgtIn] is greater than a set-point selected by the position watch 1 selection P745 [PsnWatch1 Select]. Resetting this bit causes the position watch 1 output to be set when P746 [PsnWatch 1 DtgtIn] is less than a set-point selected by the position watch 1 selection P745 [PsnWatch1 Select]. Bit 8 "PsnWtch2Arm" – Enables the position watch 2. Resetting this bit clears the position watch 2 detection P724 [Psn Reg Status] Bit 10 "PsnW2Detect". Bit 9 "PsnWatch2Dir" – Causes the position watch 2 output to be set when P749 [PsnWatch2 DtgtIn] is greater than a set-point selected by the position watch 2 selection P748 [PsnWatch2 DtgtIn]. Resetting this bit causes the position watch 2 output to be set when P749 [PsnWatch2 DtgtIn] is less than a set-point selected by the position watch 2 selection P748 [PsnWatch2 DtgtIn]. Bit 10 "Add Spd Ref" – Adds the speed reference to the output of the position control, when in position control mode.		Reserved	Reserved	Reserved	Reserved	Reserved	Add Spd Ref	PsnWatch2Dir	PsnWatch2Arm	PsnWatch1Dir	PsnWatch1Arm	Intgrtr Hold	Zero Psn	OffsetVel En	Offset ReRef	Intgrtr En	Reserved	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0						
	Reserved	Reserved	Reserved	Reserved	Reserved	Add Spd Ref	PsnWatch2Dir	PsnWatch2Arm	PsnWatch1Dir	PsnWatch1Arm	Intgrtr Hold	Zero Psn	OffsetVel En	Offset ReRef	Intgrtr En	Reserved																																												
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																												
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																												
		722	Psn Selected Ref Position Selected Reference Indicates output of the position referencing. When the Spd/Torq/Pos mode P313 [Actv SpTqPs Mode] is the position direct mode (Option 10), the value of the position direct reference P767 [Psn Direct Ref] appears on this parameter. When the Spd/Torq/Pos mode P313 [Actv SpTqPs Mode] is the position pt-pt mode (Option 7) or the speed/position profiler mode (Option 6), the position pt-pt reference P776 [PTP Reference] appears on this parameter.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer																																																						
		723	Psn Command Position Command Indicates final accumulated command to the position regulator. When the position regulator is not active, this parameter is initialized to P836 [Psn Actual].	Default: 0 Min/Max: -2147483648 / 2147483647	RO	32-bit Integer																																																						

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
POSITION CONTROL	Position Cfg/Sts	724	Psn Reg Status Position Regulator Status Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>InPsn Detect</td><td>PsnW2Detect</td><td>PsnW1Detect</td><td>Intgrtr Hold</td><td>Psn Reg Actv</td><td>Spd Lmt Hi</td><td>Spd Lmt Lo</td><td>Integ Lmt Hi</td><td>Integ Lmt Lo</td><td>Psn Intgrtr</td><td>Offset ReRef</td><td>OffsetIntgrtr</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True Indicates status of position control logic. Bit 0 "OffsetIntgrtr" – Indicates the position offset Integrator is active with the position offset integrator bit P721 [Position Control] Bit 3 "OffsetVel En" is on. Bit 1 "Offset ReRef" – Indicates the position offset re-referencing is active with the position offset re-referencing bit P721 [Position Control] Bit 2 "Offset ReRef" is on. Bit 2 "Psn Intgrtr" – Indicates the position integrator is active with the position integrator bit P721 [Position Control] Bit 1 "Intgrtr En" is on. Bit 3 "Integ Lmt Lo" – Indicates the position integrator is at the low limit. Bit 4 "Integ Lmt Hi" – Indicates the position integrator is at the high limit. Bit 5 "Spd Lmt Lo" – Indicates the position regulator output (speed) is at the low limit. Bit 6 "Spd Lmt Hi" – Indicates the position regulator output (speed) is at the high limit. Bit 7 "Psn Reg Actv" – Indicates the position regulator is active Bit 8 "Intgrtr Hold" – Indicates the position Integrator is held in present state Bit 9 "PsnW1Detect" – Indicates the position watch 1 has detected motor position equal to its setpoint, from the proper direction. Bit 10 "PsnW2Detect" – Indicates the position watch 2 has detected motor position equal to its setpoint, from the proper direction. Bit 11 "InPsn Detect" – Indicates P835 [Psn Error] is within the position band specified by the in-position band P726 [In Pos Psn Band]		Reserved	Reserved	Reserved	Reserved	InPsn Detect	PsnW2Detect	PsnW1Detect	Intgrtr Hold	Psn Reg Actv	Spd Lmt Hi	Spd Lmt Lo	Integ Lmt Hi	Integ Lmt Lo	Psn Intgrtr	Offset ReRef	OffsetIntgrtr	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	InPsn Detect	PsnW2Detect	PsnW1Detect	Intgrtr Hold	Psn Reg Actv	Spd Lmt Hi	Spd Lmt Lo	Integ Lmt Hi	Integ Lmt Lo	Psn Intgrtr	Offset ReRef	OffsetIntgrtr																																						
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
725	Zero Position Zero Position Sets the absolute user zero position. When the zero position bit P721 [Position Control] Bit 4 "Zero Psn" is set, P836 [Psn Actual] accumulates the value of P847 [Psn Fdbk] - the P725 [Zero Position], and P836 [Psn Actual] becomes zero when P847 [Psn Fdbk] is at the zero position. The homing function also sets the value after homing process is completed.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer																																																				
726	In Pos Psn Band In Positive Position Bandwidth Sets the overall bandwidth of the in position detector. The detector sets the in-position detect bit P724 [Psn Reg Status] Bit 11 "InPsn Detect" when P835 [Psn Error] is within this position band for a sufficient time specified by the in-position dwell time P727 [In Pos Psn Dwell]. A modest hysteresis count is added to the position bandwidth after the position error is within specified limits.	0 0 / 2147483647	RW	32-bit Integer																																																				
727	In Pos Psn Dwell In Positive Position Dwell Sets dwell time for the in position detector. Position error must be within the value specified by the in-position band P726 [In Pos Psn Band] for this amount of time before the in-position detector sets the in-position detect bit P724 [Psn Reg Status] Bit 11 "InPsn Detect". A momentary out-of-position indication will reset the internal timer and clear the in-position detect bit P724 [Psn Reg Status] Bit 11 "InPsn Detect".	Default: 0.0040 Min/Max: 0.0001 / 10.0000	RW	Real																																																				

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
POSITION CONTROL	Position Homing	730	Homing Status Homing Status Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>At Home</td><td>Homing</td><td>Home Enabled</td><td>Home Request</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> Indicates status of position control logic. Bit 0 "Home Request" – Indicates the homing function is requested. The homing function is requested by the homing configuration bits P731[Homing Control]. Bit 1 "Home Enabled" – Indicates the homing function is enabled. This bit is set when the homing function is requested and the drive starts. Bit 2 "Homing" – Indicates the drive is heading to home position. Bit 3 "At Home" – Indicates the drive is at home position.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	At Home	Homing	Home Enabled	Home Request	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = Disabled 1 = Enabled		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	At Home	Homing	Home Enabled	Home Request																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		731	Homing Control Homing Control Sets bits to configure the homing function. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Hold At Home</td><td>Home DI Inv</td><td>Homing Alarm</td><td>Psn Redefine</td><td>Return Home</td><td>Home Marker</td><td>Home DI</td><td>Find Home</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> Sets bits to configure the homing function. Bit 0 "Find Home" – Puts the drive in the homing mode. Setting this bit requests the homing function and sets homing request bit P730 [Homing Status] Bit 0 "Home Request". This bit needs a toggle to reset the the homing function. Bit 1 "Home DI" – Configures the homing function to use a switch (digital input). When this bit is on and Bit 2 "Home Marker" is off, the homing function is configured as home switch mode. When this bit is on and Bit 2 "Home Marker" is on, the homing function is configured as home marker-switch mode. Bit 2 "Home Marker" – Configures the homing function to use a marker input. When this bit is on and Bit 1 "Home DI" is off, the homing function is configured as home marker mode. When this bit is on and Bit 1 "Home DI" is on, the homing function is configured as home marker-switch mode. Bit 3 "Return Home" – Configures the homing function as return home mode. The drive returns to the actual home position P737 [Actual Home Psn]. Bit 4 "Psn Redefine" – Sets the position feedback P847 [Psn Fdbk] to the actual home position P737 [Actual Home Psn]. Bit 5 "Homing Alarm" – Enables the home running alarm when the homing function is active. Bit 6 "Home DI Inv" – Changes polarity of the switch input (digital input). Bit 7 "Hold At Home" – Configures the drive to return to the home position after completing the homing function. A satrt command is required for the drive to run again.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Hold At Home	Home DI Inv	Homing Alarm	Psn Redefine	Return Home	Home Marker	Home DI	Find Home	Default	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = Disabled 1 = Enabled		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Hold At Home	Home DI Inv	Homing Alarm	Psn Redefine	Return Home	Home Marker	Home DI	Find Home																																							
Default	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									
732	DI Find Home Digital Input Find Home Sets a digital input port for the "Find Home" function.	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer																																																					
733	DI Redefine Psn Digital Input Redefine Position Sets a digital input port for the redefine position function. The digital input assigned by this parameter is equivalent to the position redefine bit P731 [Homing Control] Bit 4 "Psn Redefine".	Units: 0.00 Default: 0.00 / 159999.15 Min/Max:	RW	32-bit Integer																																																					
734	DI OL Home Limit Digital Input Open Loop Home Limit Sets a digital input port for the limit switch of open loop homing function. Polarity of digital input (rising or falling edge) is specified by the home DI invert bit [P701 Bit06].	Units: 0.00 Default: 0.00 / 159999.15 Min/Max:	RW	32-bit Integer																																																					
		735	 Find Home Speed Find Home Speed Sets the speed and direction that are active when the "Find Home" moves P731 [Homing Control] Bit 6 "Home DI Inv" is active. The sign of the value defines direction ("+" = Forward, "-" = Reverse).	Units: Hz RPM Default: P27 [Motor NP Hz] x 0.1 P28 [Motor NP RPM] x 0.1 Min/Max: P27 [Motor NP Hz] x 0.5 P28 [Motor NP RPM] x 0.5	RW	Real																																																			

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Homing	736	Find Home Ramp Find Home Ramp  Sets the rate of acceleration and deceleration of the Find Home moves.	Units: Secs Default: 10.00 Min/Max: 0.01 / 6554.00	RW	Real
		737	Actual Home Psn Actual Home Position Indicates actual home position after the homing function is complete. The value in this parameter displays the raw position feedback data at home position.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		738	User Home Psn User Home Position Sets user-defined home position. After the homing function is completed, the following parameters are updated with this parameter value; P723 [Psn Command], P815 [Psn Ref EGR Out], P836 [Psn Actual], P837 [Psn Load Actual].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Watch	745 748	PsnWatch1 Select PsnWatch2 Select Position Watch 1 Select Position Watch 2 Select Selects a position feedback source that is compared to the position watch detect-input P746 [PsnWatch1 DtgtIn], P749 [PsnWatch2 DtgtIn].	Default: 847 Options: 1 / 159999	RW	32-bit Integer
		746 749	PsnWatch1 DtgtIn PsnWatch2 DtgtIn Position Watch 1 Detect Input Position Watch 2 Detect Input Provides position feedback source for the position watch function. The position watch function is enabled and configured by the position control configuration P721 [Position Control]. The position watch function compares this value to the position watch set point P747 [PsnWatch1 Stpt], P750 [PsnWatch2 Stpt] when this parameter P746, P749 is selected by the position watch select P745 [PsnWatch1 Select], P748 [PsnWatch2 Select]. The position detect bit P724 [Psn Reg Status] Bit 9 "PsnW1Detect", Bit 10 "PsnW2Detect" is set when the appropriate condition is satisfied.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		747 750	PsnWatch1 Stpt PsnWatch2 Stpt Position Watch 1 Setpoint Position Watch 2 Setpoint Provides set point for the position watch function. The position watch function is enabled and configured by P721 [Position Control]. The position watch function compares this value to the position feedback source selected by the position watch select P745 [PsnWatch1 Select], P748 [PsnWatch2 Select]. The position detect bit P724 [Psn Reg Status] Bit 9 "PsnW1Detect", Bit 10 "PsnW2Detect" is set when the appropriate condition is satisfied.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Direct	765	Psn Ref Select Position Reference Select Selects a source data for the direct position reference.	Default: 759 Options: 1 / 159999	RW	32-bit Integer
		766	Psn Direct Stpt Position Direct Setpoint Provides set point for the direct position reference. This parameter provides position reference to the position regulator when the Spd/Torq/Pos mode P313 [Actv SpTqPs Mode] is the position direct mode (Option 10) and the position reference select P765 [Psn Ref Select] is the set point.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		767	Psn Direct Ref Position Direct Reference Indicates position direct reference selected by the position reference select P765 [Psn Ref Select].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
POSITION CONTROL	Point to Point	770	PTP Control Point-To-Point Control Sets bits to configure the point-point position control. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Ref Sync</td><td>Ref Pause</td><td>Intgrtr Hold</td><td>Preset Psn</td><td>Reverse Move</td><td>Move</td><td>Vel Override</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True Bit 0 "Vel Override" – applies the velocity overload P788 [PTP Vel Override] to the forward velocity limit P785 [PTP Fwd Vel Lmt] and the reverse velocity limit P786 [PTP Rev Vel Lmt] as a gain. When the velocity overload P788 [PTP Vel Override] is 1.1 and the forward velocity limit P785 [PTP Fwd Vel Lmt] is 30 Hz, the bit sets the maximum forward velocity to 33 Hz. Bit 1 "Move" – sets scaled point-point position reference to the point-point position command P784 [PTP Command]. When the point-point mode selection P771 [PTP Mode] is absolute mode (Option 0), the absolute position is set to the point-point position command P784 when the bit rises. When the point-point mode selection P771 [PTP Mode] is index mode (Option 1), the index position is set to the point-point position command P784 when the bit rises. Bit 2 "Reverse Move" – changes direction of the index position when the point-point mode selection P771 [PTP Mode] is index mode (Option 1). Bit 3 "Preset Psn" – sets index preset P779 [PTP Index Preset] to the point-point position command P784 [PTP Command] when the point-point mode selection P771 [PTP Mode] is index mode (Option 1). Bit 4 "Intgrtr Hold" – holds integrator in the velocity control. Bit 5 "Ref Pause" – pauses functioning of the point-point control. The point-point speed forward reference becomes zero, and the position selected reference P722 [Psn Selected Ref] keeps current position. Bit 6 "Ref Sync" – sets initial value to the point-point feedback P777 [PTP Feedback].		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Ref Sync	Ref Pause	Intgrtr Hold	Preset Psn	Reverse Move	Move	Vel Override	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Ref Sync	Ref Pause	Intgrtr Hold	Preset Psn	Reverse Move	Move	Vel Override																																						
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
771	PTP Mode Point-To-Point Mode Selects point-point position mode. The point-point position control is configured with the following selections. "Absolute" (0) – Absolute position mode "Index" (1) – Index position mode "Immediate" (2) – Absolute immediate position mode	Default: 0 = "Absolute" Options: 0 = "Absolute" 1 = "Index" 2 = "Immediate"	RW	32-bit Integer																																																				
772	DI Indx Step Digital Input Index Step Sets a digital input port for the index position move. The digital input assigned by this parameter is equivalent to the point-point move bit P770 [PTP Control] Bit 1 "Move" when the point-point mode P771 [PTP Mode] is selected to the index position mode (Option 1).	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer																																																				

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Point to Point	773	DI Indx StepRev Digital Input Index Step Reverse Sets a digital input port for the index position reverse move. The digital input assigned by this parameter is equivalent to the point-point reverse move bit P770 [PTP Control] Bit 2 "Reverse Move" when the point-point mode P771 [PTP Mode] is selected to the index position mode (Option 1).	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer
		774	DI Indx StepPrst Digital Input Index Step Preset Sets a digital input port for the index preset position. The digital input assigned by this parameter is equivalent to the point-point preset position bit P770 [PTP Control] Bit 3 "Preset Psn" when the point-point mode P771 [PTP Mode] is selected to the index position mode (Option 1).	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer
		775	PTP Ref Sel Point-To-Point Reference Select Selects a point-point reference source that applies to the point-point position control.	Default: 780 Options: 1 / 159999	RW	32-bit Integer
		776	PTP Reference Point-To-Point Reference Indicates output of the point-point position control as a reference of the position control. When the speed/torque/position mode P313 [Actv SpTqPs Mode] is selected to the point-point mode (Option 7) or the profiler mode (Option 6), this parameter value appears on the position selected reference P722 [Psn Selected Ref].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		777	PTP Feedback Point-To-Point Feedback Indicates position feedback in the point-point position control.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		778	PTP Ref Scale Point-To-Point Reference Scale Provides count per scale value for the point-point position reference. The value is a multiplier for the point-point reference source selected by the reference selection P775 [PTP Ref Sel].	Default: 1.00 Min/Max: -/+220000000.00	RW	Real
		779	PTP Index Preset Point-To-Point Index Preset Provides pre-set index value. The value sets to the point-point position command P784 [PTP Command] when the point-point mode is index mode P771 [PTP Mode] and the preset position bit P770 [PTP Control] Bit 3 "Preset Psn" is on.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		780	PTP Setpoint Point-To-Point Setpoint Provides set point for the point-point position control. The value applies to the point-point control when the point-point reference selection P775 [PTP Ref Sel] is P780.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		781	PTP Accel Time Point-To-Point Acceleration Time Provides the ramp time for acceleration (time to go from zero to speed limit).	Units: Secs Default: 10.00 Min/Max: 0.00 / 3600.00	RW	Real
		782	PTP Decel Time Point-To-Point Deceleration Time Provides the ramp time for deceleration (time to go from speed limit to zero).	Units: Secs Default: 10.00 Min/Max: 0.00 / 3600.00	RW	Real
		783	PTP Speed FwdRef Point-To-Point Speed Forward Reference Indicates speed reference output from the point-point position control. Typically this parameter is used by the drive speed loop.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real
		784	PTP Command Point-To-Point Command Indicates position command for the point-point position control. The source of the position command is selected by the speed/torque/position mode P313 [Actv SpTqPs Mode].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Point to Point	785	PTP Fwd Vel Lmt Point-To-Point Forward Velocity Limit Provides the maximum forward speed reference limit.	Units: Hz RPM Default: P27 [Motor NP Hertz] x 0.5 P28 [Motor NP RPM] x 0.5 Min/Max: 0.00/P27 [Motor NP Hertz] 0.00/P28 [Motor NP RPM]	RW	Real
		786	PTP Rev Vel Lmt Point-To-Point Reverse Velocity Limit Provides the maximum reverse speed reference limit.	Units: Hz RPM Default: P27 [Motor NP Hertz] x 0.5 P28 [Motor NP RPM] x 0.5 Min/Max: 0.00/P27 [Motor NP Hertz] 0.00/P28 [Motor NP RPM]	RW	Real
		787	PTP S Curve Point-To-Point S Curve Provides the amount of time that is applied to the S Curve.	Units: Secs Default: 0.500 Min/Max: 0.000 / 4.000	RW	Real
		788	PTP Vel Override Point-To-Point Velocity Override Provides multiplier to both forward P785 [PTP Fwd Vel Lmt] and reverse P786 [PTP Rev Vel Lmt] speed limits. This parameter applies to the speed limits when the override bit P770 [PTP Control] Bit 0 "Vel Override" is on.	Default: 1.00 Min/Max: 0.20 / 1.50	RW	Real
		789	PTP Egr Mult Point-To-Point Electronic Gear Ratio Multiply EGR multiplier (numerator) for position index output. The output applies to the point-to-point command P784 [PTP Command].	Default: 1 Min/Max: -/+2000000	RW	32-bit Integer
		790	PTP Egr Div Point-To-Point Electronic Gear Ratio Divide EGR divider (denominator) for position index output. The output applies to the point-to-point command P784 [PTP Command].	Default: 1 Min/Max: 1 / 2000000	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
POSITION CONTROL	Phase Lock Loop	795	PLL Control Phase Locked Loop Control Sets bits to configure the phase locked loop control. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Prof Enable</td><td>PTP Enable</td><td>PCAM Enable</td><td>Accel Comp</td><td>Ext Vel FF</td><td>Velocity FF</td><td>PLL Enable</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> Bit 0 "PLL Enable" – enables the phase locked loop control. Bit 1 "Velocity FF" – enables the velocity feed forward path. Bit 2 "Ext Vel FF" – enables the external velocity feed forward through the PLL external speed reference selected by the PLL external speed selection P796 [PLL Ext Spd Sel]. Bit 3 "Accel Comp" – enables providing an element of acceleration compensation to the feed forward branch. This is not recommended for use with external inputs because of increased noise. Bit 4 "PCAM Enable" – enables PCAM function with the PLL function. Bit 5 "PTP Enable" – enables point-to-point fuction with the PLL function. Bit 6 "Prof Enable" – enables profiler function with the PLL function. Only bits 4, 5, and 6 allow associating with the PLL function.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Prof Enable	PTP Enable	PCAM Enable	Accel Comp	Ext Vel FF	Velocity FF	PLL Enable	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = False 1 = True		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Prof Enable	PTP Enable	PCAM Enable	Accel Comp	Ext Vel FF	Velocity FF	PLL Enable																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									
		796	PLL Ext Spd Sel Phase Locked Loop External Speed Select Selects an external speed reference source.	Default: 797 Options: 1 / 159999	RW	32-bit Integer																																																			

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Phase Lock Loop	797	PLL Ext Spd Stpt Phase Locked Loop External Speed Setpoint Provides external speed reference. This parameter is a velocity feed forward input that is selected by the external speed select P796 [PLL Ext Spd Sel].	Default: 0.00 Min/Max: -/+220000000.00	RW	Real
		798	PLL Ext SpdScale Phase Locked Loop External Speed Scale Sets scale factor to the external speed reference selected by the external speed select P796 [PLL Ext Spd Sel]. This parameter is used to properly scale the velocity feed forward. Adjust for zero average at the filtered position output P806 [PLL Psn Out Fltr] while running at moderate speed.	Default: 1.00 Min/Max: -/+220000000.00	RW	Real
		799	PLL Psn Ref Sel Phase Locked Loop Position Reference Select Selects a position reference source.	Default: 800 Options: 1 / 159999	RW	32-bit Integer
		800	PLL Psn Stpt Phase Locked Loop Position Setpoint Provides position reference when the position reference select P799 [PLL Psn Ref Sel] selects this parameter.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		801	PLL BW Phase Locked Loop Bandwidth Sets internal bandwidth of the PLL function response. The setting for very noisy mechanical systems could range from 1 to 10 (r/s) while well-behaved high line count input devices could range upwards of 100 (r/s). Higher bandwidths will quickly resolve tracking errors while the lower bandwidths will take longer to settle into a steady state. Some adjustment will be necessary to effect the best compromise between noise and tracking response.	Units: R/S Default: 20.00 Min/Max: 0.00 / 8000.00	RW	Real
		802	PLL LPFilter BW Phase Locked Loop Low Pass Filter Bandwidth Sets low pass filter bandwidth. The filter has two functions: - Basic noise reduction of input velocity. - Timed delay of input when feed forward is provided to an external master reference other than an input encoder. The filter low pass bandwidth should be set for best tracking which occurs when the filter output coincides with the loop filter output of PLL. Usually that means setting its bandwidth to the bandwidth of the master reference drive.	Units: R/S Default: 50.00 Min/Max: 0.00 / 8000.00	RW	Real
		803	PLL Virt Enc RPM Phase Locked Loop Virtual Encoder Revolutions Per Minute Sets RPM of the virtual output device. The value determines the 1 P.U. velocity for the speed out P807 [PLL Speed Out] and does not affect performance.	Units: RPM Default: 1750.00 Min/Max: 1.00 / 40000.00	RW	Real
		804	PLL EPR Input Phase Locked Loop Edges Per Revolution Input Sets edges per revolution of the physical input device. Using the highest line count device possible makes insure the smoother PLL operation.	Default: 1048576 Min/Max: 1 / 67108864	RW	32-bit Integer
		805	PLL Rvls Input Phase Locked Loop Revolutions Input Sets revolution of the input encoder. This parameter must be coordinated with the revolution of the output encoder P812 [PLL Rvls Output] to resolve the gear-ratio between input revolutions and output (virtual) revolutions. The ratio of input to output revolutions can always be resolved into integer values and should be reduced to their lowest common factor.	Default: 1 Min/Max: 1 / 1000000	RW	32-bit Integer
		806	PLL Psn Out Fltr Phase Locked Loop Position Output Filter Indicates internal low pass filter output. This parameter is normally used to properly scale an external velocity reference. See description of the external speed scale P798 [PLL Ext SpdScale].	Default: 0.00 Min/Max: -/+220000000.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Phase Lock Loop	807	PLL Speed Out Phase Locked Loop Speed Output Indicates velocity output. This parameter is used as a velocity feed forward. It is precisely in phase with the physical input device. The virtual encoder RPM P803 [PLL Virt Enc RPM] determines the RPM at 1 P.U. of this parameter.	Default: 0.00 Min/Max: -/+220000000.00	RW	Real
		808	PLL Speed OutAdv Phase Locked Loop Speed Output Advanced Indicates velocity advanced output. This parameter is one velocity reference sample in advance of the speed output P807 [PLL Speed Out].	Default: 0.00 Min/Max: -/+220000000.00	RW	Real
		809	PLL Enc Out Phase Locked Loop Encoder Output Indicates position output. This parameter is precisely in phase with the input physical device.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		810	PLL Enc Out Adv Phase Locked Loop Encoder Output Advanced Indicates position advanced output. This parameter is one position sample in advance of the position output P809 [PLL Enc Out].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		811	PLL EPR Output Phase Locked Loop Edges Per Revolution Output Sets edges per revolution of virtual the physical output device.	Default: 1048576 Min/Max: 1 / 67108864	RW	32-bit Integer
		812	PLL Rvls Output Phase Locked Loop Revolutions Output Sets revolution of the output encoder. This parameter must be coordinated with the revolution of the input encoder P805 [PLL Rvls Input] to resolve the gear-ratio between input revolutions and output (virtual) revolutions. The ratio of input to output revolutions can always be resolved into integer values and should be reduced to their lowest common factor.	Default: 1 Min/Max: 1 / 2000000	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Electronic Gear	815	Psn Ref EGR Out Position Reference Electronic Gear Ratio Output Indicates accumulated output of the position reference electronic gear ratio (EGR) function. When the position regulator is not enabled, this parameter is initialized to P836 [Psn Actual].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		816	Psn EGR Mult Position Electronic Gear Ratio Multiplier Sets integer value in the numerator of the EGR function that is precision multiplied by the position reference. A negative value will effect a change in polarity.	Default: 1 Min/Max: -/+2000000	RW	32-bit Integer
		817	Psn EGR Div Position Electronic Gear Ratio Division Sets integer value in the denominator of the EGR function that divides into the product of the numerator and the position reference. Remainders are accumulated and not lost.	Default: 1 Min/Max: 1 / 2000000	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Offset	820	Psn Offset 1 Sel Position Offset 1 Select Selects a Position Offset 1 source.	Default: 821 Min/Max: 1 / 159999	RW	32-bit Integer
		821	Psn Offset 1 Position Offset 1 Provides position reference offset, which is summed after the EGR and used to trim the phase of the position reference. A step in the offset position will be internally rate limited and added to the reference position. The rate of correction is set by the offset velocity P824 [Psn Offset Vel]. The initial value of this parameter is latched upon position enable without causing a change in reference. Subsequent changes to this value will be relative to the latched value. See the offset re-referencing bit P721 [Position Control] Bit 2 "Offset ReRef".	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		822	Psn Offset 2 Sel Position Offset 2 Select Selects a Position Offset 2 source.	Default: 823 Min/Max: 1 / 159999	RW	32-bit Integer
		823	Psn Offset 2 Position Offset 2 Select Provides another position reference offset, which is summed with the position offset 1 P821 [Psn Offset 1] and used to trim the phase of the position reference. The rate of correction is set by the offset velocity P824 [Psn Offset Vel].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		824	Psn Offset Vel Position Offset Velocity Sets speed of position offset. A position offset command will not exceed this speed. The actual speed of offset is limited to a maximum value of $1/(\text{inertia} * \text{pos gain})$ so as not to cause a torque pulse greater than 1 per unit. The speed will change exponentially.	Units: Hz RPM Default: P27 [Motor NP Hertz] x 0.005 P28 [Motor NP RPM] x 0.005 Min/Max: 0.00/P27 [Motor NP Hertz] 0.00/P28 [Motor NP RPM]	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Ld Psn Fdbk Scal	825	LdPsn Fdbk Mult Load Position Feedback Multiplier Sets numerator of the load EGR function. It is multiplied by the position load feedback selected by the load feedback select P136 [Load Psn FdbkSel] and divided by the load feedback divider P826 [LdPsn Fdbk Div] to reflect the load pulse count to the motor (effectively removing the gear box ratio). The accumulated position values P836 [Psn Actual] and the position load actual P837 [Psn Load Actual] - will be equal if the ratio is set properly. There may be some difference due to lost motion in the gear train, but there should not be an accumulated difference. It is often necessary to count gear teeth as gear box manufacturers often approximate exact ratios with decimal numbers. Enter a negative value in the numerator to account for reversed motor rotation.	Default: 1 Min/Max: -/+1000000	RW	32-bit Integer
		826	LdPsn Fdbk Div Load Position Feedback Division Sets denominator of the load EGR function.	Default: 1 Min/Max: 1 / 2000000	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Reg	830	PsnNtchFiltrFreq Position Notch Filter Frequency Sets the center frequency of the position notch filter.	Units: Hz Default: 0.00 Min/Max: 0.00 / 500.00	RW	Real
		831	PsnNtchFiltrDepth Position Notch Filter Depth Sets the depth for the position notch filter. Attenuation is the ratio of the output to the input at the notch frequency P830 [PsnNtchFiltrFreq]. The attenuation of 30 means that the notch output is 1/30th of the input at the specified frequency. Calculation: Attenuation = Input / Output	Default: 50.00 Min/Max: 0.00 / 500.00	RW	Real
		832	Psn Out Fitr Sel Position Output Filter Select Selects a type of lead-lag filter for position regulator speed output. This parameter sets filter gain P833 [Psn Out Fitr Sel] and bandwidth P834 [Psn Out Fitr BW] according to the selected type. "Off" (0) – P833 = 1.000, P834 = 0.00 "Custom" (1) – P833 = user setting, P834 = user setting	Default: 0 = "Off" Options: 0 = "Off" 1 = "Custom"	RW	32-bit Integer
		833	Psn Out FitrGain Position Output Filter Gain Sets lead-lag filter gain. A default value is sets when the filter type selection P832 [Psn Out Fitr Sel] is not Custom (Option 1). See the filter type selection P832.	Default: 3.000 Min/Max: –/+5.000	RW	Real
		834	Psn Out Fitr BW Position Output Filter Bandwidth Sets lead-lag bandwidth. A default value is sets when the filter type selection P832 [Psn Out Fitr Sel] is not Custom (Option 1). See the filter type selection P832.	Units: R/S Default: 50.00 Min/Max: 0.00 / 500.00	RW	Real
		835	Psn Error Position Error Indicates actual position error in motor pulse counts as a 32-bit integer. When the position regulator is not enabled, the value is initialized to zero. When the position regulator is enabled, the value contains the running value of position error between the position command P723 [Psn Command] and P836 [Psn Actual].	Default: 0 Min/Max: –2147483648 / 2147483647	RO	32-bit Integer
		836	Psn Actual Position Actual Indicates accumulated motor position as a 32-bit integer. It tracks the position feedback P847 [Psn Fdbk]. When P721 [Position Control] Bit 4 "Zero Psn" is set, this parameter accumulates the value of P847 [Psn Fdbk] - the P725 [Zero Position]. When P721 [Position Control] Bit 4 "Zero Psn" is off, this parameter accumulates the value of P847 [Psn Fdbk].	Default: 0 Min/Max: –2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Reg	837	Psn Load Actual Position Load Actual Indicates accumulated output of the load gear ratio as a 32-bit integer and forms the primary feedback for the position regulator integral channel. It is very important that the load gear ratio be precisely set such that the delta pulse count of one motor revolution equals the delta pulse count of this parameter.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		838	Psn Reg Ki Position Regulator Ki Sets position regulator integral gain as measured from position error to velocity reference. The value has gain units of (P.U. velocity/sec) / (P.U. position) and is unit compatible with the position regulator proportional gain P839 [Psn Reg Kp]. An integral gain of 25 means that a per unit position error of 0.1 sec will effect a 2.5 P.U. speed change per sec.	Default: 4.00 Min/Max: 0.00 / 1000.00	RW	Real
		839	Psn Reg Kp Position Regulator Kp Sets position regulator gain as measured from position error to speed reference. The gain number is identically equal to position regulator bandwidth in rad/sec. For example: A gain of 10 means that a P.U. position error of 0.1 sec. will effect a 1.0 P.U. speed change (1 per unit position error is the distance traveled in 1 sec. at base motor speed). The maximum value of this parameter is typically 1/3 of the speed bandwidth (rad/sec) but may be set considerably higher with careful tuning of the speed regulator output lead/lag filter.	Units: R/S Default: 4.00 Min/Max: 0.00 / 200.00	RW	Real
		840	PReg Pos Int Lmt Position Regulation Positive Integral Limit Sets positive limit of the position regulator integral output.	Units: % Default: 100.00 Min/Max: 0.00 / 800.00	RW	Real
		841	PReg Neg Int Lmt Position Regulation Negative Integral Limit Sets negative limit of the position regulator integral output.	Units: % Default: -100.00 Min/Max: -800.00 / 0.00	RW	Real
		842	PsnReg IntgrlOut Position Regulation Integral Output Indicates output of the position regulator integral channel after the limit function.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real
		843	PsnReg Spd Out Position Regulation Speed Output Indicates final output of the position regulator.	Units: Hz RPM Default: 0.00 Min/Max: -/+P27 [Motor NP Hertz] x 8 -/+P28 [Motor NP RPM] x 8	RW	Real
		844	PReg Pos Spd Lmt Position Regulation Positive Speed Limit Sets positive speed limit of total position regulator output.	Units: % Default: 10.00 Min/Max: 0.00 / 800.00	RW	Real
		845	PReg Neg Spd Lmt Position Regulation Negative Speed Limit Sets negative speed limit of total position regulator output.	Units: % Default: -10.00 Min/Max: -800.00 / 0.00	RW	Real
		846	Psn Reg Droop Position Regulation Droop Sets position droop which limits the low frequency gain of the position regulators integral channel to a value of (1/droop). This parameter provides a means to fine tune the stability for load mounted feedback devices where lost motion may cause a problem. Typically, the position droop will have a value that is less than (1/position gain), perhaps even zero for tightly coupled loads. The position droop has a gain value of (P.U. position) / (P.U. speed). Note: 1 P.U. position is the distance traveled in 1 sec. at base motor speed.	Units: Secs Default: 0.00 Min/Max: 0.00 / 25.00	RW	Real
		847	Psn Fdbk Position Feedback Indicates the accumulated pulse count of the position feedback selected by the position feedback select [P135].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
COMMUNICATION	Security	885	Port Mask Act Port Mask Active Bits 0-5 indicate status for DPI port communication. Bit 15 “Security” indicates when security software controls the parameter. Options <table><tr><td>Security</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Digital In</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Security	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		Security	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In																																						
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		886	Logic Mask Act Logic Mask Active Indicates status of the logic mask for DPI ports. When bit 15 “Security” is set, network security controls the logic mask instead of P324 [Logic Mask]. Options <table><tr><td>Security</td><td>Port 14</td><td>Port 13</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Digital In</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Security	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		Security	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In																																						
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		887	Write Mask Act Write Mask Active Status of write access for DPI ports. When bit 15 “Security” is set, network security controls the write mask instead of [Write Mask]. Options <table><tr><td>Security</td><td>Port 14</td><td>Port 13</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 9</td><td>Port 8</td><td>Port 7</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Reserved</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Security	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Port 9	Port 8	Port 7	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Reserved	Default	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		Security	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Port 9	Port 8	Port 7	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Reserved																																						
Default	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0																																								
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
888	 Write Mask Cfg Write Mask Configuration Enables/disables write access (parameters, links, etc.) for DPI ports. Changes to this parameter only become effective when power is cycled, the drive is reset or bit 15 of P887 [Write Mask Actv], transitions from “1” to “0.” Options <table><tr><td>Reserved</td><td>Port 14</td><td>Port 13</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 9</td><td>Port 8</td><td>Port 7</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Reserved</td></tr><tr><td>Default</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Port 9	Port 8	Port 7	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Reserved	Default	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Port 9	Port 8	Port 7	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Reserved																																								
Default	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0																																								
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								

File	Group	No.	Name Description	Values	Read-Write	Data Type
COMMUNICATION	DPI Datalinks	895 896	Data In A1 Data In A2  Data Input A1, A2 Parameter number whose value will be written from a communications device data table.	Default: 0 (0 = "Disabled") Min/Max: 0 / 159999	RW	32-bit Integer
		897 898	Data In B1 Data In B2 Data Input B1, B2 Parameter number whose value will be written from a communications device data table.	See [Data In A1].		
		899 900	Data In C1 Data In C2 Data Input C1, C2 Parameter number whose value will be written from a communications device data table.	See [Data In A1].		
		901 902	Data In D1 Data In D2 Data Input D1, D2 Parameter number whose value will be written from a communications device data table.	See [Data In A1].		
		905 906	Data Out A1 Data Out A2 Data Output A1, A2 Parameter number whose value will be written to a communications device data table.	Default: 0 (0 = "Disabled") Min/Max: 0 / 159999	RW	32-bit Integer
		907 908	Data Out B1 Data Out B2 Data Output B1, B2 Parameter number whose value will be written from a communications device data table.	See [Data Out A1].		
		909 910	Data Out C1 Data Out C2 Data Output C1, C2 Parameter number whose value will be written from a communications device data table.	See [Data Out A1].		
		911 912	Data Out D1 Data Out D2 Data Output D1, D2 Parameter number whose value will be written from a communications device data table.	See [Data Out A1].		

COMMUNICATION

File

Group

No.

Name
Description

Values

Read-Write

Data Type

919

Stop Owner
Stop Owner
Indicates which port is currently issuing a valid stop command.

Options

Reserved

Port 14

Port 13

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Port 6

Port 5

Port 4

Port 3

Port 2

Port 1

Digital In

Default

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

Bit

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

0 = False
1 = True

920

Start Owner
Start Owner
Indicates which port is currently issuing a valid start command.

Options

Reserved

Port 14

Port 13

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Port 6

Port 5

Port 4

Port 3

Port 2

Port 1

Digital In

Default

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

Bit

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

0 = False
1 = True

921

Jog Owner
Jog Owner
Indicates which port is currently issuing a valid jog command.

Options

Reserved

Port 14

Port 13

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Port 6

Port 5

Port 4

Port 3

Port 2

Port 1

Digital In

Default

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

Bit

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

0 = False
1 = True

922

Dir Owner
Direction Owner
Indicates which port is currently has exclusive control of direction changes.

Options

Reserved

Port 14

Port 13

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Port 6

Port 5

Port 4

Port 3

Port 2

Port 1

Digital In

Default

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

Bit

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

0 = False
1 = True

923

Clear Flt Owner
Clear Fault Owner
Indicates which port is currently clearing a fault.

Options

Reserved

Port 14

Port 13

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Reserved

Port 6

Port 5

Port 4

Port 3

Port 2

Port 1

Digital In

Default

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

Bit

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

0 = False
1 = True

Owners

COMMUNICATION

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																	
	Owners	924	Manual Owner Manual Owner Adapter that has requested manual control of all drive logic and/or reference functions. If an adapter is in manual lockout, all other functions (except stop) on all other adapters are locked out and non-functional. Options <table><tr><td>Reserved</td><td>Port 14</td><td>Port 13</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Digital In</td></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table>	Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = False 1 = True		
		Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In																																					
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		925	Ref Select Owner Reference Select Owner Indicates which port is issuing a valid reference select. Options <table><tr><td>Reserved</td><td>Port 14</td><td>Port 13</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Port 6</td><td>Port 5</td><td>Port 4</td><td>Port 3</td><td>Port 2</td><td>Port 1</td><td>Digital In</td></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table>	Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = False 1 = True		
		Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In																																					
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						

Drive Diagnostics File

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																
DIAGNOSTICS	Status	930	Speed Ref Source Speed Reference Source Indicates the currently selected source for value displayed in P593 [Limited Spd Ref]. The Speed Reference Source displays the parameter number that is supplying the speed reference. For example, if Speed Reference Source contains the value 546, then P546 [Spd Ref A Setpt] is the source of the speed reference.	Default: 0 Options: 0 / 159999	RO	32-bit Integer																																																
		931	Last StartSource Last Start Source Displays the source that initiated the most recent start sequence. All bits in this parameter are refreshed each time the drive receives a start command.	Default: 0 = Read Only Options: 0 = "Pwr Removed" 1-6 = "DPI Port 1-6" 7 = "Digital In" 8 = "Sleep" 9 = "Jog" 10 = "Profiling" 11 = "AutoRestart" 12 = "Pwr Up Start" 13 = "Fault" 14 = "Enable" 15 = "Autotune" 16 = "Precharge" 17 = "Safety" 18 = "Fast Stop" 19 = "DPI Port 13" 20 = "DPI Port 14"	RO	32-bit Integer																																																
		932	Last Stop Source Last Stop Source Displays the source that initiated the most recent stop sequence. All bits in this parameter are refreshed each time the drive receives a stop command.	Default: 0 = Read Only Options: 0 = "Pwr Removed" 1-6 = "DPI Port 1-6" 7 = "Digital In" 8 = "Sleep" 9 = "Jog" 10 = "Profiling" 11 = "AutoRestart" 12 = "Pwr Up Start" 13 = "Fault" 14 = "Enable" 15 = "Autotune" 16 = "Precharge" 17 = "Safety" 18 = "Fast Stop" 19 = "DPI Port 13" 20 = "DPI Port 14"	RO	32-bit Integer																																																
		933	Start Inhibits Start Inhibits Indicates which condition is preventing the drive from starting or running. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Profiler</td><td>Sleep</td><td>Safety</td><td>Reserved</td><td>Reserved</td><td>Stop</td><td>Precharge</td><td>Enable</td><td>Alarm</td><td>Faulted</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Profiler	Sleep	Safety	Reserved	Reserved	Stop	Precharge	Enable	Alarm	Faulted	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Profiler	Sleep	Safety	Reserved	Reserved	Stop	Precharge	Enable	Alarm	Faulted																																						
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						

File

Group

No.

Name
Description

Values

Read-Write

Data Type

934

Last StrtInhibit
Last Start Inhibit
Displays the Inhibit which prevented the last Start signal from starting the drive. Bits will be cleared after the next successful start sequence.

Options

Reserved
Reserved
Reserved
Reserved
Reserved
Reserved
Profiler
Sleep
Safety
Startup
Database
Stop
Precharge
Enable
Alarm
Faulted

Default

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

0 = False
1 = True

Bit

15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0

935

Drive Status 1
Drive Status 1
Present operating condition of the drive.

Options

Regen
Motor OL
Enable On
Bus Freq Reg
Cur Limit
At Limit
At Home
AtZero Speed
Torque Mode
Position Mode
Speed Mode
DB Active
DC Braking
Stopping
Jogging
Running
Reserved
SpdRef Bit 4
SpdRef Bit 3
SpdRef Bit 2
SpdRef Bit 1
SpdRef Bit 0
Manual
At Speed
Faulted
Alarm
Decelerating
Accelerating
Actual Dir
Command Dir
Active
Ready

Default

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

0 = Condition False
1 = Condition True

Bit

31
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0

Table 795A: Reference Status

Table 795B: Exceleration Status

Bit

14
13
12
Input Filter Setting
0
0
0
Ref A Auto
0
0
1
Ref B Auto
0
1
0
Preset 2 Auto
0
1
1
Preset 3 Auto
1
0
0
Preset 4 Auto
1
0
1
Preset 5 Auto
1
1
0
Preset 6 Auto
1
1
1
Preset 7 Auto

Bit

11
10
9
Input Filter Setting
0
0
0
Port 0 (TB)
0
0
1
Port 1
0
1
0
Port 2
0
1
1
Port 3
1
0
0
Port 4
1
0
1
Port 5
1
1
0
Port 6
1
1
1
No Local Control

936

Drive Status 2
Drive Status 2
Present operating condition of the drive.

Options

Reserved
Reserved
Reserved
Reserved
Reserved
PID FB Loss
Autotuning
PrchgClosed
Reserved
Reserved
FdbkLoss SwO
Flux Brake
Reserved
HS Fan On
AuRstrCntDwn
AutoRstr Act

Default

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0

0 = Condition False
1 = Condition True

Bit

15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0

937

Condition Sts 1
Condition Status 1
Status of conditions that may or may not result in the drive taking action (faulting), based on configuration of protective functions.

Options

Reserved
GndWarning
ExtPrchgErr
PosFdbkLoss
AuxFdbkLoss
AltFdbkLoss
PriFdbkLoss
Shear Pin 2
Shear Pin 1
Decel Inhib
OutPhaseLoss
InPhaseLoss
Load Loss
Motor OL
UnderVoltage
Power Loss

Default

0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
1

0 = Condition False
1 = Condition True

Bit

15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0

File	Group	No.	Name Description	Values		Read-Write	Data Type
DIAGNOSTICS	Status	940	Drive OL Count Drive Overload Count Indicates power unit overload (IT) in percentage. When the value reaches 100 %, the power unit overload fault occurs.	Units:	%	RW	Real
				Default:	0.00		
				Min/Max:	0.00 / 200.00		
		941	IGBT Temp Pct Insulated-Gate Bipolar Transistor Temperature Percent Indicates IGBT junction temperature in centigrade.	Units:	%	RW	Real
				Default:	0.00		
				Min/Max:	+/+200.00		
		942	IGBT Temp C Insulated-Gate Bipolar Transistor Temperature Celsius Indicates IGBT junction temperature in percentage of the maximum junction temperature.	Units:	DegC	RW	Real
				Default:	0.00		
				Min/Max:	+/+200.00		
		943	Drive Temp Pct Drive Temperature Percent Present operating temperature of the drive power section.	Units:	%	RW	Real
				Default:	0.00		
				Min/Max:	+/+200.00		
		944	Drive Temp C Drive Temperature Celsius Indicates operating temperature of the drive power section (heat-sink) in percentage of the maximum heat-sink temperature.	Units:	DegC	RW	Real
				Default:	0.00		
				Min/Max:	+/+200.00		

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																																																															
DIAGNOSTICS	Status	945	At Limit Status At Limit Status Status of dynamic conditions within the drive that are either active or a limit is being applied. Options <table><tr><td>Cur Rate Lmt</td><td>TrqPrvNegLmt</td><td>TrqPrvPosLmt</td><td>Mtr Vltg Lkg</td><td>BusVltgFVLmt</td><td>Therm RegLmt</td><td>Cur Lmt FV</td><td>Regen PwrLmt</td><td>Mtrng PwrLmt</td><td>Trq Neg Lmt</td><td>Trq Pos Lmt</td><td>FlxCurNegLmt</td><td>FlxCurPosLmt</td><td>TrqCurNegLmt</td><td>TrqCurPosLmt</td><td>PsnReg HiSpd</td><td>PsnReg LoSpd</td><td>PsnReg HiLmt</td><td>PsnReg LoLmt</td><td>DB Res Limit</td><td>PWM FreqLmt</td><td>Economize</td><td>Flux Braking</td><td>FreqOSNegLmt</td><td>FreqOSPosLmt</td><td>Freq Lo Lmt</td><td>Freq Hi Lmt</td><td>Spd Reg Lmt</td><td>OverSpd Lmt</td><td>MaxSpeed Lmt</td><td>Bus Vltg Lmt</td><td>Current Lmt</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True Bit 0 “Current Lmt” – Scalar current limit is adjusting the output frequency Bit 1 “Bus Vltg Lmt” – Scalar bus voltage limit is adjusting the output frequency Bit 2 “MaxSpeed Lmt” – Motor speed reference is limited to maximum forward speed or maximum reverse speed Bit 3 “OverSpd Lmt” – Motor speed reference positive (+) trim is at maximum speed limit plus or minus (+/-) the overspeed limit Bit 4 “Spd Reg Lmt” – The output of the drive’s speed regulator has reached limit Bit 5 “Freq Hi Lmt” – Scalar control inner ramp high limit is active Bit 6 “Freq Lo Lmt” – Scalar control inner ramp low limit is active Bit 7 “FreqOSPosLmt” – Scalar control inner ramp positive (+) overspeed limit is active Bit 8 “FreqOSNegLmt” – Scalar control inner ramp negative (-) overspeed limit is active Bit 9 “Flux Braking” – Flux braking is active Bit 10 “Economize” – Economize is active Bit 11 “PWM FreqLmt” – PWM frequency is reduced by the thermal regulator Bit 12 “DB Res Limit” – Dynamic brake thermal protection is active Bit 13 “PsnReg LoLmt” – The position integrator low limit is active Bit 14 “PsnReg HiLmt” – The position integrator high limit is active Bit 15 “PsnReg LoSpd” – The position regulator output (speed) is at low limit Bit 16 “PsnReg HiSpd” – The position regulator output (speed) is at high limit Bit 17 “TrqCurPosLmt” – The torque current positive limit is active Bit 18 “TrqCurNegLmt” – The torque current negative limit is active Bit 19 “FlxCurPosLmt” – The flux current positive limit is active Bit 20 “FlxCurNegLmt” – The flux current negative limit is active Bit 21 “Trq Pos Lmt” – The positive torque limit is active Bit 22 “Trq Neg Lmt” – The negative torque limit is active Bit 23 “Mtrng PwrLmt” – The motoring power limit is active Bit 24 “Regen PwrLmt” – The regeneration power limit is active Bit 25 “Cur Lmt FV” – The current limit parameter or analog Input current limit is active Bit 26 “Therm RegLmt” – The thermal regulator torque limit is active Bit 27 “BusVltgFVLmt” – The bus voltage regulator torque limit is active Bit 28 “Mtr Vltg Lkg” – The Vds motor voltage limit is active Bit 29 “TrqPrvPosLmt” – The torque proving positive torque limit is active Bit 30 “TrqPrvNegLmt” – The torque proving negative torque limit is active Bit 31 “Cur Rate Lmt” – The lqs rate limit is active	Cur Rate Lmt	TrqPrvNegLmt	TrqPrvPosLmt	Mtr Vltg Lkg	BusVltgFVLmt	Therm RegLmt	Cur Lmt FV	Regen PwrLmt	Mtrng PwrLmt	Trq Neg Lmt	Trq Pos Lmt	FlxCurNegLmt	FlxCurPosLmt	TrqCurNegLmt	TrqCurPosLmt	PsnReg HiSpd	PsnReg LoSpd	PsnReg HiLmt	PsnReg LoLmt	DB Res Limit	PWM FreqLmt	Economize	Flux Braking	FreqOSNegLmt	FreqOSPosLmt	Freq Lo Lmt	Freq Hi Lmt	Spd Reg Lmt	OverSpd Lmt	MaxSpeed Lmt	Bus Vltg Lmt	Current Lmt	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		Cur Rate Lmt	TrqPrvNegLmt	TrqPrvPosLmt	Mtr Vltg Lkg	BusVltgFVLmt	Therm RegLmt	Cur Lmt FV	Regen PwrLmt	Mtrng PwrLmt	Trq Neg Lmt	Trq Pos Lmt	FlxCurNegLmt	FlxCurPosLmt	TrqCurNegLmt	TrqCurPosLmt	PsnReg HiSpd	PsnReg LoSpd	PsnReg HiLmt	PsnReg LoLmt	DB Res Limit	PWM FreqLmt	Economize	Flux Braking	FreqOSNegLmt	FreqOSPosLmt	Freq Lo Lmt	Freq Hi Lmt	Spd Reg Lmt	OverSpd Lmt	MaxSpeed Lmt	Bus Vltg Lmt	Current Lmt																																																																				
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																					
		Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																			
		946	Safety Port STS Safety Port Status Indicates the port location of a valid feedback option for use with the Safe Speed Monitoring Option. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Slot 8</td><td>Slot 7</td><td>Slot 6</td><td>Slot 5</td><td>Slot 4</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Slot 8	Slot 7	Slot 6	Slot 5	Slot 4	Reserved	Reserved	Reserved	Reserved	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																															
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Slot 8	Slot 7	Slot 6	Slot 5	Slot 4	Reserved	Reserved	Reserved	Reserved																																																																																			
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																			
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																																			

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																																																																
DIAGNOSTICS	Fault/Alarm Info	950	Minor Flt Cfg Minor Fault Configuration Enables / Disables operation of the “Minor Fault” function, which allows the drive to continue running while some types of faults are present. In addition to setting this parameter, the “Flt Minor” action must be selected for the condition that is desired to result in a minor fault (see P410 for an example). Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Enable</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Enable	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																															
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Enable																																																																																			
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1																																																																																				
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																																				
951	Last Fault Code Last Fault Code The fault code of the most recent fault. This parameter is for convenience. A comprehensive history of fault information is available through the fault que (via HIM screens and / or software tools such as Drive Explorer). Default: 0 Min/Max: 0 / 424648720	RO	32-bit Integer																																																																																																			
952	Fault Status A Fault Status A Indicates the occurrence of exception events that have been configured as fault conditions. These events are from [Exception Event1]. Options <table><tr><td>Reserved</td><td>Reserved</td><td>ExtPrchrgErr</td><td>PosFdbkLoss</td><td>AuxFdbkLoss</td><td>AltFdbkLoss</td><td>PriFdbkLoss</td><td>Shear Pin 2</td><td>Shear Pin 1</td><td>Decel Inhib</td><td>OutPhaseLoss</td><td>InPhaseLoss</td><td>Load Loss</td><td>Motor OL</td><td>UnderVoltage</td><td>Power Loss</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Reserved	Reserved	ExtPrchrgErr	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PriFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																				
Reserved	Reserved	ExtPrchrgErr	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PriFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss																																																																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																																							
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																																						
953	Fault Status B Fault Status B Indicates the occurrence of exception events that have been configured as fault conditions. These events are from [Exception Event2]. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Ground Fault</td><td>TPEncsCnfg</td><td>TrqPvnSpdBnd</td><td>HW OverCur</td><td>SW OverCur</td><td>AuRstExhaust</td><td>IXOVoltRange</td><td>FluxAmpsRange</td><td>IRVoltsRange</td><td>SafetyBrdFit</td><td>Prchrg Open</td><td>Overspd Lmt</td><td>Excess Load</td><td>SinkUnderTmp</td><td>TransistorOT</td><td>Heatsink OT</td><td>Drive OL</td><td>OverVoltage</td><td>Aux InputFit</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Ground Fault	TPEncsCnfg	TrqPvnSpdBnd	HW OverCur	SW OverCur	AuRstExhaust	IXOVoltRange	FluxAmpsRange	IRVoltsRange	SafetyBrdFit	Prchrg Open	Overspd Lmt	Excess Load	SinkUnderTmp	TransistorOT	Heatsink OT	Drive OL	OverVoltage	Aux InputFit	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Ground Fault	TPEncsCnfg	TrqPvnSpdBnd	HW OverCur	SW OverCur	AuRstExhaust	IXOVoltRange	FluxAmpsRange	IRVoltsRange	SafetyBrdFit	Prchrg Open	Overspd Lmt	Excess Load	SinkUnderTmp	TransistorOT	Heatsink OT	Drive OL	OverVoltage	Aux InputFit																																																																						
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																						
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																						
954	Status1 at Fault Status 1 at Fault Captures and displays P935 [Drive Status 1] bit pattern at the time of the last fault. Options <table><tr><td>Regen</td><td>Motor OL</td><td>Enable On</td><td>Bus Frq Reg</td><td>Cur Limit</td><td>At Limit</td><td>At Home</td><td>AtZero Speed</td><td>Torque Mode</td><td>PositionMode</td><td>Speed Mode</td><td>DB Active</td><td>DC Braking</td><td>Stopping</td><td>Jogging</td><td>Running</td><td>Reserved</td><td>SpdRef Bit 4</td><td>SpdRef Bit 3</td><td>SpdRef Bit 2</td><td>SpdRef Bit 1</td><td>SpdRef Bit 0</td><td>Manual</td><td>At Speed</td><td>Faulted</td><td>Alarm</td><td>Decelerating</td><td>Accelerating</td><td>Actual Dir</td><td>Command Dir</td><td>Active</td><td>Ready</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Regen	Motor OL	Enable On	Bus Frq Reg	Cur Limit	At Limit	At Home	AtZero Speed	Torque Mode	PositionMode	Speed Mode	DB Active	DC Braking	Stopping	Jogging	Running	Reserved	SpdRef Bit 4	SpdRef Bit 3	SpdRef Bit 2	SpdRef Bit 1	SpdRef Bit 0	Manual	At Speed	Faulted	Alarm	Decelerating	Accelerating	Actual Dir	Command Dir	Active	Ready	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
Regen	Motor OL	Enable On	Bus Frq Reg	Cur Limit	At Limit	At Home	AtZero Speed	Torque Mode	PositionMode	Speed Mode	DB Active	DC Braking	Stopping	Jogging	Running	Reserved	SpdRef Bit 4	SpdRef Bit 3	SpdRef Bit 2	SpdRef Bit 1	SpdRef Bit 0	Manual	At Speed	Faulted	Alarm	Decelerating	Accelerating	Actual Dir	Command Dir	Active	Ready																																																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																							
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																						

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																
DIAGNOSTICS	Fault/Alarm Info	955	Status2 at Fault Status 2 at Fault Captures and displays P936 [Drive Status 2] bit pattern at the time of the last fault. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Decel Rate</td><td>Accel Rate</td><td>PID FB Loss</td><td>Autotuning</td><td>PchrgClosed</td><td>Reserved</td><td>Reserved</td><td>FdbkLoss SwO</td><td>Flux Brake</td><td>Reserved</td><td>HS Fan On</td><td>AuRstrCntDwn</td><td>AutoRstr Act</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True	Reserved	Reserved	Reserved	Decel Rate	Accel Rate	PID FB Loss	Autotuning	PchrgClosed	Reserved	Reserved	FdbkLoss SwO	Flux Brake	Reserved	HS Fan On	AuRstrCntDwn	AutoRstr Act	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		Reserved	Reserved	Reserved	Decel Rate	Accel Rate	PID FB Loss	Autotuning	PchrgClosed	Reserved	Reserved	FdbkLoss SwO	Flux Brake	Reserved	HS Fan On	AuRstrCntDwn	AutoRstr Act																																					
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																					
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																				
		956	Fault Frequency Fault Frequency Captures and displays the output speed of the drive at the time of the last fault.	Default: 0.00 Min/Max: -650.00 / 650.00	RW	Real																																																
957	Fault Amps Fault Amps Captures and displays motor amps at the time of the last fault.	Default: 0.00 Min/Max: 0.00 / P21 [Rated Amps] x 2	RW	Real																																																		
958	Fault Bus Volts Fault Bus Volts Captures and displays the DC bus voltage of the drive at the time of the last fault.	Default: 0.00 Min/Max: 0.00 / P20 [Rated Volts] x 2	RW	Real																																																		
		959	Alarm Status A Alarm Status A Indicates the occurrence of exception events that have been configured as alarm conditions. These events are from [Exception Event1]. Options <table><tr><td>Reserved</td><td>Gnd Warning</td><td>Reserved</td><td>PosFdbkLoss</td><td>AuxFdbkLoss</td><td>AltFdbkLoss</td><td>PriFdbkLoss</td><td>Shear Pin 2</td><td>Shear Pin 1</td><td>Decel Inhib</td><td>OutPhaseLoss</td><td>InPhaseLoss</td><td>Load Loss</td><td>Motor OL</td><td>UnderVoltage</td><td>Power Loss</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Reserved	Gnd Warning	Reserved	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PriFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
Reserved	Gnd Warning	Reserved	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PriFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		960	Alarm Status B Alarm Status B Indicates the occurrence of exception events that have been configured as alarm conditions. These events are from [Exception Event2] Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Gnd Warning</td><td>Not Home Set</td><td>Homing Actv</td><td>Profile Actv</td><td>PWMFrg Reduc</td><td>Curlmt Reduc</td><td>Drive OL</td><td>StartOnPwrUp</td><td>Waking</td><td>Heatsink OT</td><td>IGBT OT</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Reserved	Reserved	Reserved	Reserved	Reserved	Gnd Warning	Not Home Set	Homing Actv	Profile Actv	PWMFrg Reduc	Curlmt Reduc	Drive OL	StartOnPwrUp	Waking	Heatsink OT	IGBT OT	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
Reserved	Reserved	Reserved	Reserved	Reserved	Gnd Warning	Not Home Set	Homing Actv	Profile Actv	PWMFrg Reduc	Curlmt Reduc	Drive OL	StartOnPwrUp	Waking	Heatsink OT	IGBT OT																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
DIAGNOSTICS	Fault/Alarm Info	961	Type 2 Alarms Type 2 Alarms Indicates the occurrence of exception events that have been configured as alarm conditions. These events are from [Exception Event3]. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>BipolarClct</td><td>IXOVoltRange</td><td>FluxAmpsRang</td><td>IRVltg Range</td><td>Digin Cnfg C</td><td>Digin Cnfg B</td><td>FdbkSelErr</td><td>VHz Incmplb</td><td>VHzBossLmt</td><td>VHzNegSlope</td><td>Frg Clct</td><td>TqProvClct</td><td>BrakeSlipped</td><td>Sleep Cfg</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True Bit 11 “HH HW Ver” – Indicates a non-configurable High Horsepower hardware version fault. Bit 12 “HH CurUnblnc” – Indicates a non-configurable High Horsepower output current unbalanced fault. Bit 13 “HH VltUnblnc” – Indicates a non-configurable High Horsepower Bus voltage unbalanced fault. Bit 14 “HH Bus Data” – Indicates when Communication Bus data are mismatched between left side unit and right side unit. Bit 21 “Drive Homing” – When the drive is in “Drive Homing” mode (parameter P721 [Position Control] bit 24 “Find Home” or bit 27 “Return Home” is set to “1”) this alarm is triggered and the drive moves to a home position automatically. Bit 28 “+/- 12v Pwr” – Identifies when the 12V dc control voltage is outside the tolerance range. The positive voltage power exceeds +15.50 V dc and the negative voltage power exceeds -15.50V dc. Bit 29 “Anlgn1 Loss” – Indicates a non-configurable Analog Input 1 loss fault. Bit 30 “Anlgn2 Loss” – Indicates a non-configurable Analog Input 2 loss fault. Bit 31 “Anlgn3 Loss” – Indicates a non-configurable Analog Input 3 loss fault.		Reserved	Reserved	BipolarClct	IXOVoltRange	FluxAmpsRang	IRVltg Range	Digin Cnfg C	Digin Cnfg B	FdbkSelErr	VHz Incmplb	VHzBossLmt	VHzNegSlope	Frg Clct	TqProvClct	BrakeSlipped	Sleep Cfg	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
			Reserved	Reserved	BipolarClct	IXOVoltRange	FluxAmpsRang	IRVltg Range	Digin Cnfg C	Digin Cnfg B	FdbkSelErr	VHz Incmplb	VHzBossLmt	VHzNegSlope	Frg Clct	TqProvClct	BrakeSlipped	Sleep Cfg																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		962	AlarmA at Fault Alarm A at Fault Captures and displays P959 [Alarm Status A] at the time of the last fault. Options <table><tr><td></td><td>Reserved</td><td>Ground Warn</td><td>Load Loss</td><td>PosFdbkLoss</td><td>AuxFdbkLoss</td><td>AltFdbkLoss</td><td>PrfFdbkLoss</td><td>Shear Pin 2</td><td>Shear Pin 1</td><td>Decel Inhib</td><td>OutPhaseLoss</td><td>InPhaseLoss</td><td>Load Loss</td><td>Motor OL</td><td>UnderVoltage</td><td>Power Loss</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True		Reserved	Ground Warn	Load Loss	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PrfFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Ground Warn	Load Loss	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PrfFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		963	AlarmB at Fault Alarm B at Fault Captures and displays P960 [Alarm Status B] at the time of the last fault. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Gnd Warning</td><td>Not Home Set</td><td>Homing Actv</td><td>Profile Actv</td><td>PWMFrg Reduc</td><td>CurLmt Reduc</td><td>Drive OL</td><td>StartOnPwrUp</td><td>Waking</td><td>Heatsink OT</td><td>IGBT OT</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True		Reserved	Reserved	Reserved	Reserved	Reserved	Gnd Warning	Not Home Set	Homing Actv	Profile Actv	PWMFrg Reduc	CurLmt Reduc	Drive OL	StartOnPwrUp	Waking	Heatsink OT	IGBT OT	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Gnd Warning	Not Home Set	Homing Actv	Profile Actv	PWMFrg Reduc	CurLmt Reduc	Drive OL	StartOnPwrUp	Waking	Heatsink OT	IGBT OT																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									

File	Group	No.	Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Testpoints	970 974 978 982	Testpoint Sel 1 Testpoint Sel 2 Testpoint Sel 3 Testpoint Sel 4 Testpoint Select 1, 2, 3, 4 Selects a source for the testpoint values ("Fval" and "Lval"). Used by the factory, typically for diagnostic purposes.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		971 975 979 983	Testpoint Fval 1 Testpoint Fval 2 Testpoint Fval 3 Testpoint Fval 4 Testpoint Float Value 1, 2, 3, 4 Displays data selected by Testpoint Sel X, if the data type is floating point.	Default: 0.000000 Min/Max: -/+ 2200000000.000000	RW	Real
		972 976 980 984	Testpoint Lval 1 Testpoint Lval 2 Testpoint Lval 3 Testpoint Lval 4 Testpoint Long Value 1, 2, 3, 4 Displays data selected by Testpoint Sel X, if the data type is long integer.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Peak Direction	1035	PkDtct Stpt Real Peak Detection Setpoint Real A setpoint value, in the form of a real number. Intended to be used as a potential data source for P1038 [PkDtct1PresetSel] and P1043 [PkDtct2PresetSel].	Default: 0.000000 Min/Max: -/+ 2200000000.000000	RW	Real
		1036	PkDtct Stpt Dint Peak Detection Setpoint D Integer A setpoint value, in the form of an integer number. Intended to be used as a potential data source for P1038 [PkDtct1PresetSel] and P1043 [PkDtct2PresetSel].	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		1037	PkDtct1 In Sel Peak Detection 1 Input Select Selects the input data source for the peak detect functions. The functions can be configured to sample and hold either the largest (maximum) or smallest (minimum) value of the input signal selected by this parameter. Important: Either real or integer data sources can be selected, but integer sources will be internally converted to real and displayed in the peak detect output as real numbers.	Default: 1035 Min/Max: 0 / 159999	RW	32-bit Integer
		1038	PkDtct1PresetSel Peak Detection 1 Preset Select Selects the preset data source for the peak detect functions. The output of the each peak detect function can be forced to equal the value of the input signal selected by this parameter by using the 'Peak1 Set' bit in P1039 [Peak1 Cfg]. The same integer to real number conversion applies to both the input and the preset signal.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																				
DIAGNOSTICS	Peak Direction	1039	Peak1 Cfg Peak 1 Configure Configures operation of each peak detector. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Peak1 Set</td><td>Peak1 Hold</td><td>Peak1 Peak</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> Bit 0 “Peak1 Peak” – 0 = Capture minimum value of the input signal. 1 = Capture maximum value of the input signal. Bit 1 “Peak1 Hold” – 0 = Monitor input. 1 = Ignore input and hold output at present value. This bit is overridden by Bit 2. Bit 2 “Peak1 Set” – 0 = Resume normal capture of the input signal value (assuming Bit 1 is also = 0). The preset signal will be used as a starting value to compare against further changes in the input signal level. 1 = Force output of the peak detect function to equal the signal selected by [PkDtctXPresetSel].	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak1 Set	Peak1 Hold	Peak1 Peak	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak1 Set	Peak1 Hold	Peak1 Peak																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
		1040	Peak 1 Change Peak 1 Change Status of the peak detectors. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Peak1 Change</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Output value is held or set. 1 = Output value has changed.	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak1 Change	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak1 Change																																										
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																										
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																										
1041	PeakDetect1 Out Peak Detection 1 Output Displays the output of the peak detector, according to the operation selected by the configuration bits, and is always displayed as a real number, regardless of the selected signal type.	Default: 0.000000 Min/Max: -/+21478000.000000	RO	Real																																																						
1042	PkDtct2 In Sel Peak Detection 2 Input Select Selects the input data source for the peak detect functions. The functions can be configured to sample and hold either the largest (maximum) or smallest (minimum) value of the input signal selected by this parameter. Important: Either real or integer data sources can be selected, but integer sources will be internally converted to real and displayed in the peak detect output as real numbers.	Default: 1035 Min/Max: 0 / 159999	RW	32-bit Integer																																																						
		1043	PkDtct2PresetSel Peak Detection 2 Preset Select Selects the preset data source for the peak detect functions. The output of the each peak detect function can be forced to equal the value of the input signal selected by this parameter by using the 'Peak1 Set' bit in P1039 [Peak1 Cfg]. The same integer to real number conversion applies to both the input and the preset signal.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer																																																				

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																				
DIAGNOSTICS	Peak Direction	1044	Peak2 Cfg Peak 2 Configure Configures operation of each peak detector. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Peak1 Set</td><td>Peak1 Hold</td><td>Peak1 Peak</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> Bit 0 "Peak1 Peak" – 0 = Capture minimum value of the input signal. 1 = Capture maximum value of the input signal. Bit 1 "Peak1 Hold" – 0 = Monitor input. 1 = Ignore input and hold output at present value. This bit is overridden by Bit 2. Bit 2 "Peak1 Set" – 0 = Resume normal capture of the input signal value (assuming Bit 1 is also = 0). The preset signal will be used as a starting value to compare against further changes in the input signal level. 1 = Force output of the peak detect function to equal the signal selected by [PkDcttXPresetSel].		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak1 Set	Peak1 Hold	Peak1 Peak	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = False 1 = True		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak1 Set	Peak1 Hold	Peak1 Peak																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																										
1045	Peak 2 Change Peak 2 Change Status of the peak detectors. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Peak1 Change</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Output value is held or set. 1 = Output value has changed.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak1 Change	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0						
	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak1 Change																																										
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																										
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																										
1046	PeakDetect2 Out Peak Detection 2 Output Displays the output of the peak detector, according to the operation selected by the configuration bits, and is always displayed as a real number, regardless of the selected signal type.	Default: 0.000000 Min/Max: -/+21478000.000000	RO	Real																																																						

Drive Applications File

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
APPLICATIONS	Process PID	1065	PID Cfg PID Configuration Main configuration of the Process PID controller. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Percent Ref</td><td>Anti Windup</td><td>Stop Mode</td><td>Fdbk Sqrt</td><td>Zero Clamp</td><td>Ramp Ref</td><td>Preload Int</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Percent Ref	Anti Windup	Stop Mode	Fdbk Sqrt	Zero Clamp	Ramp Ref	Preload Int	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Percent Ref	Anti Windup	Stop Mode	Fdbk Sqrt	Zero Clamp	Ramp Ref	Preload Int																																						
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		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		1066	PID Control PID Control Used for dynamically controlling the Process PID controller. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>PID InvError</td><td>PID Reset</td><td>PID Hold</td><td>PID Enable</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	PID InvError	PID Reset	PID Hold	PID Enable	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	PID InvError	PID Reset	PID Hold	PID Enable																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		1067	PID Ref Sel PID Reference Select Selects the source for the PID Reference. A zero sets the Reference to a fixed value.	Default: 1070 Min/Max: 0 / 159999	RW	32-bit Integer																																																		
		1068	PID Ref AnlGHi PID Reference Analog High When an analog input is selected for PID Ref this sets high value of scaling.	Units: % Default: 100.00 Min/Max: -/+100.00	RW	Real																																																		
1069	PID Ref AnlGLo PID Reference Analog Low When an analog input is selected for PID Ref this sets low value of scaling.	Units: % Default: 100.00 Min/Max: -/+100.00	RW	Real																																																				
1070	PID Setpoint PID Setpoint Provides an internal fixed value for PID Ref when P1067 [PID Ref Sel] is set to this parameter.	Units: % Default: 0.00 Min/Max: -/+100.00	RW	Real																																																				
1071	PID Ref Mult PID Reference Multiplier Sets the multiplying factor which is applied to the Reference source before the Reference is used.	Units: % Default: 100.00 Min/Max: -/+100.00	RW	Real																																																				
1072	PID Fdbk Sel PID Feedback Select Selects the source for the PID Feedback. A zero sets the Feedback to a fixed value.	Default: 1077 Min/Max: 1 / 159999	RW	32-bit Integer																																																				
1073	PID Fdbk AnlGHi PID Feedback Analog High When an analog input is selected for PID Feedback this sets high value of scaling.	Units: % Default: 100.00 Min/Max: -/+100.00	RW	Real																																																				
1074	PID Fdbk AnlGLo PID Feedback Analog Low When an analog input is selected for PID Feedback this sets low value of scaling.	Units: % Default: 0.00 Min/Max: -/+100.00	RW	Real																																																				
1075	PID FBLoss SpSel PID Feedback Loss Speed Select When an analog input is selected for PID Feedback, P1079 [PID Output Sel] is set to Speed Excl/Speed Trim, and an analog signal loss is detected, sets speed to this source.	Default: 546 Min/Max: 0 / 159999	RW	32-bit Integer																																																				

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APPLICATIONS	Process PID	1076	PID FB Loss TqSel PID Feedback Loss Torque Select When an analog input is selected for PID Feedback, P1079 [PID Output Sel] is set to Speed Excl/Speed Trim, and an analog signal loss is detected, sets torque to this source.	Default: 676 Min/Max: 0 / 159999	RW	32-bit Integer
		1077	PID Fdbk PID Feedback Provides an internal fixed value for PID Feedback when [PID Fdbk Sel] is set to this parameter.	Units: % Default: 0.00 Min/Max: -/+100.00	RW	Real
		1078	PID Fdbk Mult PID Feedback Multiplier Sets the multiplying factor which is applied to the Feedback source before the Feedback is used.	Units: % Default: 100.00 Min/Max: -/+100.00	RW	Real
		1079	PID Output Sel PID Output Select Selects the target for the PID Output.	Default: 2 = "Speed Trim" Options: 0 = "Not Used" 1 = "Speed Excl" 2 = "Speed Trim" 3 = "Torque Excl" 4 = "Torque Trim" 5 = "Volt Excl" 6 = "Volt Trim"		
		1080	PID Output Mult PID Output Multiplier Sets the multiplying factor which is applied to the PID Output before the PID Output is used.	Units: % Default: 100.00000 Min/Max: -/+100.00000	RW	Real
		1081	PID Upper Limit PID Upper Limit Sets the upper limit for the P1093 [PID Output Meter].	Units: % Default: 100.00 Min/Max: -/+800.00	RW	Real
		1082	PID Lower Limit PID Lower Limit Sets the lower limit for the P1093 [PID Output Meter].	Units: % Default: -100.00 Min/Max: -/+800.00	RW	Real
		1083	PID Deadband PID Deadband Determines the error (+/-) which will be ignored. Any error which falls within this band will not change the PID output.	Units: % Default: 0.00 Min/Max: 0.00 / 100.00	RW	Real
		1084	PID LP Filter BW PID Low Pass Filter Bandwidth Sets the level of filtering applied to the error signal. Zero will disable this filter.	Units: R/S Default: 0.00 Min/Max: 0.00 / 100.00	RW	Real
		1085	PID Preload PID Preload Sets the value used to preload PID Integrator when PID is enabled if configured to use this feature.	Units: % Default: 0.00 Min/Max: -/+100.00	RW	Real
		1086	PID Prop Gain PID Proportional Gain Sets the value for the PI proportional component. PI Error x PI Prop Gain = PI Output	Default: 1.00 Min/Max: 0.00 / 100.00	RW	Real
		1087	PID Int Time PID Integral Time Time required for the integral component to reach 100% of [PI Error Meter]. Not functional when the PI Hold bit of [PI Control] = "1" (enabled).	Units: Secs Default: 1.00 Min/Max: 0.00 / 100.00	RW	Real
		1088	PID Deriv Time PID Derivative Time Refer to formula below: $PI_{Out} = KD (Sec) \times \frac{dPI_{Error} (\%) }{dt (Sec)}$	Units: Secs Default: 0.00 Min/Max: 0.00 / 100.00	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																	
APPLICATIONS	Process PID	1089	PID Status PID Status Status of the Process PI regulator. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>PID In Limit</td><td>PID Reset</td><td>PID Hold</td><td>PID Enabled</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	PID In Limit	PID Reset	PID Hold	PID Enabled	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	PID In Limit	PID Reset	PID Hold	PID Enabled																																					
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																					
		1090	PID Ref Meter PID Reference Meter Present value of the PI reference signal.	Units: % Default: 0.00 Min/Max: -/+100.00	RW	Real																																																	
		1091	PID Fdbk Meter PID Feedback Meter Present value of the PI feedback signal.	Units: % Default: 0.00 Min/Max: -/+100.00	RW	Real																																																	
		1092	PID Error Meter PID Error Meter Present value of the PI error.	Units: % Default: 0.00 Min/Max: -/+200.00	RW	Real																																																	
		1093	PID Output Meter PID Output Meter Present value of the PI output.	Units: % Default: 0.00 Min/Max: -/+800.00	RW	Real																																																	

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
APPLICATIONS	Torque Prove	1100	Trq Prove Cfg Torque Prove Configure Enables/disables torque/brake proving feature. When “Enabled,” [Digital Out1 Sel] becomes the brake control. Note: this value is not changed when parameters are reset to factory defaults (page 3-31). Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>BrkSlipStart</td><td>BrkSlipEnds</td><td>FW LoadLimit</td><td>Preload</td><td>Micro Psn</td><td>Encoderless</td><td>TP Enable</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Disabled 1 = Enabled Bit 0 “ConfigMicro” – Enables TorqProve features. Bit 1 “Preload” – Enables encoderless operation – bit 0 must also be enabled. Bit 2 “Cnfg Enable” – A “1” allows the Micro Position digital input to change the speed command while the drive is running. Bit 3 “TP Endcless” – “0” uses the last torque for preload. “1” uses “TorqRef A” if commanded direction is forward and “TorqRef B” for reverse. Bit 4 “TP Load Lim” – Enables drive to perform load calculation at base speed. Drive will then limit operation above base speed depending on load. Bit 5 “TP EnclsSlip” – A “1” Disables the partial Brake Slip routine from the drive when encoderless is selected. Bit 6 “BrkSlipStart” – Starts drive if Brake slippage is detected.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	BrkSlipStart	BrkSlipEnds	FW LoadLimit	Preload	Micro Psn	Encoderless	TP Enable	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	BrkSlipStart	BrkSlipEnds	FW LoadLimit	Preload	Micro Psn	Encoderless	TP Enable																																						
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		1101	Trq Prove Setup Torque Prove Setup Allows control of specific torque proving functions through a communication device. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>End Stop Rev</td><td>Decel Rev</td><td>End Stop Fwd</td><td>Decel Fwd</td><td>Float Micro</td><td>Fast Stop</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Disabled 1 = Enabled		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	End Stop Rev	Decel Rev	End Stop Fwd	Decel Fwd	Float Micro	Fast Stop	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	End Stop Rev	Decel Rev	End Stop Fwd	Decel Fwd	Float Micro	Fast Stop																																						
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						

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APPLICATIONS	Torque Prove	1102	DI FloatMicroPsn Digital Input Float Micro Position Selects the digital input to be used for the float / micro position functions.	Default:	0.00	RW	32-bit Integer												
		1103	Trq Prove Status Torque Prove Status Displays the status bits for TorqProve. Options																
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Encoderless	RefLoadLmted	LoadTestActv	Brake Set	BrkSlip1 Alm	Micro Psn	DecelLmtActv	EndLimitActv		
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 = Disabled
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1 = Enabled
		1104	Trq Lmt SlewRate Torque Limit Slew Rate Sets the rate to ramp the torque limits to zero during brake proving.	Units:	Secs		RW	Real											
				Default:	10.000														
				Min/Max:	0.500 / 300.000														
1105	Speed Dev Band Speed Deviation Band The amount of allowable deviation between the commanded speed and the actual speed (from a feedback device). When this value is exceeded for the amount of time in P1106, a fault will occur.	Units:	Hz RPM		RW	Real													
		Default:	P27 [Motor NP Hertz] x 0.0334 P28 [Motor NP RPM] x 0.0334																
		Min/Max:	P27 x 0.0016 / P27 x 0.25 P28 x 0.0016 / P28 x 0.25																
1106	SpdBnd Intgrtr Speed Band Integer The amount of time for which the actual speed is allowed to exceed P1105 [Speed Dev Band] before a fault occurs.	Units:	Secs		RW	Real													
		Default:	0.060																
		Min/Max:	0.001 / 0.200																
1107	Brk Release Time Brake Release Time Sets the time between the brake release command and when the drive begins to accelerate. In Encoderless mode, this parameter sets the time to release the brake after drive starts.	Units:	Secs		RW	Real													
		Default:	0.100																
		Min/Max:	0.000 / 10.000																
1108	Brk Set Time Brake Set Time Defines the amount of delay time between commanding the brake to be set and the start of brake proving.	Units:	Secs		RW	Real													
		Default:	0.100																
		Min/Max:	0.000 / 10.000																
1109	Brk Alarm Travel Brake Alarm Travel Sets the number of motor shaft revolutions allowed during the brake slippage test. Drive torque is reduced to check for brake slippage. When slippage occurs, the drive allows this number of motor shaft revolutions before regaining control. Not used in Encoderless TorqProve mode.	Default:	1.00		RW	Real													
		Min/Max:	0.00 / 1000.00																
1110	Brk Slip Count Brake Slip Count Sets the number of encoder counts to define a brake slippage condition.	Default:	250.00		RW	Real													
		Min/Max:	0.00 / 65535.00																

File	Group	No.	Name Description	Values	Read-Write	Data Type
APPLICATIONS	Torque Prove	1111	Float Tolerance Float Tolerance Sets the frequency level where the float timer starts. Also sets the frequency level where the brake will be closed in Encoderless TorqProve mode.	Units: Hz RPM Default: P27 [Motor NP Hertz] x 0.0334 P28 [Motor NP RPM] x 0.0334 Min/Max: P27 x 0.0016 / P27 x 0.25 P28 x 0.0016 / P28 x 0.25	RW	Real
		1112	 MicroPsnScalePct Micro Position Scale Percent Sets the percent of speed reference to be used when micropositioning has been selected in P1100 [Trq Prove Cfg]. Bit 2 of P1100 [Trq Prove Cfg], parameter 600 determines if the motor needs to come to a stop before this setting will take effect.	Units: % Default: 10.000 Min/Max: 0.100 / 100.000	RW	Real
		1113	ZeroSpdFloatTime Zero Speed Float Time Sets the amount of time the drive is below P1111 [Float Tolerance] before the brake is set. Not used in Encoderless TorqProve mode.	Units: Secs Default: 5.000 Min/Max: 0.100 / 500.000	RW	Real

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APPLICATIONS	Profiling	1210	Profile Status Profile Status Indicates status of speed profile/position indexer control logic.																																																																																																		
		<table><tr><td>Options</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Home Not Set</td><td>Vel Override</td><td>Restart Step</td><td>Resume</td><td>Stopped</td><td>Complete</td><td>In Position</td><td>Holding</td><td>Dwell</td><td>PositionMode</td><td>Running</td><td>Enabled</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Step Bit 4</td><td>Step Bit 3</td><td>Step Bit 2</td><td>Step Bit 1</td><td>Step Bit 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True Bit 0 “Step Bit 0” Bit 1 “Step Bit 1” Bit 2 “Step Bit 2” Bit 3 “Step Bit 3” Bit 4 “Step Bit 4” – Bit 0 through Bit 4 indicate executing step number in the move table in binary format. Bit 8 “Enabled” – indicates that the profile control logic is enabled. When the drive is started with the profiler selection (Option 8) in the speed/torque/position mode P313 [Actv SpTqPs Mode], this bit turns on. Bit 9 “Running” – indicates that the profile control logic is in running state. Bit 10 “PositionMode” – indicates that the profile control logic is using position control logic. Bit 11 “Dwell” – indicates that the profile control logic is in dwell state. Bit 12 “Holding” – indicates that the profile control logic is in holding states Bit 13 “In Position” – indicates that the target position has been reached at the completion of a move. The in position bandwidth P721 [Position Control] can be adjusted to affect when this bit is set with respect to the target position. This bit will be cleared when a new move is begun Bit 14 “Complete” – indicates that all steps in the move table have been executed and a step with a End action has been reached. The profile control logic is complete. This bit will be cleared when the profile is first enabled. Bit 15 “Stopped” – indicates that the profile control logic stops the drive following the Complete status [P1170 Bit14] and any additional dwell time specified for the End step. This bit will be cleared when a new profile is begun. Bit 16 “Resume” – indicates that an existing step is to resume execution when the profile is enabled. A previously running step will then be allowed to complete. When the bit is clear, the profile will begin at its Starting Step. Bit 17 “Restart Step” – follows the state of the restart step bit in P1213 [Profile Command] Bit 10 “Restart Step”. Bit 18 “Vel Override” – follows the state of the velocity override bit in P1213 [Profile Command] Bit 9 “Vel Override”. Bit 19 “Home Not Set” – indicates that the home position is not defined and the move table contains a position absolute move type. When this bit is set the profile will not be allowed to execute. This bit will be cleared when either a homing function or position redefine function is completed.	Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Home Not Set	Vel Override	Restart Step	Resume	Stopped	Complete	In Position	Holding	Dwell	PositionMode	Running	Enabled	Reserved	Reserved	Reserved	Step Bit 4	Step Bit 3	Step Bit 2	Step Bit 1	Step Bit 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Home Not Set	Vel Override	Restart Step	Resume	Stopped	Complete	In Position	Holding	Dwell	PositionMode	Running	Enabled	Reserved	Reserved	Reserved	Step Bit 4	Step Bit 3	Step Bit 2	Step Bit 1	Step Bit 0																																																																					
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																						
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																					

File	Group	No.	Name Description	Values		Read-Write	Data Type																																																																			
APPLICATIONS	Profiling	1212	Units Traveled Units Traveled Indicates total number of units traveled. The relationship between the feedback edge counts and the position units is determined by the P1215 [Counts Per Unit]. Actual motor position is converted from the edge counts to this value using the P1215 [Counts Per Unit].	Units: Default: Min/Max:	Cnts Read Only -/+ 2200000000.0	RW	Real																																																																			
		1213	Profile Command Profile Command Sets bits to configure the speed profile/position indexer control logic. <table><tr><td>Options</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Prof Run Alm</td><td>HomNotSetAlm</td><td>Restart Step</td><td>Vel Override</td><td>Hold Step</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>StrStepSel4</td><td>StrStepSel3</td><td>StrStepSel2</td><td>StrStepSel1</td><td>StrStepSel0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Disabled 1 = Enabled Bit 0 "StrStepSel0" Bit 1 "StrStepSel1" Bit 2 "StrStepSel2" Bit 3 "StrStepSel3" Bit 4 "StrStepSel4" – Bit 0 through Bit 4 set initial or starting step in the move table in binary format. A starting step value of zero results in no motion when the drive is enabled. Bit 8 "Hold Step" – When the drive is enabled with this bit is set, the drive starts and runs at zero velocity. The starting step is not executed until the 'Hold Step' bit is removed. For non-blended moves, the drive will hold zero speed and/or current position. This does not stop the drive. For blended moves, the drive will continue to run at the step velocity. If the Hold Step bit is removed, then the conditions required to complete the step can be evaluated. Bit 9 "Vel Override" – can be used to rescale all move velocities by the velocity override [P1176]. When this bit is off, a scale factor of 1 is used. Bit 10 "Restart Step" – can be used to disable a currently executing profile. This bit forces the current step to reset to the starting step value. Bit 11 "NtHomeSetAlm" – sets condition to indicate the "home position not set" alarm. The absolute position type will work without home position if the bit is off. Set on as default. Bit 12 "Prof Run Alm" – sets condition to indicate the profile running alarm during the drive is running. Set on as default.	Options																		Reserved	Reserved	Reserved	Prof Run Alm	HomNotSetAlm	Restart Step	Vel Override	Hold Step	Reserved	Reserved	Reserved	StrStepSel4	StrStepSel3	StrStepSel2	StrStepSel1	StrStepSel0	Default	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
		Options																																																																								
			Reserved	Reserved	Reserved	Prof Run Alm	HomNotSetAlm	Restart Step	Vel Override	Hold Step	Reserved	Reserved	Reserved	StrStepSel4	StrStepSel3	StrStepSel2	StrStepSel1	StrStepSel0																																																								
Default	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0																																																										
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																										
1215	Counts Per Unit Counts Per Unit Sets number of position feedback counts per unit of machine travel (ex, 1024 encoder edge counts per inch). This parameter is used to scale position targets from their entered values of units to internal units of encoder edge counts. This parameter is also used to convert actual motor position from encoder edge counts back into the desired units for display in P1212 [Units Traveled].	Default: Min/Max:	1 1 / 2200000000	RW	32-bit Integer																																																																					
		1216	ProfVel Override Profile Velocity Override Sets multiplier for all move velocities when the velocity override function is selected [P1173 Bit09]. This parameter is typically set to a value less than 1. When the velocity override bit [P1173 Bit09] is off, a scale factor of 1 is used.	Units: Default: Min/Max:	% 100.00 10.00 / 150.00	RW	Real																																																																			

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																																																																	
APPLICATIONS	Profiling	1217	Prof DI Invert Profile Digital Input Invert Sets polarity of the digital inputs. Each bit is assigned to a move table step. Rising edge of the digital input is used when the bit is off, and falling edge of digital input is used when the bit is on. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Step 16</td><td>Step 15</td><td>Step 14</td><td>Step 13</td><td>Step 12</td><td>Step 11</td><td>Step 10</td><td>Step 9</td><td>Step 8</td><td>Step 7</td><td>Step 6</td><td>Step 5</td><td>Step 4</td><td>Step 3</td><td>Step 2</td><td>Step 1</td><td>StrStepSel4</td><td>StrStepSel3</td><td>StrStepSel2</td><td>StrStepSel1</td><td>StrStepSel0</td><td>Vel Override</td><td>AbortProfile</td><td>Abort Step</td><td>Hold Step</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True Bit 0 "Hold Step" – sets polarity of the digital input for the hold step, P1218 [DI Hold Step]. Bit 1 "Abort Step" – sets polarity of the digital input for abort step, P1219 [DI Abort Step]. Bit 2 "AbortProfile" – sets polarity of the digital input for abort profile, P1220 [DI Abort Profile]. Bit 3 "Vel Override" – sets polarity of the digital input for velocity override, P1221 [DI Vel Override]. Bit 4 "StrStepSel0" – sets polarity of the digital input for start step 1, P1222 [DI StrtStep Sel0]. Bit 5 "StrStepSel1" – sets polarity of the digital input for start step 2, P1223 [DI StrtStep Sel1]. Bit 6 "StrStepSel2" – sets polarity of the digital input for start step 3, P1224 [DI StrtStep Sel2]. Bit 7 "StrStepSel3" – sets polarity of the digital input for start step 4, P1225 [DI StrtStep Sel3]. Bit 8 "StrStepSel4" – sets polarity of the digital input for start step 5, P1226 [DI StrtStep Sel4]. Bit 9 "Step 1" – sets polarity of the digital input for move step 1, P1230 [Step 1 Type]. Bit 10 "Step 2" – sets polarity of the digital input for move step 2, P1240 [Step 2 Type]. Bit 11 "Step 3" – sets polarity of the digital input for move step 3, P1250 [Step 3 Type]. Bit 12 "Step 4" – sets polarity of the digital input for move step 4, P1260 [Step 4 Type]. Bit 13 "Step 5" – sets polarity of the digital input for move step 5, P1270 [Step 5 Type]. Bit 14 "Step 6" – sets polarity of the digital input for move step 6, P1280 [Step 6 Type]. Bit 15 "Step 7" – sets polarity of the digital input for move step 7, P1290 [Step 7 Type]. Bit 16 "Step 8" – sets polarity of the digital input for move step 8, P1300 [Step 8 Type]. Bit 17 "Step 9" – sets polarity of the digital input for move step 9, P1310 [Step 9 Type]. Bit 18 "Step 10" – sets polarity of the digital input for move step 10, P1320 [Step 10 Type]. Bit 19 "Step 11" – sets polarity of the digital input for move step 11, P1330 [Step 11 Type]. Bit 20 "Step 12" – sets polarity of the digital input for move step 12, P1340 [Step 12 Type]. Bit 21 "Step 13" – sets polarity of the digital input for move step 13, P1350 [Step 13 Type]. Bit 22 "Step 14" – sets polarity of the digital input for move step 14, P1360 [Step 14 Type]. Bit 23 "Step 15" – sets polarity of the digital input for move step 15, P1370 [Step 15 Type]. Bit 24 "Step 16" – sets polarity of the digital input for move step 16, P1380 [Step 16 Type].	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Step 16	Step 15	Step 14	Step 13	Step 12	Step 11	Step 10	Step 9	Step 8	Step 7	Step 6	Step 5	Step 4	Step 3	Step 2	Step 1	StrStepSel4	StrStepSel3	StrStepSel2	StrStepSel1	StrStepSel0	Vel Override	AbortProfile	Abort Step	Hold Step	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Step 16	Step 15	Step 14	Step 13	Step 12	Step 11	Step 10	Step 9	Step 8	Step 7	Step 6	Step 5	Step 4	Step 3	Step 2	Step 1	StrStepSel4	StrStepSel3	StrStepSel2	StrStepSel1	StrStepSel0	Vel Override	AbortProfile	Abort Step	Hold Step																																																																					
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																							
		Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																					
		1218	DI Hold Step Digital Input Hold Step Sets a digital input port for the hold step in profile/indexer control logic. The digital input assigned by this parameter is equivalent to the hold step bit [P1173 Bit08]. Polarity of active state is defined by the hold step invert bit [P1177 Bit00].	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer																																																																																																	
		1219	DI Abort Step Digital Input Abort Step Sets a digital input port for the abort step in profile/indexer control logic. Polarity of active state is defined by the abort step invert bit [P1177 Bit01].	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer																																																																																																	
		1220	DI Abort Profile Digital Input Abort Profile Sets a digital input port for the abort profile in profile/indexer control logic. Polarity of active state is defined by the abort profile invert bit [P1177 Bit02].	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer																																																																																																	
		1221	DI Vel Override Digital Input Velocity Profile Sets a digital input port for the velocity override in profile/indexer control logic. The digital input assigned by this parameter is equivalent to the velocity override bit [P1173 Bit09]. Polarity of active state is defined by the velocity override invert bit [P1177 Bit03].	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer																																																																																																	

File	Group	No.	Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	1222	DI StrtStep Sel0	Default:	0.00	RW	32-bit Integer
		1223	DI StrtStep Sel1	Min/Max:	0.00 / 159999.15		
		1224	DI StrtStep Sel2				
		1225	DI StrtStep Sel3				
		1226	DI StrtStep Sel4				
				Digital Input Start Step Select 0, 1, 2, 3, 4			
				Set digital input ports for the start step in profile/indexer control logic. The digital inputs assigned by these parameters are equivalent to the start step bits [P1173 Bit00 to Bit04]. Polarities of active state are defined by the start step invert bits [P1177 Bit04 to Bit08].			
		1230	Step 1 Type	Default:	0 = "Speed"	RW	32-bit Integer
		1240	Step 2 Type	Options:	0 = "Speed"		
		1250	Step 3 Type		1 = "Position Abs"		
		1260	Step 4 Type		2 = "PositionIncr"		
		1270	Step 5 Type				
		1280	Step 6 Type				
		1290	Step 7 Type				
		1300	Step 8 Type				
		1310	Step 9 Type				
		1320	Step 10 Type				
		1330	Step 11 Type				
		1340	Step 12 Type				
		1350	Step 13 Type				
		1360	Step 14 Type				
		1370	Step 15 Type				
		1380	Step 16 Type				
				Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Type			
				Set type of move for a particular step. The possible step types are:			
				"SpeedProfile" (0) = Speed Profile moves in speed mode.			
				"Position Abs" (1) = Position Absolute moves in absolute position mode.			
				"PositionIncr" (2) = Position Incremental moves in position increment mode.			
				The drive must have the direction mode set to the bipolar for the position regulator to function properly. The current, torque, and regen power limits must be set so as not to limit the programmed deceleration time. If the limits occur, the position regulator may overshoot the position set point.			
		1231	Step 1 Velocity	Units:	Hz	RW	Real
		1241	Step 2 Velocity		RPM		
		1251	Step 3 Velocity	Default:	0.00		
		1261	Step 4 Velocity	Min/Max:	–/+P27 [Motor NP Hertz] x 8		
1271	Step 5 Velocity		–/+P28 [Motor NP RPM] x 8				
1281	Step 6 Velocity						
1291	Step 7 Velocity						
1301	Step 8 Velocity						
1311	Step 9 Velocity						
1321	Step 10 Velocity						
1331	Step 11 Velocity						
1341	Step 12 Velocity						
1351	Step 13 Velocity						
1361	Step 14 Velocity						
1371	Step 15 Velocity						
1381	Step 16 Velocity						
		Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Velocity					
		Set speed at which a move will take place. The step velocity applies to all three types of moves – position absolute, position incremental, and speed profile. The motor may not achieve the step velocity in all cases. Short distance moves may begin to decelerate before the step velocity is reached. If the move is sufficiently long, then the motor speed will be limited to the step velocity. Sign on the step velocity is used to determine direction of motor rotation.					
		Cannot be used with most blended moves in Position Absolute type and Position Incremental type.					

File	Group	No.	Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	1232	Step 1 Accel	Units:	Secs	RW	Real
		1242	Step 2 Accel	Default:	10.00		
		1252	Step 3 Accel	Min/Max:	0.00 / 3600.00		
		1262	Step 4 Accel				
		1272	Step 5 Accel				
		1282	Step 6 Accel				
		1292	Step 7 Accel				
		1302	Step 8 Accel				
		1312	Step 9 Accel				
		1322	Step 10 Accel				
		1332	Step 11 Accel				
		1342	Step 12 Accel				
		1352	Step 13 Accel				
		1362	Step 14 Accel				
		1372	Step 15 Accel				
		1382	Step 16 Accel				
			Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Acceleration				
			Set acceleration time between zero and rated motor speed in seconds. The motor will accelerate towards the step speed using the step velocity parameter. The minimum acceleration rate is determined by the system inertia.				
			Cannot be used with most blended moves in Position Absolute type and Position Incremental type.				
		1233	Step 1 Decel	Units:	Secs	RW	Real
		1243	Step 2 Decel	Default:	10.00		
		1253	Step 3 Decel	Min/Max:	0.00 / 3600.00		
		1263	Step 4 Decel				
		1273	Step 5 Decel				
		1283	Step 6 Decel				
		1293	Step 7 Decel				
		1303	Step 8 Decel				
		1313	Step 9 Decel				
		1323	Step 10 Decel				
		1333	Step 11 Decel				
		1343	Step 12 Decel				
		1353	Step 13 Decel				
		1363	Step 14 Decel				
		1373	Step 15 Decel				
		1383	Step 16 Decel				
			Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Deceleration				
			Set deceleration time between rated motor speed and zero in seconds. The motor will decelerate towards zero speed. The minimum deceleration rate is determined by the system inertia.				
			Cannot be used with most blended moves in Position Absolute type and Position Incremental type.				

File	Group	No.	Name Description	Values	Read-Write	Data Type
APPLICATIONS	Profiling	1234 1244 1254 1264 1274 1284 1294 1304 1314 1324 1334 1344 1354 1364 1374 1384	Step 1 Value Step 2 Value Step 3 Value Step 4 Value Step 5 Value Step 6 Value Step 7 Value Step 8 Value Step 9 Value Step 10 Value Step 11 Value Step 12 Value Step 13 Value Step 14 Value Step 15 Value Step 16 Value Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Value These parameters can take on any one of several meanings depending on the move type and action. The possible meanings for these parameters are given below. For all other type/action combinations will be ignored. [Type] = Position Absolute [Action] = Posit Blend, Wait Dig-in, or Step to Next [Value] is the Absolute Target Position [Type] = Position Incremental [Action] = Posit Blend, Wait Dig-in, or Step to Next [Value] is the Incremental Target Position [Type] = Speed Profile [Action] = Posit Blend [Value] is the Incremental Target Position [Type] = Speed Profile [Action] = Time Blend, Wait Dig-in, or Step to Next [Value] is the Total Time to complete the move. Time is specified in 1/100ths of a second (1000 = 10.00 sec). Negative values result in time = 0 sec (no move) [Type] = Speed Profile [Action] = Parameter Blend [Value] is the parameter number to compare against the parameter set-point specified in the dwell parameter. Positive numbers will use a greater than check, negative numbers will use a less than check.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer
		1235 1245 1255 1265 1275 1285 1295 1305 1315 1325 1335 1345 1355 1365 1375 1385	Step 1 Dwell Step 2 Dwell Step 3 Dwell Step 4 Dwell Step 5 Dwell Step 6 Dwell Step 7 Dwell Step 8 Dwell Step 9 Dwell Step 10 Dwell Step 11 Dwell Step 12 Dwell Step 13 Dwell Step 14 Dwell Step 15 Dwell Step 16 Dwell Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Dwell Set time delay between moves. A profile status bit will be set to indicate that the step dwell period is active and timing [P1170 Bit11]. Zero value will disable dwell, negative value will wait forever. Not all steps can use dwell (example, most blended moves cannot use dwell). When the speed type with the parameter blend action move is used, the step dwell parameter will contain the parameter number of the set-point value to compare with the parameter selected in the value parameter.	Units: Secs Default: 0.00 Min/Max: -1.00 / 3600.00	RW	Real

File	Group	No.	Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	1236	Step 1 Batch	Default:	1	RW	32-bit Integer
		1246	Step 2 Batch	Min/Max:	0 / 65535		
		1256	Step 3 Batch				
		1266	Step 4 Batch				
		1276	Step 5 Batch				
		1286	Step 6 Batch				
		1296	Step 7 Batch				
		1306	Step 8 Batch				
		1316	Step 9 Batch				
		1326	Step 10 Batch				
		1336	Step 11 Batch				
		1346	Step 12 Batch				
		1356	Step 13 Batch				
		1366	Step 14 Batch				
		1376	Step 15 Batch				
		1386	Step 16 Batch				
		Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Batch					
		Set number of times to repeat a step. For example, a batch count of two will cause that step to repeat two times before starting the next step. These parameters cannot be used with position absolute moves, since this would imply moving to the same position repeatedly. These parameters cannot be used with most blended moves (exception dig-in blend), because most blended moves need to transition to the next step, instead of repeating. The dig-in blend moves use this parameter to specify the number of digital input transitions required. A zero step batch setting will cause that step to repeat forever.					
		1237	Step 1 Next	Default:	2	RW	32-bit Integer
		1247	Step 2 Next	Min/Max:	1 / 16		
		1257	Step 3 Next				
		1267	Step 4 Next				
		1277	Step 5 Next				
		1287	Step 6 Next				
		1297	Step 7 Next				
		1307	Step 8 Next				
		1317	Step 9 Next				
		1327	Step 10 Next				
		1337	Step 11 Next				
		1347	Step 12 Next				
		1357	Step 13 Next				
		1367	Step 14 Next				
		1377	Step 15 Next				
		1387	Step 16 Next				
Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Next							
Set step number that will be executed after the current step is complete. The current step will be complete after any batch repeat cycles have finished. Typically, steps are executed in ascending order, although this is not a requirement. These parameters do not apply to a step having an End action, since this step is normally used to terminate a sequence of step moves.							

File	Group	No.	Name Description	Values	Read-Write	Data Type
APPLICATIONS	Profiling	1238	Step 1 Action	Default: 1 = "Step to Next" Options: 0 = "End" 1 = "Step to Next" 2 = "Psn Blend" 3 = "Time Blend" 4 = "Param Blend" 5 = "DigIn Blend" 6 = "Wait DigIn"	RW	32-bit Integer
		1248	Step 2 Action			
		1258	Step 3 Action			
		1268	Step 4 Action			
		1278	Step 5 Action			
		1288	Step 6 Action			
		1298	Step 7 Action			
		1308	Step 8 Action			
		1318	Step 9 Action			
		1328	Step 10 Action			
		1338	Step 11 Action			
		1348	Step 12 Action			
		1358	Step 13 Action			
		1368	Step 14 Action			
		1378	Step 15 Action			
		1388	Step 16 Action			
APPLICATIONS	Profiling	1239	Step 1 Dig In	Default: 0.00 Options: 0.00 / 159999.15	RW	32-bit Integer
		1249	Step 2 Dig In			
		1259	Step 3 Dig In			
		1269	Step 4 Dig In			
		1279	Step 5 Dig In			
		1289	Step 6 Dig In			
		1299	Step 7 Dig In			
		1309	Step 8 Dig In			
		1319	Step 9 Dig In			
		1329	Step 10 Dig In			
		1339	Step 11 Dig In			
		1349	Step 12 Dig In			
		1359	Step 13 Dig In			
		1369	Step 14 Dig In			
		1379	Step 15 Dig In			
		1389	Step 16 Dig In			
APPLICATIONS	Profiling	1390	Step 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 Digital Input			
		1391	Set digital input sources. Not all steps use the digital input for the step move. The following type and action moves use the dig-in parameters to specify the digital input sources. Polarity (rising or falling edges) of digital input is set by the DI invert parameter [P1177]. 1. [Type] Position Absolute[Action] Wait DigIn 2. [Type] Position Incremental[Action] Wait DigIn 3. [Type] Speed Profile[Action] DigIn Blend 4. [Type] Speed Profile[Action] Wait DigIn			

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
APPLICATIONS	Camming	1390	PCAM Control Position Camming Control Sets bits to control the position CAM control logic. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Cndtl Hold</td><td>Unidirection</td><td>Reref Psn In</td><td>Offset En</td><td>Alt Slope</td><td>Aux Cam En</td><td>ReverseY Out</td><td>ReverseX In</td><td>Start</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Disabled 1 = Enabled Bit 0 "Start" – Start the position CAM Bit 1 "ReverseX In" – Reverse polarity of x-axis input (P1392 [PCAM Psn Select]) Bit 2 "ReverseY Out" – Reverse polarity of y-axis output at beginning of next cycle (P1473 [PCAM Psn Out]) Bit 3 "Aux Cam En" – Switch to the auxiliary CAM profile at beginning of next cycle Bit 4 "Alt Slope" – Use a different slope calculation Bit 5 "Offset En" – Enable input offset function (P1394 [PCAM Psn Ofst]) Bit 6 "Reref Psn In" – Permit re-referencing x-axis input (P1392 PCAM Psn Select) Bit 7 "Unidirection" – Use unidirectional operation Bit 8 "Cndtl Hold" – Freeze the speed regulator's integrator if position reference changes. This bit is recommended to be set for point to point motion		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Cndtl Hold	Unidirection	Reref Psn In	Offset En	Alt Slope	Aux Cam En	ReverseY Out	ReverseX In	Start	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Cndtl Hold	Unidirection	Reref Psn In	Offset En	Alt Slope	Aux Cam En	ReverseY Out	ReverseX In	Start																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		1391	PCAM Mode Position Camming Mode The parameter sets type of operational mode. "Off" (0) – Disable position CAM function "Single Step" (1) – At rising edge of Start (P1390 [PCAM Control]), the CAM profile begins at point 0 and runs until the x-axis has reached the last point defined by the end point (P1405 [PCAM Main EndPnt] and P1439 [PCAM Aux EndPnt]) at which point it is completed. If the x-axis then backs up into CAM range, nothing happens; the profile has already completed and won't restart until control Start (P1390 [PCAM Control]) is once again set. "Continuous" (2) – At rising edge of Start (P1390 [PCAM Control]), the CAM profile begins at point 0 and runs to the end point (P1405 [PCAM Main EndPnt] and P1439 [PCAM Aux EndPnt]), and then repeats forever or until the control bit Start (P1390 [PCAM Control]) is cleared. "Persistent" (3) – At rising edge of Start (P1390 [PCAM Control]), the CAM profile begins at point 0 and runs to the end point (P1405 [PCAM Main EndPnt] and P1439 [PCAM Aux EndPnt]), and remains active until the control bit Start (P1390 [PCAM Control]) is cleared.	Default: 0 = "Off" Options: 0 = "Off" 1 = "Single Step" 2 = "Continuous" 3 = "Persistent"	RW	32-bit Integer																																																			
		1392	PCAM Psn Select Position Camming Position Select The parameter selects a position reference source for x-axis.	Default: 1393 Options: 1 / 159999	RW	32-bit Integer																																																			
		1393	PCAM Psn Stpt Position Camming Position Setpoint The parameter provides position reference for x-axis when the position reference select (P1392 [PCAM Psn Select]) selects this parameter.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer																																																			
		1394	PCAM Psn Ofst Position Camming Position Offset The parameter provides position offset value to x-axis position when the offset enable control bit (P1390 [PCAM Control]) is set. The offset value causes a phase shift or position change in x-axis and a momentary change to CAM speed.	Default: 0 Min/Max: -2147483648 / 2147483647	RW	32-bit Integer																																																			
1395	PCAM PsnOfst Eps Position Camming Position Offset Eps The parameter provides count of edges per second for virtual encoder function. The value makes a limit on change of x-axis position in change of position offset input.	Default: 2000 Min/Max: 0 / 2147483647	RW	32-bit Integer																																																					
1396	PCAM Span X Position Camming Span X The parameter provides the number of integer counts equivalent to the span or range of x-axis.	Default: 8192 Min/Max: 0 / 2147483647	RW	32-bit Integer																																																					

File	Group	No.	Name Description	Values	Read-Write	Data Type
APPLICATIONS	Camming	1397	PCAM Scale X Position Camming Scale X The parameter multiplies span x (P1396 [PCAM Span X]) such that the x-axis dimension will expand if this parameter is greater than 1.	Default: 1.00 Min/Max: 0.01 / 214748000.00	RW	Real
		1398	PCAM Span Y Position Camming Span Y The parameter provides the number of edges equivalent to the span of the y-axis. The value is the number of integer counts representing the maximum vertical extent of the profile.	Default: 8192 Min/Max: 0 / 2147483647	RW	32-bit Integer
		1399	PCAM ScaleY Sel Position Camming Scale Y Select The parameter selects a source for y scale.	Default: 1400 Options: 1 / 159999	RW	32-bit Integer
		1400	PCAM ScaleYSetPt Position Camming Scale Y Setpoint The parameter provides y-axis scale when the y scale select (P1399 [PCAM ScaleY Sel]) selects this parameter. The y scale multiplies the y span such that the y-axis dimension will increase if y scale is greater than 1.	Default: 1.00 Min/Max: 0.01 / 214748000.00	RW	Real
		1401	PCAM VelScaleSel Position Camming Velocity Scale Select The parameter selects a source for velocity scale.	Default: 1402 Options: 1 / 159999	RW	32-bit Integer
		1402	PCAM VelScaleSP Position Camming Velocity Scale Setpoint The parameter provides velocity scale when the velocity scale select (P1401 [PCAM VelScaleSel]) selects this parameter. The velocity scale multiplies the velocity output (P1472 [PCAM Vel Out]) such that the velocity output (P1472) will decrease if the velocity scale is less than 1.	Units: MPE Default: 0.000100 Min/Max: 0.000000 / 8.00000	RW	Real
		1403	PCAM Slope Begin Position Camming Slope Begin The parameter provides beginning slope at CAM point 0. The parameter is used only if the segment is cubic type curve.	Default: 0.00 Min/Max: -214748000.00 / 214748000.00	RW	Real
		1404	PCAM Slope End Position Camming Slope End The parameter provides ending slope at CAM point 0. The parameter is used only if the segment is cubic type curve in both the main and the auxiliary CAM profile.	Default: 0.00 Min/Max: -214748000.00 / 214748000.00	RW	Real
		1405	PCAM Main EndPnt Position Camming Main End Point The parameter provides a number of the last CAM point used in the main CAM profile.	Default: 0 Options: 1 / 15	RW	32-bit Integer
		1406	PCAM Main Types Position Camming Main Types Each bit sets curve type for each segment in the main CAM profile. If the bit is clear, the curve is linear at the point of segment in the main CAM profile. If the bit is set, the curve is cubic at the point of segment in the main CAM profile. Options CubicCurve15 CubicCurve14 CubicCurve13 CubicCurve12 CubicCurve11 CubicCurve10 CubicCurve9 CubicCurve8 CubicCurve7 CubicCurve6 CubicCurve5 CubicCurve4 CubicCurve3 CubicCurve2 CubicCurve1 CubicCurve0 Default 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled			

File	Group	No.	Name Description	Values	Read-Write	Data Type
APPLICATIONS	Camming	1407	PCAM Main Pt X 0	Default: 0.00	RW	Real
		1409	PCAM Main Pt X 1	Min/Max: -/+220000000.00		
		1411	PCAM Main Pt X 2			
		1413	PCAM Main Pt X 3			
		1415	PCAM Main Pt X 4			
		1417	PCAM Main Pt X 5			
		1419	PCAM Main Pt X 6			
		1421	PCAM Main Pt X 7			
		1423	PCAM Main Pt X 8			
		1425	PCAM Main Pt X 9			
		1427	PCAM Main PtX 10			
		1429	PCAM Main PtX 11			
		1431	PCAM Main PtX 12			
		1433	PCAM Main PtX 13			
		1435	PCAM Main PtX 14			
		1437	PCAM Main PtX 15			
			Position Camming Main Point X 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15			
			Provides x-coordinate value for CAM point in the main CAM profile.			
		1408	PCAM Main Pt Y 0	Default: 0.00	RW	Real
		1410	PCAM Main Pt Y 1	Min/Max: -/+220000000.00		
		1412	PCAM Main Pt Y 2			
		1414	PCAM Main Pt Y 3			
		1416	PCAM Main Pt Y 4			
		1418	PCAM Main Pt Y 5			
		1420	PCAM Main Pt Y 6			
		1422	PCAM Main Pt Y 7			
		1424	PCAM Main Pt Y 8			
		1426	PCAM Main Pt Y 9			
		1428	PCAM Main PtY 10			
		1430	PCAM Main PtY 11			
		1432	PCAM Main PtY 12			
		1434	PCAM Main PtY 13			
		1436	PCAM Main PtY 14			
		1438	PCAM Main PtY 15			
			Position Camming Main Point Y 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15			
			Provides y-coordinate value for CAM point in the main CAM profile.			
		1439	PCAM Aux EndPnt Position Camming Auxiliary End Point Provides a number of the last CAM point used in the auxiliary CAM profile.	Default: 0 Options: 1 / 15	RW	32-bit Integer
		1440	PCAM Aux Types Position Camming Auxiliary Types Each bit sets curve type for each segment in the auxiliary CAM profile. If the bit is clear, the curve is linear at the point of segment in the auxiliary CAM profile. If the bit is set, the curve is cubic at the point of segment in the auxiliary CAM profile.			
			Options			
			CubicCurve15			
			CubicCurve14			
			CubicCurve13			
			CubicCurve12			
			CubicCurve11			
			CubicCurve10			
			CubicCurve9			
			CubicCurve8			
			CubicCurve7			
			CubicCurve6			
			CubicCurve5			
			CubicCurve4			
			CubicCurve3			
			CubicCurve2			
			CubicCurve1			
			Reserved			
			Default	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 = Disabled	
			Bit	15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0	1 = Enabled	
		1441	PCAM Aux Pt X 1	Default: 0.00	RW	Real
		1443	PCAM Aux Pt X 2	Min/Max: -/+220000000.00		
		1445	PCAM Aux Pt X 3			
		1447	PCAM Aux Pt X 4			
		1449	PCAM Aux Pt X 5			
		1451	PCAM Aux Pt X 6			
		1453	PCAM Aux Pt X 7			
		1455	PCAM Aux Pt X 8			
		1457	PCAM Aux Pt X 9			
		1459	PCAM Aux PtX 10			
		1461	PCAM Aux PtX 11			
		1463	PCAM Aux PtX 12			
		1465	PCAM Aux PtX 13			
		1467	PCAM Aux PtX 14			
		1469	PCAM Aux PtX 15			
			Position Camming Auxiliary Point X 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15			
			Provides x-coordinate value for CAM point in the auxiliary CAM profile.			

File	Group	No.	Name Description	Values	Read-Write	Data Type
APPLICATIONS	Camming	1442	PCAM Aux Pt Y 1	Default: 0.00	RW	Real
		1444	PCAM Aux Pt Y 2	Min/Max: -/+220000000.00		
		1446	PCAM Aux Pt Y 3			
		1448	PCAM Aux Pt Y 4			
		1450	PCAM Aux Pt Y 5			
		1452	PCAM Aux Pt Y 6			
		1454	PCAM Aux Pt Y 7			
		1456	PCAM Aux Pt Y 8			
		1458	PCAM Aux Pt Y 9			
		1460	PCAM Aux Pt Y 10			
APPLICATIONS	Camming	1462	PCAM Aux Pt Y 11		RW	Real
		1464	PCAM Aux Pt Y 12			
		1466	PCAM Aux Pt Y 13			
		1468	PCAM Aux Pt Y 14			
		1470	PCAM Aux Pt Y 15			
		Position Camming Auxiliary Point Y 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15				
		Provides y-coordinate value for CAM point in the auxiliary CAM profile.				
		1471	PCAM Status			
		Position Camming Status				
		Indicates status of position CAM logic.				
APPLICATIONS	Camming	Options			RW	Real
		Reserved				
		Reserved				
		Reserved				
		Cndtnl Hold				
		Unidirection				
		Reref Pos In				
		Offset En				
		Alt Slope				
		Aux Cam En				
APPLICATIONS	Camming	ReverseY Out			RW	Real
		ReverseX In				
		Start				
		In Cam				
		Persist Mode				
		Contins Mode				
		Single Mode				
		Default				
		Bit				
		15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0				
APPLICATIONS	Camming	0 = Disabled			RW	Real
		1 = Enabled				
		Bit 0 "Single Mode" – Position CAM is in single step mode.				
		Bit 1 "Contins Mode" – Position CAM is in continuous mode.				
		Bit 2 "Persist Mode" – Position CAM is in persistent mode.				
		Bit 3 "In Cam" – X-axis is in range of defined profile.				
		Bit 4 "Start" – Position CAM has started.				
		Bit 5 "ReverseX In" – X-axis input is reversed.				
		Bit 6 "ReverseY Out" – Y-axis output is reversed.				
		Bit 7 "Aux Cam En" – Auxiliary CAM profile is in use.				
APPLICATIONS	Camming	Bit 8 "Alt Slope" – Alternated slope is in use.			RW	Real
		Bit 9 "Offset En" – X-axis offset is enabled.				
		Bit 10 "Reref Pos In" – X-position input is re-referencing.				
		Bit 11 "Unidirection" – Position CAM is in unidirectional mode.				
		Bit 12 "Cndtnl Hold" – Conditional integrator hold is in use.				
		1472	PCAM Vel Out	Units: Hz RPM		
		Position Camming Velocity Output				
		Indicates output velocity in per unit. The value is connected to the speed regulator.				
		Default: 0.00				
		Min/Max: 0.00 / P27 [Motor NP Hertz] x 8 0.00 / P28 [Motor NP RPM] x 8				
APPLICATIONS	Camming	1473	PCAM Psn Out	Default: 0.00	RW	Real
		Position Camming Position Output				
		Indicates output position. The value is connected to the position regulator.				
		Min/Max: -/+220000000.00				
		1474	DI PCAM Start	Default: 0.00		
		Digital Input Position Camming Start				
		Selects the digital input used to start the position camming sequence.				
		Min/Max: 0.00 / 159999.15				

Drive Parameter Cross Reference By Name

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Data Out B2	908
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I/O Module Parameters

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
HOST GROUPS	Digital Inputs	1	Dig In Sts  Digital Input Status Status of the digital inputs. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Input 5</td><td>Input 4</td><td>Input 3</td><td>Input 2</td><td>Input 1</td><td>Input 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Input Not Activated 1 = Input Activated	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Input 5	Input 4	Input 3	Input 2	Input 1	Input 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Input 5	Input 4	Input 3	Input 2	Input 1	Input 0																																						
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
2	Dig In Filt Mask Digital Input Filter Mask Filters the selected digital input. Important: Only used by I/O Module models 20-750-2263C-1R2T and 20-750-2262C-2R. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Input 5</td><td>Input 4</td><td>Input 3</td><td>Input 2</td><td>Input 1</td><td>Input 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Input Not Filtered 1 = Input Filtered	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Input 5	Input 4	Input 3	Input 2	Input 1	Input 0	Default	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Input 5	Input 4	Input 3	Input 2	Input 1	Input 0																																								
Default	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1																																								
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
3	Dig In Filt Digital Input Filter Sets the amount of filtering on the digital inputs. Important: Only used by I/O Module models 20-750-2263C-1R2T and 20-750-2262C-2R.	Units: mS Default: 4 Min/Max: 2 / 10	RW	32-bit Integer																																																				

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																						
HOST GROUPS	Digital Outputs	5	Dig Out Sts  Digital Output Status Status of the digital outputs. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Trans Out 1⁽²⁾</td><td>Trans Out 0⁽¹⁾</td><td>Relay Out 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> (1) Bit 1 = "Trans Out 0" for I/O Module model 20-750-2263C-1R2T = "Relay Out 1" for I/O Module models 20-750-2262C-2R and 20-750-2262D-2R (2) Bit 2 is only used by I/O Module 20-750-2263C-1R2T		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Trans Out 1 ⁽²⁾	Trans Out 0 ⁽¹⁾	Relay Out 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = Output De-energized 1 = Output Energized				
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Trans Out 1 ⁽²⁾	Trans Out 0 ⁽¹⁾	Relay Out 0																																									
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																										
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																										
		6	Dig Out Invert Digital Output Invert Inverts the selected digital output. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Trans Out 1⁽²⁾</td><td>Trans Out 0⁽¹⁾</td><td>Relay Out 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td></td></tr></table> (1) Bit 1 = "Trans Out 0" for I/O Module model 20-750-2263C-1R2T = "Relay Out 1" for I/O Module models 20-750-2262C-2R and 20-750-2262D-2R (2) Bit 2 is only used by I/O Module 20-750-2263C-1R2T		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Trans Out 1 ⁽²⁾	Trans Out 0 ⁽¹⁾	Relay Out 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		0 = Output Not Inverted 1 = Output Inverted		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Trans Out 1 ⁽²⁾	Trans Out 0 ⁽¹⁾	Relay Out 0																																									
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																										
		7	Dig Out Setpoint Digital Output Setpoint Controls Relay or Transistor Outputs when chosen as the source. Can be used to control outputs from a communication device using DataLinks. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Trans Out 1⁽²⁾</td><td>Trans Out 0⁽¹⁾</td><td>Relay Out 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td></td></tr></table> (1) Bit 1 = "Trans Out 0" for I/O Module model 20-750-2263C-1R2T = "Relay Out 1" for I/O Module models 20-750-2262C-2R and 20-750-2262D-2R (2) Bit 2 is only used by I/O Module 20-750-2263C-1R2T		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Trans Out 1 ⁽²⁾	Trans Out 0 ⁽¹⁾	Relay Out 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		0 = Output De-energized 1 = Output Energized		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Trans Out 1 ⁽²⁾	Trans Out 0 ⁽¹⁾	Relay Out 0																																									
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																											
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																												
10	RO0 Sel Relay Output 0 Select Selects the source that will energize the relay output.	Default: 0.00 (Disabled) Min/Max: 0.00 / 159999.15	RW	32-bit Integer																																																								
11	RO0 Level Sel Relay Output 0 Level Select Selects the source of the level that will be compared.	Default: 0 (Disabled) Min/Max: 0 / 159999	RW	32-bit Integer																																																								
12	RO0 Level Relay Output 0 Level Sets the level compare value.	Default: 0.0 Min/Max: -/+1000000.0	RW	Real																																																								

File	Group	No.	Name Description	Values		Read-Write	Data Type																																																		
HOST GROUPS	Digital Outputs	13	RO0 Level CmpSts  Relay Output 0 Level Compare Status Status of the level compare, and a possible source for a relay or transistor output. Relay Output X Select or Transistor Output X Select must have this selected to energize the output. Can be used without a physical output as status information only. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Grt Than Equ</td><td>Less Than</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Less Than" – Level source is less than the level value. Bit 1 "Grt Than Equ" – Level source is greater than or equal to the level value.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Grt Than Equ	Less Than	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Grt Than Equ	Less Than																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		14	RO0 On Time Relay Output 0 On Time Sets the "ON Delay" time for the digital outputs. This is the time between the occurrence of a condition and activation of the relay.	Units: Secs Default: 0.0 Min/Max: 0.0 / 600.0		RW	Real																																																		
		15	RO0 Off Time Relay Output 0 Off Time Sets the "OFF Delay" time for the digital outputs. This is the time between the disappearance of a condition and de-activation of the relay.	Units: Secs Default: 0.0 Min/Max: 0.0 / 600.0		RW	Real																																																		
		20	RO1 Sel Relay Output 1 Select – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. TO0 Sel Transistor Output 0 Select – I/O Module model 20-750-2263C-1R2T is installed. Selects the source that will energize the relay or transistor output.	Default: 0 (Disabled) Min/Max: 0 / 15999915		RW	32-bit Integer																																																		
		21	RO1 Level Sel Relay Output 1 Level Select – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. TO0 Level Sel Transistor Output 0 Level Select – I/O Module model 20-750-2263C-1R2T is installed. Selects the source of the level that will be compared.	Default: 0 (Disabled) Min/Max: 0 / 159999		RW	32-bit Integer																																																		
		22	RO1 Level Relay Output 1 Level – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. TO0 Level Transistor Output 0 Level – I/O Module model 20-750-2263C-1R2T is installed. Sets the level compare value.	Default: 0.0 Min/Max: -/+1000000.0		RW	Real																																																		
		23	RO1 Level CmpSts  Relay Output 1 Level Compare Status – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. TO0 Level CmpSts Transistor Output 0 Level Compare Status – I/O Module model 20-750-2263C-1R2T is installed. Status of the level compare, and a possible source for a relay or transistor output. Relay Output X Select or Transistor Output X Select must have this selected to energize the output. Can be used without a physical output as status information only. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Grt Than Equ</td><td>Less Than</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Less Than" – Level source is less than the level value. Bit 1 "Grt Than Equ" – Level source is greater than or equal to the level value.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Grt Than Equ	Less Than	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Grt Than Equ	Less Than																																									
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									

File	Group	No.	Name Description	Values		Read-Write	Data Type																																																		
HOST GROUPS	Digital Outputs	24	RO1 On Time Relay Output 1 On Time – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. TO0 On Time Transistor Output 0 On Time – I/O Module model 20-750-2263C-1R2T is installed. Sets the “ON Delay” time for the digital outputs. This is the time between the occurrence of a condition and activation of the relay or transistor.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real																																																		
		25	RO1 Off Time Relay Output 1 Off Time – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. TO0 Off Time Transistor Output 0 Off Time – I/O Module model 20-750-2263C-1R2T is installed. Sets the “OFF Delay” time for the digital outputs. This is the time between the disappearance of a condition and de-activation of the relay or transistor.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real																																																		
		30	TO1 Sel Transistor Output 1 Select Selects the source that will energize the transistor output. Important: Only used by I/O Module model 20-750-2263C-1R2T.	Default: Min/Max:	0 (Disabled) 0 / 159999.15	RW	32-bit Integer																																																		
		31	TO1 Level Sel Transistor Output 1 Level Select Selects the source of the level that will be compared. Important: Only used by I/O Module model 20-750-2263C-1R2T.	Default: Min/Max:	0 (Disabled) 0 / 159999.15	RW	32-bit Integer																																																		
		32	TO1 Level Transistor Output 1 Level Sets the level compare value. Important: Only used by I/O Module model 20-750-2263C-1R2T.	Default: Min/Max:	0.0 –/+1000000.0	RW	Real																																																		
		33	TO1 Level CmpSts  Transistor Output 1 Level Compare Status Status of the level compare, and a possible source for a transistor output. Transistor Output X Select must have this selected to energize the output. Can be used without a physical output as status information only. <table><tr><td>Options</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Grt Than Equ</td><td>Less Than</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> Bit 0 “Less Than” – Level source is less than the level value. Bit 1 “Grt Than Equ” – Level source is greater than or equal to the level value. Important: Only used by I/O Module model 20-750-2263C-1R2T.	Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Grt Than Equ	Less Than	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = Condition False 1 = Condition True		
		Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Grt Than Equ	Less Than																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									
34	TO1 On Time Transistor Output 1 On Time Sets the “ON Delay” time for the digital outputs. This is the time between the occurrence of a condition and activation of the transistor. Important: Only used by I/O Module model 20-750-2263C-1R2T.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real																																																				
35	TO1 Off Time Transistor Output 1 Off Time Sets the “OFF Delay” time for the digital outputs. This is the time between the disappearance of a condition and de-activation of the transistor. Important: Only used by I/O Module model 20-750-2263C-1R2T.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real																																																				

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
HOST GROUPS	Motor PTC	40	PTC Cfg Positive Temperature Coefficient Configuration Sets the action that will be taken when the PTC is not Ok. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer																																																			
		41	 PTC Sts Positive Temperature Coefficient Status Status of the PTC. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Over Temp</td><td>PTC Short</td><td>PTC Ok</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "PTC Ok" – PTC is OK Bit 1 "PTC Short" – PTC is Shorted Bit 2 "Over Temp" – PTC is indicating over temperature		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Over Temp	PTC Short	PTC Ok	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Over Temp	PTC Short	PTC Ok																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									
42	 PTC Raw Value Positive Temperature Coefficient Raw Value Displays the value of the PTC.	Units: VAC Default: 0 Min/Max: 0 / 10	RO	Real																																																					

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
HOST GROUPS	Analog Inputs	45	 Anlg In Type Analog Input Type Status of the analog input mode set by the option jumpers. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Analog 1</td><td>Analog 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Voltage Mode 1 = Current Mode		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 1	Analog 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 1	Analog 0																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									
46	Anlg In Sqrt Analog Input Square Root Enables/disables the square root function for each input. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Analog 1</td><td>Analog 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Square Root Disabled 1 = Square Root Enabled		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 1	Analog 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0					
	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 1	Analog 0																																									
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																				
HOST GROUPS	Analog Inputs	47	Anlg In Loss Sts  Analog Input Loss Status Status of the analog input loss. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Loss 1</td><td>Loss 0</td><td>Loss</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Loss not Present 1 = Loss Present Bit 0 "Loss" – Indicates loss of one or both inputs.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Loss 1	Loss 0	Loss	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Loss 1	Loss 0	Loss																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
		50	Anlg In0 Value  Analog Input 0 Value Value of the Analog input after filter, square root, and loss action.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA	RO	Real																																																				
51	Anlg In0 Hi Analog Input 0 High Sets the highest input value to the analog input scaling block.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA	RW	Real																																																						
52	Anlg In0 Lo Analog Input 0 Low Sets the lowest input value to the analog input scaling block.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA	RW	Real																																																						
		53	Anlg In0 LssActn Analog Input 0 Loss Action Selects drive action when an analog signal loss is detected. Signal loss is defined as an analog signal less than 1V or 2mA. The signal loss event ends and normal operation resumes when the input signal level is greater than or equal to 1.5V or 3mA. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs "Hold Input" (6) – Holds input at last value "Set Input Lo" (7) – Sets input to P52 [Anlg In0 Lo] "Set Input Hi" (8) – Sets input to P51 [Anlg In0 Hi]	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop" 6 = "Hold Input" 7 = "Set Input Lo" 8 = "Set Input Hi"	RW	32-bit Integer																																																				

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS	Analog Inputs	54	Anlg In0 Raw Val Analog Input 0 Raw Value Raw Value of the analog input.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: ± 10.000 Volts 0.000 / 20.000 mA	RO	Real
		55	Anlg In0 Filt Gn Analog Input 0 Filter Gain Sets the analog input filter gain.	Default: 1.00 Min/Max: ± 5.00	RW	Real
		56	Anlg In0 Filt BW Analog Input 0 Filter Bandwidth Sets the analog input filter bandwidth.	Default: 0.0 Min/Max: 0.0 / 500.0	RW	Real
		60	Anlg In1 Value Analog Input 1 Value Value of the Analog input after filter, square root, and loss action.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: ± 10.000 Volts 0.000 / 20.000 mA	RO	Real
		61	Anlg In1 Hi Analog Input 1 High Sets the highest input value to the analog input scaling block.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: ± 10.000 Volts 0.000 / 20.000 mA	RW	Real
		62	Anlg In1 Lo Analog Input 1 Low Sets the lowest input value to the analog input scaling block.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: ± 10.000 Volts 0.000 / 20.000 mA	RW	Real
		63	Anlg In1 LssActn Analog Input 1 Loss Action Selects drive action when an analog signal loss is detected. Signal loss is defined as an analog signal less than 1V or 2mA. The signal loss event ends and normal operation resumes when the input signal level is greater than or equal to 1.5V or 3mA. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs "Hold Input" (6) – Holds input at last value "Set Input Lo" (7) – Sets input to P62 [Anlg In1 Lo] "Set Input Hi" (8) – Sets input to P61 [Anlg In1 Hi]	Default: 0 = "Ignore" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop" 6 = "Hold Input" 7 = "Set Input Lo" 8 = "Set Input Hi"	RW	32-bit Integer
		64	Anlg In1 Raw Val Analog Input 1 Raw Value Raw Value of the analog input.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: ± 10.000 Volts 0.000 / 20.000 mA	RO	Real
		65	Anlg In1 Filt Gn Analog Input 1 Filter Gain Sets the analog input filter gain.	Default: 1.00 Min/Max: ± 5.00	RW	Real
		66	Anlg In1 Filt BW Analog Input 1 Filter Bandwidth Sets the analog input filter bandwidth.	Default: 0.0 Min/Max: 0.0 / 500.0	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																				
HOST GROUPS	Analog Outputs	70	Anlg Out Type Analog Output Type Select the analog output mode for each analog output. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Analog 1</td><td>Analog 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Voltage Mode 1 = Current Mode	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 1	Analog 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 1	Analog 0																																								
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
		71	Anlg Out Abs Analog Output Absolute Selects whether the signed value or absolute value of a parameter is used before being scaled to drive the analog output. Options <table><tr><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Analog 1</td><td>Analog 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 1	Analog 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 1	Analog 0																																								
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
		75	Anlg Out0 Sel Analog Output 0 Select Selects the source for the analog output.	Default: 3 Min/Max: 0 / 159999	RW	32-bit Integer																																																				
		76	Anlg Out0 Stpt Analog Output 0 Setpoint A possible source for an analog output. Can be used to control an analog output from a communication device using a DataLink.	Units: VAC Default: 0 Min/Max: -10/20	RW	Real																																																				
77	Anlg Out0 Data Analog Output 0 Data Displays the value of the source selected by P75 [Anlg Out0 Sel].	Default: 0 Min/Max: -/+100000	RO	Real																																																						
78	Anlg Out0 DataHi Analog Output 0 Data High Sets the high value for the data range of analog out scale.	Default: 1 Min/Max: -/+214748000	RW	Real																																																						
79	Anlg Out0 DataLo Analog Output 0 Data Low Sets the low value for the data range of analog out scale.	Default: 1 Min/Max: -/+214748000	RW	Real																																																						
80	Anlg Out0 Hi Analog Output 0 High Sets the high value for the analog output value when the data value is at its maximum.	Units: Volts mA Default: 10.000 Volts 20.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA	RW	Real																																																						
81	Anlg Out0 Lo Analog Output 0 Low Sets the low value for the analog output value when the data value is at its minimum.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA	RW	Real																																																						
82	Anlg Out0 Val Analog Output 0 Value Displays the analog output value.	Units: Volts mA Default: 10.000 Volts 20.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA	RO	Real																																																						

File	Group	No.	Name Description	Values		Read-Write	Data Type
HOST GROUPS	Analog Outputs	85	Anlg Out1 Sel Analog Output 1 Select Selects the source for the analog output.	Default: 3 Min/Max: 0 / 159999		RO	32-bit Integer
		86	Anlg Out1 Stpt Analog Output 1 Setpoint A possible source for an analog output. Can be used to control an analog output from a communication device using a DataLink.	Units: VAC Default: 0 Min/Max: -10 / 20		RO	Real
		87	Anlg Out1 Data Analog Output 1 Data Displays the value of the source selected by P85 [Anlg Out1 Sel].	Default: 0 Min/Max: -/+100000		RO	Real
		88	Anlg Out1 DataHi Analog Output 1 Data High Sets the high value for the data range of analog out scale.	Default: 1 Min/Max: -/+214748000		RO	Real
		89	Anlg Out1 DataLo Analog Output 1 Data Low Sets the low value for the data range of analog out scale.	Default: 1 Min/Max: -/+214748000		RO	Real
		90	Anlg Out1 Hi Analog Output 1 High Sets the high value for the analog output value when the data value is at its maximum.	Units: Volts mA Default: 10.000 Volts 20.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA		RO	Real
		91	Anlg Out1 Lo Analog Output 1 Low Sets the low value for the analog output value when the data value is at its minimum.	Units: Volts mA Default: 0.000 Volts 0.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA		RO	Real
		92	Anlg Out1 Val Analog Output 1 Value Displays the analog output value.	Units: Volts mA Default: 10.000 Volts 20.000 mA Min/Max: -/+10.000 Volts 0.000 / 20.000 mA		RO	Real

File	Group	No.	Name Description	Values		Read-Write	Data Type																																																	
HOST GROUPS	Predictive Main	99	PredMaint Sts Predictive Maintenance Status Status of relay's predictive maintenance. Options <table><tr><td></td><td>Master</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Relay Out 0⁽¹⁾</td><td>Relay Out 0</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True (¹) Bit 1 = "Relay Out 0" for I/O Module models 20-750-2262C-2R and 20-750-2262D-2R		Master	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Relay Out 0 ⁽¹⁾	Relay Out 0	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Master	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Relay Out 0 ⁽¹⁾	Relay Out 0																																						
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						
		100	RO0 Load Type Relay Output 0 Load Type Sets the type of load that will be applied to the relay. Must be properly set for the Predictive Maintenance function to predict the relay life.	Default: 1 = "DC Inductive" Options: 0 = "DC Resistive" 1 = "DC Inductive" 2 = "AC Resistive" 3 = "AC Inductive"	RW	32-bit Integer																																																		
		101	RO0 Load Amps Relay Output 0 Load Amps Load current that will be applied to the relay contacts. Must be properly set for the Predictive Maintenance function to approximate the relay life.	Units: Amps Default: 2.000 Min/Max: 0.000 / 2.000	RW	Real																																																		
		102	RO0 TotalLife Relay Output 0 Total Life Total life cycles of the relay based on programmed load type and amps.	Units: Cycl Default: 0 Min/Max: 0 / 2147483647	RO	32-bit Integer																																																		
		103	RO0 ElapsedLife Relay Output 0 Elapsed Life Non-resettable, total accumulated cycles of the relay.	Units: Cycl Default: 0 Min/Max: 0 / 2147483647	RO	32-bit Integer																																																		
		104	RO0 RemainLife Relay Output 0 Remaining Life The difference between the Total Life and the Elapsed Life.	Units: Cycl Default: 0 Min/Max: -/+2147483647	RO	32-bit Integer																																																		
		105	RO0 LifeEvtLvl Relay Output 0 Life Event Level Sets the percentage of relay life cycles before action is taken.	Units: % Default: 80.000 Min/Max: 0.000 / 100.000	RW	Real																																																		
106	RO0 LifeEvtActn Relay Output 0 Life Event Action Sets the action that will be taken when the percentage of relay life cycles has been reached.	Default: 1 = "Alarm" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Fit Minor" 3 = "FitCoastStop" 4 = "Fit RampStop" 5 = "Fit CL Stop"	RW	32-bit Integer																																																				

File	Group	No.	Name Description	Values		Read-Write	Data Type
HOST GROUPS	Predictive Main	110	RO1 Load Type Relay Output 1 Load Type Sets the type of load that will be applied to the relay. Must be properly set for the Predictive Maintenance function to predict the relay life. Important: Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Default: 1 = "DC Inductive" Options: 0 = "DC Resistive" 1 = "DC Inductive" 2 = "AC Resistive" 3 = "AC Inductive"		RW	32-bit Integer
		111	RO1 Load Amps Relay Output 1 Load Amps Load current that will be applied to the relay contacts. Must be properly set for the Predictive Maintenance function to approximate the relay life. Important: Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Amps Default: 2.000 Min/Max: 0.000 / 2.000		RW	Real
		112	RO1 TotalLife Relay Output 1 Total Life Total life cycles of the relay based on programmed load type and amps. Important: Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Cycl Default: 0 Min/Max: 0 / 2147483647		RO	32-bit Integer
		113	RO1 ElapsedLife Relay Output 1 Elapsed Life Non-resettable, total accumulated cycles of the relay. Important: Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Cycl Default: 0 Min/Max: 0 / 2147483647		RO	32-bit Integer
		114	RO1 RemainLife Relay Output 1 Remaining Life The difference between the Total Life and the Elapsed Life. Important: Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Cycl Default: 0 Min/Max: -/+2147483647		RO	32-bit Integer
		115	RO1 LifeEvtLvl Relay Output 1 Life Event Level Sets the percentage of relay life cycles before action is taken. Important: Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: % Default: 80.000 Min/Max: 0.000 / 100.000		RW	Real
		116	RO1 LifeEvtActn Relay Output 1 Life Event Action Sets the action that will be taken when the percentage of relay life cycles has been reached. Important: Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Default: 1 = "Alarm" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"		RW	32-bit Integer

Single Incremental Encoder Module Parameters

File

Group

No.

Name
Description

Values

Read-Write

Data Type

HOST GROUPS

1

 **Encoder Cfg**
Encoder Configure
Configures the position direction, speed calculation method, signal type and active encoder channels.

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Direction	Single Ended	Inv Home In	Edge Mode	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Z Channel Enbl" – Configures the Channel Z to be used and monitored for Phase Loss. A value of 0 = the Z channel will be ignored.
Bit 1 "A Chan Only" – Configures the module to use only the A channel, and ignore the B channel. In this mode, direction cannot be determined, and the position counter will always count up.
Bit 2 "Edge Mode" – Configure the module to use AB edge time data for speed calculation rather than accumulated count.
Bit 3 "Inv Home In" – Configures the home input to be inverted. 1 = inverted, 0 = not inverted
Bit 4 "Single Ended" – Configure when the A Quad B encoder has single ended signals. In this mode, Phase Loss detection is disabled. 0 = Differential, 1 = Single Ended
Bit 5 "Direction" – Inverts the position count up/down associated with a given rotation direction internally. 1 = invert, 0 = do not invert

2

 **Encoder PPR**
Encoder Pulses Per Revolution
Configures the encoder module for the Pulses Per Revolution (Encoder Lines) of the A Quad B Encoder.

Default: 1024
Min/Max: 2 / 20000

RW

Real

3

 **Fdbk Loss Cfg**
Feedback Loss Configure
Configures how the drive reacts to an error status condition for the feedback.

Default: 3 = "FltCoastStop"
Options:
0 = "Ignore"
1 = "Alarm"
2 = "Flt Minor"
3 = "FltCoastStop"

RW

Real

4

 **Encoder Feedback**
Encoder Feedback
Displays the position feedback value of the encoder. This should be used as a source for the main control (port 0) Feedback Select.

Default: 0
Min/Max: -/+2147483647

RO

Real

File

Group

No.

Name
Description

Values

Read-Write

Data Type

5

 Encoder Status
Status information for the Incremental Encoder Module

Options

	Direction	HomMrk Event	HomMrk Armed	HomIn Event	HomIn Armed	Home Input	Inv Home In	Marker Event	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Z Chan Enbl" – State of the corresponding bit in the [Encoder Cfg] parameter.
Bit 1 "A Chan Only" – State of the corresponding bit in the [Encoder Cfg] parameter.
Bit 2 "A Input" – State of encoder A input signal.
Bit 3 "A Not Input" – State of encoder A Not input signal.
Bit 4 "B Input" – State of encoder B input signal.
Bit 5 "B Not Input" – State of encoder B Not input signal.
Bit 6 "Z Input" – State of encoder Z input signal.
Bit 7 "Z Not Input" – State of encoder Z Not input signal.
Bit 8 "Marker Event" – When channel Z (marker pulse) is used, indicates that a marker pulse is detected. Automatically cleared in the homing routine or due to clearing of encoder faults.
Bit 9 "Inv Home In" – State of the corresponding bit in the [Encoder Cfg] parameter. When set, the home input signal will be inverted.
Bit 10 "Home Input" – Active state of the Home Input signal. This status bit gets inverted if the "Inv Home In" bit is enabled.
Bit 11 "HomIn Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next transition of the home input.
Bit 12 "HomIn Event" – Indicates that the homing logic has latched the encoder position in response to a transition of the home input.
Bit 13 "HomMrk Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next marker (Z channel) pulse.
Bit 14 "HomMrk Event" – Indicates that the homing logic has latched the encoder position in response to a marker (Z channel) pulse.
Bit 15 "Direction" – State of the corresponding bit in the [Encoder Cfg] parameter.

6

 Error Status
Status information that will result in a feedback loss condition.

Options

	SI Comm Loss	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Quad Loss	Phase Loss	Open Wire
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Open Wire" – Indicates that an input signal (A, B or Z) is in the same state as its complement (A Not, B Not, Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled. -- see [Encoder Cfg].
Bit 1 "Phase Loss" – Indicates that more than 30 phase loss (open wire) events have occurred over an 8msec time period. The same restrictions apply as on [Encoder Cfg] bit 0.
Bit 2 "Quad Loss" – Quadrature loss events occur when simultaneous edge transitions occur on both the A and B encoder channels. Indicates that more than 10 quad loss events over a 10 msec time period are detected. Only valid when both A and B channels are used (not 'A Chan Only' in [Encoder Cfg]).
Bit 15 "SI Comm Loss" – Indicates a communication loss between the main control board and the encoder module over the Serial Interface backplane.

7

 Phase Loss Count
Displays the active value of the encoder module's phase loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Phase Loss errors.

Default: 0
Min/Max: 0 / 127

RO

Real

8

 Quad Loss Count
Displays the active value of the encoder module's quad loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Quad Loss errors.

Default: 0
Min/Max: 0 / 15

RO

Real

HOST GROUPS

Safe Speed Monitor Module Parameters

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		1	Password Password for Lock and Unlock function.	Default: N/A Min/Max: 0 / 4,294,967,295	RO	Real
		5	Lock State Command to lock or unlock the safety option configuration.	Default: 0 = "Unlock" Options: 0 = "Unlock" 1 = "Lock"	RW	Real
		6	Operating Mode Command to place the system in Program or Run mode.	Default: 0 = "Program" Options: 0 = "Program" 1 = "Run" 2 = "Config flt"	RW	Real
		7	Reset Defaults Resets safety option to factory defaults.	Default: 0 = "No action" Options: 0 = "No action" 1 = "Reset Fac" (Reset to factory defaults)	RW	Real
		10	Signature ID Safety configuration identifier.	Default: N/A Min/Max: 0 / 4,294,967,295	RO	Real
		13	New Password 32-bit configuration password.	Default: N/A Min/Max: 0 / 4,294,967,295	RW	Real
		17	Password Command Save new password command.	Default: 0 = "No action" Options: 0 = "No action" 1 = "Change PW" (Change Password) 2 = "Reset PW" (Reset Password)	RW	Real
		18	Security Code Used for Reset Password command.	Default: N/A Min/Max: 0 / 65,535	RO	Real
		19	Vendor Password Vendor password for Reset Password command.	Default: N/A Min/Max: 0 / 65,535	RW	Real
		20	Cascaded Config Defines whether the speed monitoring safety option is a single unit or if it occupies a first, middle, or last position in a multi-axis cascaded system. "Single" (0) - Single Unit System "Multi First" (1) - Cascaded System First Unit "Multi Mid" (2) - Cascaded System Middle Unit "Multi Last" (3) - Cascaded System Last Unit	Default: 0 = "Single" Options: 0 = "Single" 1 = "Multi First" 2 = "Multi Mid" 3 = "Multi Last"	RW	Real
		21	Safety Mode Defines the primary operating mode of the speed monitoring safety functions. "Safe Stop" (1) - Master, Safe Stop "Safe Stop DM" (2) - Master, Safe Stop with Door Monitoring "Lim Speed" (3) - Master, Safe Limited Speed "Lim Speed DM" (4) - Master, Safe Limited Speed with Door Monitoring "Lim Speed ES" (5) - Master, Safe Limited Speed with Enabling Switch Control "LimSpd DM ES" (6) - Master, Safe Limited Speed with Door Monitoring and Enabling Switch Control "Lim Spd Stat" (7) - Master, Safe Limited Speed Status Only "Slv Safe Stp" (8) - Slave, Safe Stop "Slv Lim Spd" (9) - Slave, Safe Limited Speed "Slv Spd Stat" (10) - Slave, Safe Limited Speed Status Only	Default: 1 = "Safe Stop" Options: 0 = "Disabled" 1 = "Safe Stop" 2 = "Safe Stop DM" 3 = "Lim Speed" 4 = "Lim Speed DM" 5 = "Lim Speed ES" 6 = "LimSpd DM ES" 7 = "Lim Spd Stat" 8 = "Slv Safe Stp" 9 = "Slv Lim Spd" 10 = "Slv Spd Stat"	RW	Real
		22	Reset Type Defines the type of reset used by the safety option.	Default: 2 = "Monitored" Options: 0 = "Automatic" 1 = "Manual" 2 = "Monitored" (Manual Monitored)	RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		24	OverSpd Response Configuration for the feedback interface sampling rate.	Default: 0 = "42 ms" Options: 0 = "42 ms" 1 = "48 ms" 2 = "60 ms" 3 = "84 ms" 4 = "132 ms" 5 = "228 ms" 6 = "420 ms"	RW	Real
		27	Fbk Mode Selects the number of feedback devices and the type of discrepancy checking. "Single Fbk" (0) - 1 Encoder "Dual S/P Chk" (1) - 2 Encoders with Speed and Position Discrepancy Checking "Dual Spd Chk" (2) - 2 Encoders with Speed Discrepancy Checking "Dual Pos Chk" (3) - 2 Encoders with Position Discrepancy Checking	Default: 0 = "Single Fbk" Options: 0 = "Single Fbk" 1 = "Dual S/P Chk" 2 = "Dual Spd Chk" 3 = "Dual Pos Chk"	RW	Real
		28	Fbk 1 Type Selects the type of feedback for safety option 1.	Default: 1 = "TTL" Options: 0 = "Sine/Cosine" 1 = "TTL" (Incremental)	RW	Real
		29	Fbk 1 Units Selects rotary or linear feedback for safety option 1.	Default: 0 = "Rev" Options: 0 = "Rev" (Rotary) 1 = "mm" (Linear)	RW	Real
		30	Fbk 1 Polarity Defines the direction polarity for encoder 1.	Default: 0 = "Normal" Options: 0 = "Normal" (Same as encoder) 1 = "Reversed"	RW	Real
		31	Fbk 1 Resolution Counts/Revolution. 1...65,535 pulses/revolution or pulses/mm based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Default: 1024 Min/Max: 1 / 65,535	RO	Real
		32	Fbk 1 Volt Mon Encoder 1 voltage to be monitored.	Default: 0 = Voltage not monitored Options: 0 = Voltage not monitored 5 = 5V +/- 5% 9 = 7...12V 12 = 12V +/- 5% 24 = 24V - 10%...24V + 5%	RW	Real
		33	Fbk 1 Speed Displays the output speed of encoder 1. Units based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: RPM mm/s Min/Max: -214,748,364.8 / 214,748,364.7 RPM -214,748,364.8 / 214,748,364.7 mm/s	RO	Real
		34	Fbk 2 Units Selects rotary or linear feedback for safety option 2.	Default: 0 = "Rev" Options: 0 = "Rev" (Rotary) 1 = "mm" (Linear)	RW	Real
		35	Fbk 2 Polarity Defines the direction polarity for encoder 2.	Default: 0 = "Normal" Options: 0 = "Normal" (Same as encoder) 1 = "Reversed"	RW	Real
		36	Fbk 2 Resolution Counts/Revolution. 0...65,535 pulses/revolution or pulses/mm based on rotary or linear configuration defined by P34 [Fbk 2 Units].	Default: 0 Min/Max: 1 / 65,535	RO	Real
		37	Fbk 2 Volt Mon Encoder 2 voltage to be monitored.	Default: 0 = Voltage not monitored Options: 0 = Voltage not monitored 5 = 5V +/- 5% 9 = 7...12V 12 = 12V +/- 5% 24 = 24V - 10%...24V + 5%	RW	Real
		38	Fbk 2 Speed Displays the output speed of encoder 2. Units based on rotary or linear configuration defined by P34 [Fbk 2 Units].	Units: RPM mm/s Min/Max: -214,748,364.8 / 214,748,364.7 RPM -214,748,364.8 / 214,748,364.7 mm/s	RO	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		39	Fbk Speed Ratio Defines the ratio of the expected speed of encoder 2 divided by the expected speed of encoder 1. Ratio based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Default: 0.0000 Min/Max: 0.0001 / 10,000.0	RW	Real
		40	Fbk Speed Tol Acceptable difference in speed between P33 [Fbk 1 Speed] and P38 [Fbk 2 Speed]. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: RPM mm/s Min/Max: 0 / 6553.5 RPM 0 / 6553.5 mm/s	RW	Real
		41	Fbk Pos Tol Acceptable difference in position between encoder 1 and encoder 2. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Deg mm Default: 0 Min/Max: 0 / 65,535 deg 0 / 65,535 mm	RW	Real
		42	Direction Mon Defines the allowable direction if Safe Direction Monitoring is enabled. "Pos Always" (1) – Positive always "Neg Always" (2) – Negative always "Pos in SLS" (3) – Positive during safe limited speed monitoring "Neg in SLS" (4) – Negative during safe limited speed monitoring	Default: 0 = "Disabled" Options: 0 = "Disabled" 1 = "Pos Always" 2 = "Neg Always" 3 = "Pos in SLS" 4 = "Neg in SLS"	RW	Real
		43	Direction Tol The position limit in encoder units tolerated in the wrong direction when Safe Direction Monitoring is active. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Deg mm Default: 10 Min/Max: 0 / 65,535 deg 0 / 65,535 mm	RW	Real
		44	Safe Stop Input Configuration for Safe Stop input (SS_In). "2NC" (1) – Dual-channel equivalent "2 NC 3s" (2) – Dual-channel equivalent 3 s "1 NO + 1 NC" (3) – Dual-channel complementary "1 NO + 1 NC 3s" (4) – Dual-channel complementary 3 s "2 OSSD" (5) – Dual-channel SS equivalent "1 NC" (6) – Single channel equivalent	Default: 1 = "2NC" Options: 0 = "Not used" 1 = "2NC" 2 = "2 NC 3s" 3 = "1 NO + 1 NC" 4 = "1 NO + 1 NC 3s" 5 = "2 OSSD" 6 = "1 NC" c	RW	Real
		45	Safe Stop Type Safe operating stop type selection. This defines the type of Safe Stop that is performed if the Safe Stop function is initiated by a stop type condition. "Torque Off" (0) – Safe Torque Off With Standstill Checking "Torque Off NoCk" (3) – Safe Torque Off Without Standstill Checking	Default: 0 = "Torque Off" Options: 0 = "Torque Off" 1 = "Safe Stop 1" 2 = "Safe Stop 2" 3 = "Torque Off NoCk"	RW	Real
		46	Stop Mon Delay Defines the monitoring delay between the request and the Max Stop Time when the request for a Safe Stop 1 or a Safe Stop 2 is initiated by an SS_In input ON to OFF transition. If the Safe Stop Type is Safe Torque Off With or Without Standstill Speed Checking, the Stop Monitor Delay must be 0 or a Invalid Configuration Fault occurs.	Units: Secs Default: 0 Min/Max: 0 / 6553.5	RW	Real
		47	Max Stop Time Defines the maximum stop delay time that is used when the Safe Stop function is initiated by a stop type condition.	Units: Secs Default: 0 Min/Max: 0 / 6553.5	RW	Real
		48	Standstill Speed Defines the speed limit that is used to declare motion as stopped. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: RPM mm/s Default: 0.001 Min/Max: 0.001 / 65.535 RPM 000 / 65.535 mm/s	RW	Real
		49	Standstill Pos Defines the position limit window in encoder 1 degrees or mm that will be tolerated after a safe stop condition has been detected. Degrees (360° = 1 revolution) or mm based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Deg mm Default: 10 Min/Max: 0 / 65,535 deg 0 / 65.535 mm	RW	Real

File	Group	No.	Name Description	Values		Read-Write	Data Type
HOST GROUPS		50	Decel Ref Speed Determines deceleration rate to monitor for Safe Stop 1 or Safe Stop 2. Units are based on rotary or linear configuration defined by encoder 1 feedback configuration, P29 [Fbk 1 Units].	Units: RPM mm/s Default: 0 Min/Max: 0 / 65,535 RPM 0 / 65,535 mm/s		RW	Real
		51	Stop Decel Tol This is the acceptable tolerance above the deceleration rate set by the Decel Ref Speed parameter.	Units: % Default: 0 Min/Max: 0 / 100		RW	Real
		52	Lim Speed Input Configuration for Safe Limited Speed input (SLS_In). "2NC" (1) – Dual-channel equivalent "2 NC 3s" (2) – Dual-channel equivalent 3 s "1 NO + 1 NC" (3) – Dual-channel complementary "1 NO + 1 NC 3s" (4) – Dual-channel complementary 3 s "2 OSSD" (5) – Dual-channel SS equivalent "1 NC" (6) – Single channel equivalent	Default: 0 = "Not used" Options: 0 = "Not used" 1 = "2NC" 2 = "2 NC 3s" 3 = "1 NO + 1 NC" 4 = "1 NO + 1 NC 3s" 5 = "2 OSSD" 6 = "1 NC"		RW	Real
		53	LimSpd Mon Delay Defines the Safe Limited Speed Monitoring Delay between the SLS_In ON to OFF transition and the initiation of the Safe Limited Speed (SLS) or Safe Maximum Speed (SMS) monitoring.	Units: Secs Default: 0 Min/Max: 0 / 6553.5		RW	Real
		54	Enable SW Input Configuration for the Enabling Switch input (ESM_In). "2NC" (1) – Dual-channel equivalent "2 NC 3s" (2) – Dual-channel equivalent 3 s "1 NO + 1 NC" (3) – Dual-channel complementary "1 NO + 1 NC 3s" (4) – Dual-channel complementary 3 s "2 OSSD" (5) – Dual-channel SS equivalent "1 NC" (6) – Single channel equivalent	Default: 0 = "Not used" Options: 0 = "Not used" 1 = "2NC" 2 = "2 NC 3s" 3 = "1 NO + 1 NC" 4 = "1 NO + 1 NC 3s" 5 = "2 OSSD" 6 = "1 NC"		RW	Real
		55	Safe Speed Limit Defines the speed limit that will be monitored in Safe Limited Speed (SLS) mode. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: RPM mm/s Default: 0 Min/Max: 0 / 6553.5 RPM 0 / 6553.5 mm/s		RW	Real
		56	Speed Hysteresis Provides hysteresis for SLS_Out output when Safe Limited Speed monitoring is active.	Units: % Default: 0 Min/Max: 0 / 100		RW	Real
		57	Door Out Type Defines the lock and unlock state for door control output (DC_Out). When Door Out Type equals power to release, DC_Out is OFF in the lock state and ON in the unlock state. When Door Out Type equals power to lock, DC_Out is ON in the lock state and OFF in the unlock state. The first and middle units of a multi-axis system must be configured as cascading (2).	Default: 0 = "Pwr to Rel" Options: 0 = "Pwr to Rel" 1 = "Pwr to Lock" 2 = "2 Ch Sourcing"		RW	Real
		58	DM Input Configuration for the Door Monitor input (DM_In). "2NC" (1) – Dual-channel equivalent "2 NC 3s" (2) – Dual-channel equivalent 3 s "1 NO + 1 NC" (3) – Dual-channel complementary "1 NO + 1 NC 3s" (4) – Dual-channel complementary 3 s "2 OSSD" (5) – Dual-channel SS equivalent "1 NC" (6) – Single channel equivalent	Default: 0 = "Not used" Options: 0 = "Not used" 1 = "2NC" 2 = "2 NC 3s" 3 = "1 NO + 1 NC" 4 = "1 NO + 1 NC 3s" 5 = "2 OSSD" 6 = "1 NC"		RW	Real
		59	Lock Mon Enable Lock Monitoring can only be enabled when the speed monitoring safety option is a single unit or as the first unit in a multi-axis system (Cascaded Config equals 0 or 3).	Default: 0 = "Disable" Options: 0 = "Disable" 1 = "Enable"		RW	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		60	Lock Mon Input Configuration for the Lock Monitor input (LM_In). "2NC" (1) – Dual-channel equivalent "2 NC 3s" (2) – Dual-channel equivalent 3 s "1 NO + 1 NC" (3) – Dual-channel complementary "1 NO + 1 NC 3s" (4) – Dual-channel complementary 3 s "2 OSSD" (5) – Dual-channel SS equivalent "1 NC" (6) – Single channel equivalent	Default: 0 = "Not used" Options: 0 = "Not used" 1 = "2NC" 2 = "2 NC 3s" 3 = "1 NO + 1 NC" 4 = "1 NO + 1 NC 3s" 5 = "2 OSSD" 6 = "1 NC"	RW	Real
		61	Max Speed Enable Enable Safe Maximum Speed Monitoring.	Default: 0 = "Disable" Options: 0 = "Disable" 1 = "Enable"	RW	Real
		62	Safe Max Speed Defines the maximum speed limit that will be tolerated if Safe Maximum Speed monitoring is enabled.	Units: RPM mm/s Default: 0 Min/Max: 0 / 65,535 RPM 0 / 65,535 mm/s	RW	Real
		63	Max Spd Stop Typ Defines the safe stop type that will be initiated in the event of a SMS Speed Fault. "Torque Off" (0) – Safe Torque Off With Standstill Checking "Safe Stp Typ" (1) – Safe Torque Off Without Standstill Checking	Default: 0 = "Torque Off" Options: 0 = "Torque Off" 1 = "Safe Stp Typ"	RW	Real
		64	Max Accel Enable Enable Safe Maximum Acceleration Monitoring.	Default: 0 = "Disable" Options: 0 = "Disable" 1 = "Enable"	RW	Real
		65	Safe Accel Limit Defines the Safe Maximum Acceleration Limit, relative to encoder 1, for which the system is being monitored. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Rev/s ² mm/s ² Default: 0 Min/Max: 0 / 65,535 rev/s ² 0 / 65,535 mm/s ²	RW	Real
		66	Max Acc Stop Typ Defines the safe stop type that will be initiated in the event of an Acceleration Fault. "Torque Off" (0) – Safe Torque Off With Standstill Checking "Safe Stp Typ" (1) – Safe Torque Off Without Standstill Checking	Default: 0 = "Torque Off" Options: 0 = "Torque Off" 1 = "Safe Stp Typ"	RW	Real

File	Group	No.	Name	Values	Read-Write	Data Type																													
			Description																																
HOST GROUPS	67	67	Fault Status																																
			Fault Status																																
			Bit-encoded faults.																																
			Options	Reserved	Reserved	Reserved	Fbk 2 V Flt	Fbk 1 V Flt	ESM Mon Flt	ESM In Flt	Lock Mon Flt	LM In Flt	DC Out Flt	Door Mon Flt	DM In Flt	Dir Flt	Accel Flt	SMS Spd Flt	SLS Spd Flt	SLS Out Flt	SLS In Flt	Mov in Stop	Stop Spd Flt	Decel Flt	SS Out Flt	SS In Flt	Dual Fbk Pos	Dual Fbk Spd	Fbk 2 Flt	Fbk 1 Flt	Reset PwrUp	MP Out Flt	Invalid Cfg	Core Error	Combined Flt
			Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
			Bit 0 "Combined Flt" – Combined Fault Status																																
			Bit 1 "Core Error" – Reserved for Core Error																																
			Bit 2 "Invalid Cfg" – Invalid Configuration Fault																																
			Bit 3 "MP Out Flt" – MP Out Fault																																
			Bit 4 "Reset PwrUp" – Reset On at PwrUp Fault																																
			Bit 5 "Fbk 1 Flt" – Feedback 1 Fault																																
			Bit 6 "Fbk 2 Flt" – Feedback 2 Fault																																
			Bit 7 "Dual Fbk Spd" – Dual FB Speed Fault																																
			Bit 8 "Dual Fbk Pos" – Dual FB Position Fault																																
			Bit 9 "SS In Flt" – SS_In Fault																																
			Bit 10 "SS Out Flt" – SS_Out Fault																																
			Bit 11 "Decel Flt" – Deceleration Fault																																
			Bit 12 "Stop Spd Flt" – Stop Speed Fault																																
			Bit 13 "Mov in Stop" – Motion After Stopped Fault																																
			Bit 14 "SLS In Flt" – SLS_In Fault																																
			Bit 15 "SLS Out Flt" – SLS_Out Fault																																
			Bit 16 "SLS Spd Flt" – SLS_Speed Fault																																
			Bit 17 "SMS Spd Flt" – SMS_Speed Fault																																
			Bit 18 "Accel Flt" – Acceleration Fault																																
			Bit 19 "Dir Flt" – Direction Fault																																
			Bit 20 "DM In Flt" – DM_In Fault																																
			Bit 21 "Door Mon Flt" – Door Monitoring Fault																																
Bit 22 "DC Out Flt" – DC_Out Fault																																			
Bit 23 "LM In Flt" – LM_In Fault																																			
Bit 24 "Lock Mon Flt" – Lock Monitoring Fault																																			
Bit 25 "ESM In Flt" – ESM_In Fault																																			
Bit 26 "ESM Mon Flt" – ESM Monitoring Fault																																			
Bit 27 "Fbk 1 V Flt" – Encoder 1 Voltage Fault																																			
Bit 28. "Fbk 2 V Flt" – Encoder 2 Voltage Fault																																			

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		68	Guard Status Guard Status			
			Options	Reserved Reserved Reserved Reserved Reserved Wait No Stop Wait SS Cyc Wait Reset Reset In ESM In Prog ESM In LM In DM In Prog DM In DC Out DC Lock SDM In Prog SMA In Prog SMS In Prog SLS Out SLS In Prog SLS Req SLS In SS Out SS Stopped SS Decel SS In Prog SS Req SS In MP Out Config Lock StatusOK		
			Default	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
			Bit	31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0		
			Bit 0 "StatusOK" – 0 = Fault; 1 = OK			
			Bit 1 'Config Lock" – Configuration_Lock: 0 = Unlock; 1 = Lock			
			Bit 2 "MP Out" – MP_Out_Value: 0 = Off; 1 = On			
			Bit 3 "SS In" – SS_In_Value: 0 = Off; 1 = On			
			Bit 4 "SS Req" – SS_Request_Status: 0 = Inactive; 1 = Active			
			Bit 5 "SS In Prog" – SS_In_Progress: 0 = Inactive; 1 = Active			
			Bit 6 "SS Decel" – SS_Decelerating_Status: 0 = Inactive; 1 = Active			
			Bit 7 "SS Stopped" – SS_Axis_Stopped_Status: 0 = Inactive; 1 = Active			
			Bit 8 "SS Out" – SS_Output_Value: 0 = Off; 1 = On			
			Bit 9 "SLS In" – SLS_In_Value: 0 = Off; 1 = On			
			Bit 10 "SLS Req" – SLS_Request_Status: 0 = Inactive; 1 = Active			
			Bit 11 "SLS In Prog" – SLS_In_Progress: 0 = Inactive; 1 = Active			
			Bit 12 "SLS Out" – SLS_Output_Value: 0 = Off; 1 = On			
			Bit 13 "SMS In Prog" – SMS_In_Progress: 0 = Inactive; 1 = Active			
			Bit 14 "SMA In Prog" – SMA_In_Progress: 0 = Inactive; 1 = Active			
			Bit 15 "SDM In Prog" – SDM_In_Progress: 0 = Inactive; 1 = Active			
			Bit 16 "DC Lock" – DC_Lock_Status: 0 = Lock; 1 = Unlock			
			Bit 17 "DC Out" – DC_Out_Value: 0 = Off; 1 = On			
			Bit 18 "DM In" – DM_In_Value: 0 = Off; 1 = On			
			Bit 19 "DM In Prog" – DM_In_Progress: 0 = Inactive; 1 = Active			
			Bit 20 "LM In" – LM_In_Value: 0 = Off; 1 = On			
			Bit 21 "ESM In" – ESM_In_Value: 0 = Off; 1 = On			
			Bit 22 "ESM In Prog" – ESM_In_Progress: 0 = Inactive; 1 = Active			
			Bit 23 "Reset In" – Reset_In_Value: 0 = Off; 1 = On			
			Bit 24 "Wait Reset" – Waiting_for_SS_Reset: 0 = Inactive; 1 = Active			
			Bit 25 "Wait SS Cyc" – Waiting_for_Cycle_SS_In: 0 = Inactive; 1 = Active			
			Bit 26 "Wait No Stop" – Waiting_for_Stop_Request_Removal: 0 = Inactive; 1 = Active			

File

Group

No.

Name
Description

Values

Read-Write

Data Type

HOST GROUPS

69

IO Diag Status

Indicates present state of I/O used for diagnostics.

Important: When the safety option is not in the Run mode, this parameter is not updated.

Options

Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	MP Out Ch 1	MP Out Ch 0	Stop Cmd	SLS Cmd	Reserved	Reset In	LM In Ch 1	LM In Ch 0	DC Out Ch 1	DC Out Ch 0	DM In Ch 1	DM In Ch 0	ESM In Ch 1	ESM In Ch 0	SLS Out Ch 1	SLS Out Ch 0	SLS In Ch 1	SLS In Ch 0	SS Out Ch 1	SS Out Ch 0	SS In Ch 1	SS In Ch 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	

0 = Open
1 = Closed

Bit 0 "SS In Ch 0" – SS_in_ch_0 status

Bit 1 "SS In Ch 1" – SS_in_ch_1 status

Bit 2 "SS Out Ch 0" – SS_out_ch_0 status

Bit 3 "SS Out Ch 1" – SS_out_ch_1 status

Bit 4 "SLS In Ch 0" – SLS_in_ch_0 status

Bit 5 "SLS In Ch 1" – SLS_in_ch_1 status

Bit 6 "SLS Out Ch 0" – SLS_out_ch_0 status

Bit 7 "SLS Out Ch 1" – SLS_out_ch_1 status

Bit 8 "ESM In Ch 0" – ESM_in_ch_0 status

Bit 9 "ESM In Ch 1" – ESM_in_ch_1 status

Bit 10 "DM In Ch 0" – DM_in_ch_0 status

Bit 11 "DM In Ch 1" – DM_in_ch_1 status

Bit 12 "DC Out Ch 0" – DC_out_ch_0 status

Bit 13 "DC Out Ch 1" – DC_out_ch_1 status

Bit 14 "LM In Ch 0" – LM_in_ch_0 status

Bit 15 "LM In Ch 1" – LM_in_ch_1 status

Bit 16 "Reset In" – Reset_In status

Bit 17 "Reserved"

Bit 18 "SLS Cmd" – SLS_command status

Bit 19 "Stop Cmd" – Stop_command status

Bit 20 "MP Out Ch 0" – MP_Out_Ch_0 status

Bit 21 "MP Out Ch 1" – MP_Out_Ch_1 status

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		70	Config Flt Code Configuration Fault Code. 0 = No Fault 1 = Password Required (Password Req) 2 = P21 [Safety Mode] value not legal based on P20 [Cascaded Config] value. 3 = P57 [Door Out Type] value not legal based on P20 [Cascaded Config] value. 4 = P46 [Stop Mon Delay] value not legal based on P45 [Safe Stop Type] value. 5 = P50 [Decel Ref Speed] value not legal based on P31 [Fbk 1 Resolution] value. 6 = P48 [Standstill Speed] value not legal based on P20 [Cascaded Config] value. 7 = P53 [LimSpd Mon Delay] value not legal based on P21 [Safety Mode] value. 8 = P55 [Safe Speed Limit] value not legal based on P21 [Safety Mode] and P31 [Fbk 1 Resolution] value. 9 = P56 [Speed Hysteresis] value not legal based on P21 [Safety Mode] value. 10 = P62 [Safe Max Speed] value not legal based on P31 [Fbk 1 Resolution] value. 11 = P42 [Direction Mon] value not legal based on P21 [Safety Mode] value. 12 = P59 [Lock Mon Enable] value not legal based on P21 [Safety Mode] value. 13 = P36 [Fbk 2 Resolution] value not legal based on P27 [Fbk Mode] value. 14 = P35 [Fbk 2 Polarity] value not legal based on P27 [Fbk Mode] value. 15 = P39 [Fbk Speed Ratio] value not legal based on P27 [Fbk Mode] value. 16 = P41 [Fbk Pos Tol] value not legal based on P27 [Fbk Mode] value. 17 = P40 [Fbk Speed Tol] value not legal based on P27 [Fbk Mode] value. 18 = P44 [Safe Stop In Typ] value not legal based on P21 [Safety Mode] value. 19 = P52 [Lim Spd In Typ] value not legal based on P21 [Safety Mode] value. 20 = P58 [DM Input Type] value not legal based on P20 [Cascaded Config] and P21 [Safety Mode] value. 21 = P54 [Enable SW In Typ] value not legal based on P21 [Safety Mode] value. 22 = P60 [Lock Mon In Type] value not legal based on P21 [Safety Mode] value and P59 [Lock Mon Enable] value. 23 = Illegal P20 [Cascaded Config] value. 24 = Illegal P22 [Reset Type] value. 25 = Reserved 26 = Illegal P45 [Safe Stop Type] value. 27 = Illegal P51 [Stop Decel Tol] value. 28 = Illegal P27 [Fbk Mode] value. 29 = Illegal P28 [Fbk 1 Type] value. 30 = Illegal P31 [Fbk 1 Resolution] value. 31 = Illegal P32 [Fbk1 Volt Mon] value. 32 = Illegal P37 [Fbk 2 Volt Mon] value. 33 = Illegal P24 [OverSpd Response] value. 34 = Reserved 36 = Unknown error (Unknown Err).	Default: Options:		RW Real
		72	SS Out Mode Defines whether the SS_Out output is pulse-tested. If pulse-testing is turned off for any output, the SIL, Category, and PL rating is reduced for the entire PowerFlex safety system.	Default: 0 = "Pulse test" Options: 0 = "Pulse test" 1 = "No pulse test"	RW	Real
		73	SLS Out Mode Defines whether the SLS_Out output is pulse-tested. If pulse-testing is turned off for any output, the SIL, Category, and PL rating is reduced for the entire PowerFlex safety system.	Default: 0 = "Pulse test" Options: 0 = "Pulse test" 1 = "No pulse test"	RW	Real
		74	Door Out Mode Defines whether the DC_Out output is pulse-tested. If pulse-testing is turned off for any output, the SIL, Category, and PL rating is reduced for the entire PowerFlex safety system.	Default: 0 = "Pulse test" Options: 0 = "Pulse test" 1 = "No pulse test"	RW	Real

Dual Incremental Encoder Module Parameters

HOST GROUPS

File	Group	No.	Name Description	Values		Read-Write	Data Type																																																			
	Encoder 0	1	Encoder 0 Cfg  Encoder 0 Configure Configures the position direction, speed calculation method, signal type and active encoder channels used for Encoder 0 (primary encoder). Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Direction</td><td>Single Ended</td><td>Reserved</td><td>Edge Mode</td><td>A Chan Only</td><td>Z Chan Enbl</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Z Channel Enbl" – Configures the Channel Z to be used and monitored for Phase Loss. A value of 0 = the Z channel will be ignored. Bit 1 "A Chan Only" – Configures the module to use only the A channel, and ignore the B channel. In this mode, direction cannot be determined, and the position counter will always count up. Bit 2 "Edge Mode" – Configure the module to use AB edge time data for speed calculation rather than accumulated count. Bit 4 "Single Ended" – Configure when the A Quad B encoder has single ended signals. In this mode, Phase Loss detection is disabled. 0 = Differential, 1 = Single Ended Bit 5 "Direction" – Inverts the position count up/down associated with a given rotation direction internally. 1 = invert, 0 = do not invert		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Direction	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Direction	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl																																								
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
		2	Encoder 0 PPR  Encoder 0 Pulses Per Revolution Configures the encoder module's primary input (Encoder 0) for the Pulses Per Revolution (Encoder Lines) of the A Quad B Encoder.	Default: 1024 Min/Max: 2 / 20000		RW	Real																																																			
3	Enc0 FdbkLss Cfg  Encoder 0 Feedback Loss Configure Configures how the drive reacts to an error status condition for Encoder 0 (primary encoder).	Default: 3 = "FitCoastStop" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Fit Minor" 3 = "FitCoastStop"		RW	Real																																																					
4	Encoder 0 Feedback  Encoder 0 Feedback Displays the position feedback value of Encoder 0 (primary encoder). This should be used as a source for the main control (port 0) Feedback Select.	Default: 0 Min/Max: -/+2147483647		RO	Real																																																					

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
HOST GROUPS	Encoder 0	5	Encoder 0 Status  Encoder 0 Status Status information for Encoder 0. Options <table><tr><th></th><th>Direction</th><th>HomMrk Event</th><th>HomMrk Armed</th><th>HomElm Event</th><th>HomElm Armed</th><th>Home Input</th><th>Inv Home In</th><th>Marker Event</th><th>Z Not Input</th><th>Z Input</th><th>B Not Input</th><th>B Input</th><th>A Not Input</th><th>A Input</th><th>A Chan Only</th><th>Z Chan Enbl</th></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Z Chan Enbl" – State of the corresponding bit in the [Encoder 0 Cfg] parameter. Bit 1 "A Chan Only" – State of the corresponding bit in the [Encoder 0 Cfg] parameter. Bit 2 "A Input" – State of encoder A input signal. Bit 3 "A Not Input" – State of encoder A Not input signal. Bit 4 "B Input" – State of encoder B input signal. Bit 5 "B Not Input" – State of encoder B Not input signal. Bit 6 "Z Input" – State of encoder Z input signal. Bit 7 "Z Not Input" – State of encoder Z Not input signal. Bit 8 "Marker Event" – When channel Z (marker pulse) is used, indicates that a marker pulse is detected. Automatically cleared in the homing routine or due to clearing of encoder faults. Bit 9 "Inv Home In" – State of the corresponding bit in the [Encoder 0 Cfg] parameter. When set, the home input signal will be inverted. Bit 10 "Home Input" – Active state of the Home Input signal. This status bit gets inverted if the "Inv Home In" bit is enabled. Bit 11 "HomElm Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next transition of the home input. Bit 12 "HomElm Event" – Indicates that the homing logic has latched the encoder position in response to a transition of the home input. Bit 13 "HomMrk Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next marker (Z channel) pulse. Bit 14 "HomMrk Event" – Indicates that the homing logic has latched the encoder position in response to a marker (Z channel) pulse. Bit 15 "Direction" – State of the corresponding bit in the [Encoder 0 Cfg] parameter.		Direction	HomMrk Event	HomMrk Armed	HomElm Event	HomElm Armed	Home Input	Inv Home In	Marker Event	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
			Direction	HomMrk Event	HomMrk Armed	HomElm Event	HomElm Armed	Home Input	Inv Home In	Marker Event	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																								
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		6	Enc0 Error Sts  Encoder 0 Error Status Status information that will result in a feedback loss condition for Encoder 0. Options <table><tr><th></th><th>SI Comm Loss</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Quad Loss</th><th>Phase Loss</th><th>Open Wire</th></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Open Wire" – Indicates that an input signal (A, B or Z) is in the same state as its complement (A Not, B Not, Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled. Bit 1 "Phase Loss" – Indicates that more than 30 phase loss (open wire) events have occurred over an 8msec time period. The same restrictions apply as on [Encoder 0 Cfg] bit 0. Bit 2 "Quad Loss" – Quadrature loss events occur when simultaneous edge transitions occur on both the A and B encoder channels. Indicates that more than 10 quad loss events over a 10 msec time period are detected. Only valid when both A and B channels are used (not 'A Chan Only' in [Encoder 0 Cfg]). Bit 15 "SI Comm Loss" – Indicates a communication loss between the main control board and the encoder module over the Serial Interface backplane.		SI Comm Loss	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Quad Loss	Phase Loss	Open Wire	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			SI Comm Loss	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Quad Loss	Phase Loss	Open Wire																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		7	Enc0 PhsLss Cnt  Encoder 0 Phase Loss Count Displays the active value of the encoder module's Encoder 0 phase loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Phase Loss errors.	Default: 0 Min/Max: 0 / 127	RO	Real																																																			
		8	Enc0 QuadLss Cnt  Encoder 0 Quad Loss Count Displays the active value of the encoder module's Encoder 0 quad loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Quad Loss errors.	Default: 0 Min/Max: 0 / 15	RO	Real																																																			

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
HOST GROUPS	Encoder 1	11	Encoder 1 Cfg  Encoder 1 Configure Configures the position direction, speed calculation method, signal type and active encoder channels used for Encoder 1 (secondary encoder). Options <table><tr><th></th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Direction</th><th>Single Ended</th><th>Reserved</th><th>Edge Mode</th><th>A Chan Only</th><th>Z Chan Enbl</th></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Z Channel Enbl" – Configures the Channel Z to be used and monitored for Phase Loss. A value of 0 = the Z channel will be ignored. Bit 1 "A Chan Only" – Configures the module to use only the A channel, and ignore the B channel. In this mode, direction cannot be determined, and the position counter will always count up. Bit 2 "Edge Mode" – Configure the module to use AB edge time data for speed calculation rather than accumulated count. Bit 4 "Single Ended" – Configure when the A Quad B encoder has single ended signals. In this mode, Phase Loss detection is disabled. 0 = Differential, 1 = Single Ended Bit 5 "Direction" – Inverts the position count up/down associated with a given rotation direction internally. 1 = invert, 0 = do not invert		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Direction	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Direction	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		12	Encoder 1 PPR  Encoder 1 Pulses Per Revolution Configures the encoder module's secondary input (Encoder 1) for the Pulses Per Revolution (Encoder Lines) of the A Quad B Encoder.	Default: 1024 Min/Max: 2 / 20000	RW	Real																																																			
13	Enc1 FdbkLss Cfg  Encoder 1 Feedback Loss Configures how the drive reacts to an error status condition for Encoder 1 (secondary encoder).	Default: 3 = "FitCoastStop" Min/Max: 0 = "Ignore" 1 = "Alarm" 2 = "Fit Minor" 3 = "FitCoastStop"	RW	Real																																																					
14	Encoder 1 Feedback  Encoder 1 Feedback Displays the position feedback value of Encoder 1 (secondary encoder). This should be used as a source for the main control (port 0) Feedback Select.	Default: 0 Min/Max: -/+2147483647	RO	Real																																																					

HOST GROUPS

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
	Encoder 1	15	Encoder 1 Status  Encoder 1 Status Status information for Encoder 1																																																						
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			Direction	HomMrk Event	HomMrk Armed	HomIn Event	HomIn Armed	Home Input	Inv Home In	Marker Event	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
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	Bit 0 "Z Chan Enbl" – State of the corresponding bit in the [Encoder 1 Cfg] parameter. Bit 1 "A Chan Only" – State of the corresponding bit in the [Encoder 1 Cfg] parameter. Bit 2 "A Input" – State of encoder A input signal. Bit 3 "A Not Input" – State of encoder A Not input signal. Bit 4 "B Input" – State of encoder B input signal. Bit 5 "B Not Input" – State of encoder B Not input signal. Bit 6 "Z Input" – State of encoder Z input signal. Bit 7 "Z Not Input" – State of encoder Z Not input signal. Bit 8 "Marker Event" – When channel Z (marker pulse) is used, indicates that a marker pulse is detected. Automatically cleared in the homing routine or due to clearing of encoder faults. Bit 9 "Inv Home In" – State of the corresponding bit in the [Encoder 1 Cfg] parameter. When set, the home input signal will be inverted. Bit 10 "Home Input" – Active state of the Home Input signal. This status bit gets inverted if the "Inv Home In" bit is enabled. Bit 11 "HomIn Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next transition of the home input. Bit 12 "HomIn Event" – Indicates that the homing logic has latched the encoder position in response to a transition of the home input. Bit 13 "HomMrk Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next marker (Z channel) pulse. Bit 14 "HomMrk Event" – Indicates that the homing logic has latched the encoder position in response to a marker (Z channel) pulse. Bit 15 "Direction" – State of the corresponding bit in the [Encoder 1 Cfg] parameter.																																																								
16	Enc1 Error Sts  Encoder 1 Error Status Status information that will result in a feedback loss condition for Encoder 1.																																																								
			Options <table><tr><th></th><th>SI Comm Loss</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Quad Loss</th><th>Phase Loss</th><th>Open Wire</th></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True		SI Comm Loss	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Quad Loss	Phase Loss	Open Wire	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
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Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
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			Bit 0 "Open Wire" – Indicates that an input signal (A, B or Z) is in the same state as its complement (A Not, B Not, Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled. Bit 1 "Phase Loss" – Indicates that more than 30 phase loss (open wire) events have occurred over an 8msec time period. The same restrictions apply as on [Encoder 1 Cfg] bit 0. Bit 2 "Quad Loss" – Quadrature loss events occur when simultaneous edge transitions occur on both the A and B encoder channels. Indicates that more than 10 quad loss events over a 10 msec time period are detected. Only valid when both A and B channels are used (not 'A Chan Only' in [Encoder 1 Cfg]). Bit 15 "SI Comm Loss" – Indicates a communication loss between the main control board and the encoder module over the Serial Interface backplane.																																																						
		17	Enc1 PhsLss Cnt  Encoder 1 Phase Loss Count Displays the active value of the encoder module's Encoder 1 phase loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Phase Loss errors.	Default: 0 Min/Max: 0 / 127	RO	Real																																																			
		18	Enc1 QuadLss Cnt  Encoder 1 Quad Loss Count Displays the active value of the encoder module's Encoder 1 quad loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Quad Loss errors.	Default: 0 Min/Max: 0 / 15	RO	Real																																																			

Universal Feedback Module Parameters

File	Group	No.	Name Description	Values		Read-Write	Data Type																																																																																																	
HOST GROUPS	Module	1	Module Sts Module Status Shows error and alarm information of the Feedback Option Board. Options <table><thead><tr><th></th><th>DPI Ready</th><th>Sec Safety</th><th>Pri Safety</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Initializing</th><th>FB0FB1 Cflct</th><th>Reserved</th><th>Reserved</th><th>Safety Cflct</th><th>EncOut Cflct</th><th>Reserved</th><th>Reserved</th><th>Firmware Err</th><th>Hardware Err</th><th>Reserved</th><th>Cfg Alarm</th><th>FB1 Alarm</th><th>FB0 Alarm</th><th>Reserved</th><th>System Error</th><th>FB1 Error</th><th>FB0 Error</th><th>Reserved</th><th>Alarm Type 2</th><th>Alarm Type 1</th><th>Module Error</th></tr></thead><tbody><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></tbody></table> 0 = False 1 = True Bit 0 "Module Error" – Indicates that the Feedback Option Board has any error. This bit is set if at least one of the bits "FB0 Error", "FB1 Error", or "System Error" is set. Bit 1 "Alarm Type 1" – Indicates that there is any alarm of type 1 active on the Feedback Option Board. Bits 8...10 indicate what kind of alarm is active. Bit 2 "Alarm Type 2" – Indicates that there is any alarm of type 2 active on the Feedback Option Board. Bits 20 and 21 indicate what kind of alarm is active. Bit 4 "FB0 Error" – Indicates that Feedback 0 has an error. This bit is set if any Feedback 0 error bit in P10 [FB0 Sts] is set. If this bit is set, the bit "Module Error" is also set. Bit 5 "FB1 Error" – Indicates that Feedback 1 has an error. This bit is set if any Feedback 1 error bit in P10 [FB1 Sts] is set. If this bit is set, the bit "Module Error" is also set. Bit 6 "System Error" – Indicates that there is a feedback independent error on the Feedback Option Board. Bits 12 and 13 show the type of the System Error. If this bit is set, the bit "Module Error" is also set. Bit 8 "FB0 Alarm" – Indicates that Feedback 0 has an alarm This bit is set if there is an alarm in the Feedback 0 encoder. If this bit is set, the bit "Alarm Type 1" is also set. Bit 9 "FB1 Alarm" – Indicates that Feedback 1 has an alarm This bit is set if there is an alarm in the Feedback 1 encoder. If this bit is set, the bit "Alarm Type 1" is also set. Bit 10 "Cfg Alarm" – Indicates that there is a feedback independent alarm on the Feedback Option Board. Bits 16 and 17 show the type of the Cfg Alarm. If this bit is set, Bit 1 "Alarm Type 1" is also set. Bit 12 "Hardware Err" – Indicates that there is a Hardware Error on the Feedback Option Board. If this bit is set, Bit 6 "System Error" is also set. Bit 13 "Firmware Err" – Indicates that there is a Firmware Error on the Feedback Option Board. A Firmware Error occurs if the Hardware and the downloaded Firmware are not compatible. If this bit is set, Bit 6 "System Error" is also set. Bit 16 "EncOut Cflct" – If set, there is one of the following problems with the Encoder Output: - The selection in P80 [Enc Out Sel] is not possible since the required pins on the terminal blocks are already used for Feedback 0 or 1 according to P6 [FB0 Device Sel] and P36 [FB1 Device Sel]. - P80 [Enc Out Sel] is set to "Sine Cosine" and there is no signal connected to the pins 1-4 of the Terminal Block 1. - P80 [Enc Out Sel] is set to "Sine Cosine", the value of [FBX IncAndSC PPR] is not a power of two, and the parameter P84 [Enc Out Z PPR] is not set to 0 "1 ZPulse". This is not allowed. - P80 [Enc Out Sel] is set to "Channel X" or "Channel Y" and there is no encoder connected to that channel. - P80 [Enc Out Sel] is set to "Channel X" or "Channel Y" and there is a linear encoder connected to this channel. If this bit is set, the bit "Board Alarm" is also set. Bit 17 "Safety Cflct" – If set, the Safety DIP switches are in an invalid position. If this bit is set, Bit 10 "Cfg Alarm" is also set. Bit 20 "FB0FB1 Cflct" – If set, the combination of the feedback selection done with the parameters P6 [FB0 Device Sel] and P36 [FB1 Device Sel] is invalid, i.e. both feedbacks have Sin-Cos-Signals (There is only place for one set of Sin-Cos-Signals on the Terminal Blocks). If this bit is set, Bit 2 "Alarm Type 2" is also set. Bit 21 "Initializing" – Indicates that the Universal Feedback State Machine is in the Initialize State. This Type 2 alarm makes sure that the motor cannot be started during this. If this bit is set, the bit "Alarm Type 2" is also set. Bit 29 "Pri Safety" – Indicates that the UFB is used as primary safety board. Bit 30 "Sec Safety" – Indicates that the UFB is used as secondary safety board. Bit 31 "DPI Ready" – This bit tells the MCB if the UFB is ready for DPI communication.		DPI Ready	Sec Safety	Pri Safety	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Initializing	FB0FB1 Cflct	Reserved	Reserved	Safety Cflct	EncOut Cflct	Reserved	Reserved	Firmware Err	Hardware Err	Reserved	Cfg Alarm	FB1 Alarm	FB0 Alarm	Reserved	System Error	FB1 Error	FB0 Error	Reserved	Alarm Type 2	Alarm Type 1	Module Error	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			DPI Ready	Sec Safety	Pri Safety	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Initializing	FB0FB1 Cflct	Reserved	Reserved	Safety Cflct	EncOut Cflct	Reserved	Reserved	Firmware Err	Hardware Err	Reserved	Cfg Alarm	FB1 Alarm	FB0 Alarm	Reserved	System Error	FB1 Error	FB0 Error	Reserved	Alarm Type 2	Alarm Type 1	Module Error																																																																						
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																									
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																								
2	Module Err Reset Module Error Reset Selects the module reset type.	Default: 0 = "Ready" Options: 0 = "Ready" 1 = "Clr FB Initlz" 2 = "Clear Errors" 3 = "FB Initlz"	RW	32-bit Integer																																																																																																				

File	Group	No.	Name Description	Values		Read-Write	Data Type																																															
HOST GROUPS	Feedback 0	5	FB0 Position  Feedback 0 Position Displays the position value from the position feedback 0.	Default: 0 Min/Max: 2147483648 / 2147483647		RO	32-bit Integer																																															
		6	FB0 Device Sel  Feedback 0 Device Select Specifies the encoder type for the feedback 0.	Default: 0 = "None" Options: 0 = "None" 1 = "EnDat SC" 2 = "Hiperface SC" 3 = "BiSS SC" 4 = "SSI SC" 5 = "EnDat FD ChX" 6 = "EnDat FD ChY" 7 = "BiSS FD ChX" 8 = "BiSS FD ChY" 9 = "Reserved" 10 = "Reserved" 11 = "SinCos Only" 12 = "Inc A B Z" 13 = "Inc SC" 14 = "LinTempo ChX" 15 = "LinTempo ChY" 16 = "LinStahl ChX" 17 = "LinStahl ChY" 18 = "LinSSI ChX" 19 = "LinSSI ChY"		RW	Real																																															
		7	FB0 Identify  Feedback 0 Identify Displays the used encoder type for feedback 0, e.g. Multi turn, rotary encoder with EnDat 2.1 interface including SIN/COS incremental signals. Options <table><tr><th></th><th>Reserved</th><th>Stahl</th><th>Temposonic</th><th>SSI</th><th>BiSS</th><th>Hiperface</th><th>EnDat 2p2</th><th>EnDat 2p1</th><th>Incremental</th><th>Full Digital</th><th>Sin Cos</th><th>Enh Resol</th><th>Multi Turn</th><th>Single Turn</th><th>Linear</th><th>Rotary</th></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Rotary" – Rotary encoder Bit 1 "Linear" – Linear encoder; e.g. Temposonic and Stahl Bit 2 "Single Turn" – Single turn absolute encoder Bit 3 "Multi Turn" – Multiturn absolute encoder Bit 4 "Enh Resol" – High resolution encoder. This bit is set if there are more than 24 bits resolution (full digital encoders) or the PPR is greater than or equal to 16384. Only if this bit is set it makes sense to set Bit 1 "24-bit Resol" in P8 [FB0 Cfg]. Bit 5 "Sin Cos" – SinCos encoder Bit 6 "Full Digital" – Full digital encoder Bit 7 "Incremental" – A Quad B encoder Bit 8 "EnDat 2p1" – Heidenhain EnDat 2.1 command set Bit 9 "EnDat 2p2" – Heidenhain EnDat 2.2 command set Bit 10 "Hiperface" – Hiperface Interface Bit 11 "BiSS" – BiSS interface Bit 12 "SSI" – SSI interface Bit 13 "Temposonic" – Temposonic linear encoder Bit 14 "Stahl" – Stahl linear encoder		Reserved	Stahl	Temposonic	SSI	BiSS	Hiperface	EnDat 2p2	EnDat 2p1	Incremental	Full Digital	Sin Cos	Enh Resol	Multi Turn	Single Turn	Linear	Rotary	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	Reserved	Stahl	Temposonic	SSI	BiSS	Hiperface	EnDat 2p2	EnDat 2p1	Incremental	Full Digital	Sin Cos	Enh Resol	Multi Turn	Single Turn	Linear	Rotary																																						
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																						
HOST GROUPS	Feedback 0	8	FB0 Cfg  Feedback 0 Configure Configure the position direction, position data format, as well as the baud rate for the serial communication interface for feedback 0.																																																									
			Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>SC Quadrant</td><td>FD Low Baud</td><td>24-bit Resol</td><td>Direction</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td><td></td></tr></table> 0 = Condition False 1 = Condition True		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	SC Quadrant	FD Low Baud	24-bit Resol	Direction	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	SC Quadrant	FD Low Baud	24-bit Resol	Direction																																									
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																											
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																												
	Bit 0 "Direction" – Inverts the position direction internally. Bit 1 "24-bit Resol" – If set, the data format of [FBX Position] is set to 8/24 (8 bit resolution, 24 bits position within one revolution). Otherwise, the data format is set to 12/20. It only makes sense to set this bit if the bit "Enh Resol" in parameter [FB0 Identify] is set. Bit 2 "FD Low Baud" – Reduces the communication baud rate from the default setting for the connected encoder with a serial communication channel. The actual baud rate is indicated by the Diagnostic Parameter [Fdbk0 Baud Rate]. Bit 3 "SC Quadrant" – Reserved for future use.																																																											
		9	FB0 Loss Cfg Feedback 0 Loss Configure Configures how the drive reacts to an error status condition on the feedback 0.	Default: 3 = "FitCoastStop" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FitCoastStop"	RW	32-bit Integer																																																						
		10	FB0 Sts  Feedback 0 Status Shows feedback specific errors and alarms for feedback 0.																																																									
			Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Encoder Alm</td><td>Reserved</td><td>Unsupp Enc</td><td>Phase Loss</td><td>Quad Loss</td><td>Open Wire</td><td>SC Amplitude</td><td>SpplVltRng</td><td>Diagnostic</td><td>Comm</td><td>Timeout</td><td>Msg Checksum</td><td>Encoder Err</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True		Reserved	Reserved	Reserved	Encoder Alm	Reserved	Unsupp Enc	Phase Loss	Quad Loss	Open Wire	SC Amplitude	SpplVltRng	Diagnostic	Comm	Timeout	Msg Checksum	Encoder Err	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0						
	Reserved	Reserved	Reserved	Encoder Alm	Reserved	Unsupp Enc	Phase Loss	Quad Loss	Open Wire	SC Amplitude	SpplVltRng	Diagnostic	Comm	Timeout	Msg Checksum	Encoder Err																																												
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																												
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																												
			Bit 0 "Encoder Err" – When asserted, there is an Encoder Error. See [Fdbk0 EnDat Sts], [Hiperface Status], [Fdbk0 BiSS Sts], or [FB0 LinStahl Sts] for more detail. Bit 1 "Msg Checksum" – When asserted, the module has experienced a checksum error while attempting to communicate to an encoder via the serial communication channel. Bit 2 "Timeout" – When asserted, the module has experienced a time out condition while attempting to communicate to the encoder via the serial communication channel. Bit 3 "Comm" – When asserted, there was an error (except Checksum and Time Out) while attempting to communicate to an encoder via the serial communication channel. Bit 4 "Diagnostic" – When asserted, the module has experienced a diagnostic test failure on power up. Bit 5 "SpplVltRng" – When asserted, the voltage source to the encoder is out of range. Bit 6 "SC Amplitude" – When asserted, the module detected that the encoder signal amplitude is out of tolerance. Bit 7 "Open Wire" – When asserted, the module has detected an open wire. Bit 8 "Quad Loss" – Indicates that there is a signal quadrature error. Bit 9 "Phase Loss" – Indicates that an A or B signal of an A Quad B Incremental encoder is disconnected. Bit 10 "Unsupp Enc" – Indicates that the connected encoder is not supported. If it is a BiSS encoder, the encoder has to be configured manually with the Diagnostic Parameters [BiSS ManConfig1] and [BiSS ManConfig2]. Bit 12 "Encoder Alm" – When asserted, there is an Encoder Alarm. See [Fdbk0 EnDat Sts], [Hiperface Status], [Fdbk0 BiSS Sts], or [FB0 LinStahl Sts] for more detail.																																																									

File	Group	No.	Name Description	Values		Read-Write	Data Type																																																		
HOST GROUPS	Feedback 0	15	FB0 IncAndSC PPR  Feedback 0 Incremental and Sine Cosine Pulses Per Revolution Indicates the Pulses Per Revolution (Encoder Lines) of the SinCos or A Quad B encoder for feedback 0. For the following selections, PPR is automatically read from the encoder: • EnDat SC • BiSS SC (not manually configured) • Hiperface SC For the following selections, PPR has to be entered by the user: • BiSS SC, Manually configured • Gen SinCos • A Quad B	Units: PPR Default: 1024 Min/Max: 1 / 100000		RW	32-bit Integer																																																		
		16	FB0 Inc Cfg  Feedback 0 Incremental Configure Configures Incremental Feedback for feedback 0. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Single Ended</td><td>Reserved</td><td>Edge Mode</td><td>A Chan Only</td><td>Z Chan Enbl</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> Bit 0 "Z Chan Enbl" – When set, Channel Z is also monitored for Phase Loss. When cleared, Channel Z is ignored for Phase Loss detection. Only used if [FB0 Device Sel] = "Inc A B Z". Bit 1 "A Chan Only" – When set, logic monitors only channel A. When clear, logic monitors both A and B. Bit 2 "Edge Mode" – When set, speed calc uses AB edge data. When clear, speed calc does not use AB edge data. Bit 4 "Single Ended" – This bit has to be set if the connected A Quad B encoder has single ended signals. For these encoders, the Phase Loss detection is switched off.		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = Condition False 1 = Condition True		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									
17	FB0 Inc Sts Feedback 0 Incremental Status Displays Incremental Feedback status for feedback 0. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Z Not Input</td><td>Z Input</td><td>B Not Input</td><td>B Input</td><td>A Not Input</td><td>A Input</td><td>A Chan Only</td><td>Z Chan Enbl</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> Bit 0 "Z Chan Enbl" – Indicates that Channel Z is monitored for Phase Loss. Only used if [FB0 Device Sel] = "Inc A B Z". Bit 1 "A Chan Only" – Indicates only A channel is monitored, B channel not used. Bit 2 "A Input" – State of encoder A input signal Bit 3 "A Not Input" – State of encoder A Not input signal Bit 4 "B Input" – State of encoder B input signal Bit 5 "B Not Input" – State of encoder B Not input signal Bit 6 "Z Input" – State of encoder Z input signal Bit 7 "Z Not Input" – State of encoder Z Not input signal		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = Condition False 1 = Condition True				
	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl																																									
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									

File

Group

No.

Name
Description

Values

Read-Write

Data Type

20



FB0 SSI Cfg
Feedback 0 SSI Configure
Configures the communication to a SSI encoder for Feedback 0. Transmission format: [MSB...Position...LSB], [Error Bit]*, [Parity Bit]*.

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	DblWordQuery	Err Bit Enbl	Gray Code	Reserved	Parity Bit
Default	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Parity Bit" – If set, SSI encoder has to support a parity bit (even parity).
Bit 2 "Gray Code" – Enables the gray to binary conversion of the position.
Bit 3 "Err Bit Enbl" – If set, there is an error bit transmitted by the encoder.
Bit 4 "DblWordQuery" – If set, a Double Word Query is executed at startup which means that the same position is transmitted twice by the encoder. If the 2 positions are not identical, the "Comm" error bit in [Fdbkx Status] is set. This bit only needs to be cleared if the encoder does not support Double Word Query and it does not send zeros instead of the second position (which it actually should according to the SSI specification).

21



FB0 SSI Resol
Feedback 0 SSI Resolve
Configures the number of bits for the position within one revolution (resolution) of the SSI encoder for feedback 0.

Units:
Default: 13
Min/Max: 8 / 32

RW

32-bit Integer

22



FB0 SSI Turns
Feedback 0 SSI Turns
Configures the number of bits for the revolutions of the SSI encoder for feedback 0.

Units:
Default: 12
Min/Max: 0 / 16

RW

32-bit Integer

25



FB0 Lin CPR
Feedback 0 Linear Encoder Counts Per Revolution
Specifies the counts per motor revolution for a linear encoder for feedback 0.

Default: 0
Min/Max: 0 / 4294967295

RW

32-bit Integer

26



FB0 Lin Upd Rate
Feedback Linear Update Rate
Sets the sample rate for the linear channel for feedback 0.

Default: 2 = "1.5 ms"
Options: 0 = "0.5 ms"
1 = "1.0 ms"
2 = "1.5 ms"
3 = "2.0 ms"

RW

32-bit Integer

27



Fdbk0 LinStahl Sts
Feedback 0 Linear Stahl Status
Displays the error status of the linear Stahl encoder for feedback 0.

Options

	Reserved	No Position	Reserved	ROM Error	EPROM Error	RAM Error	Read Head 2	Read Head 1	Reserved	Reserved	Reserved	OutOfRailErr	Reserved	Reserved	OutOfRailAlm	Optics Alarm
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False e
1 = Condition True

Bit 0 "Optics Alarm" – Displays an alarm when fiber optics require cleaning.
Bit 1 "OutOfRailAlm" – Indicates that the read encoder count is at the maximum value (524'287).
Bit 4 "OutOfRailErr" – Indicates that there is no rail anymore between the read head.
Bit 8 "Read Head 1" – Indicates that the read head must be cleaned or installed correctly.
Bit 9 "Read Head 2" – Indicates that the read head must be cleaned or installed correctly.
Bit 10 "RAM Error" – Indicates a RAM error. Reading head needs to be repaired.
Bit 11 "EPROM Error" – Indicates an EPROM error. Reading head needs to be repaired.
Bit 12 "ROM Error" – Indicates a ROM error. Reading head needs to be repaired.
Bit 14 "No Position" – Indicates that no position value was available. Only happens after power on or reset.

File	Group	No.	Name Description	Values		Read-Write	Data Type																																															
HOST GROUPS	Feedback 1	35	FB1 Position  Feedback 1 Position Displays the position value from the position feedback 1.	Default: 0 Min/Max: 2147483648 / 2147483647		RO	32-bit Integer																																															
		36	FB1 Device Sel  Feedback 1 Device Select Specifies the encoder type for the feedback 1.	Default: 0 = "None" Options: 0 = "None" 1 = "EnDat SC" 2 = "Hiperface SC" 3 = "BiSS SC" 4 = "SSI SC" 5 = "EnDat FD ChX" 6 = "EnDat FD ChY" 7 = "BiSS FD ChX" 8 = "BiSS FD ChY" 9 = "Reserved" 10 = "Reserved" 11 = "SinCos Only" 12 = "Inc A B Z" 13 = "Inc SC" 14 = "LinTempo ChX" 15 = "LimTempo ChY" 16 = "LinStahl ChX" 17 = "LinStahl ChY" 18 = "LinSSI ChX" 19 = "LinSSI ChY"		RW	Real																																															
		37	FB1 Identify  Feedback 1 Identify Displays the used encoder type for feedback 1, e.g. Multi turn, rotary encoder with EnDat 2.1 interface including SIN/COS incremental signals. Options <table><tr><th></th><th>Reserved</th><th>Stahl</th><th>Temposonic</th><th>SSI</th><th>BiSS</th><th>Hiperface</th><th>EnDat 2p2</th><th>EnDat 2p1</th><th>Incremental</th><th>Full Digital</th><th>Sin Cos</th><th>Enh Resol</th><th>Multi Turn</th><th>Single Turn</th><th>Linear</th><th>Rotary</th></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Rotary" – Rotary encoder Bit 1 "Linear" – Linear encoder; e.g. Temposonic and Stahl Bit 2 "Single Turn" – Single turn absolute encoder Bit 3 "Multi Turn" – Multiturn absolute encoder Bit 4 "Enh Resol" – High resolution encoder. This bit is set if there are more than 24 bits resolution (full digital encoders) or the PPR is greater than or equal to 16384. Only if this bit is set it makes sense to set the bit "24-bit Resol" in parameter [FB0 Cfg]. Bit 5 "Sin Cos" – SinCos encoder Bit 6 "Full Digital" – Full digital encoder Bit 7 "Incremental" – A Quad B encoder Bit 8 "EnDat 2p1" – Heidenhain EnDat 2.1 command set Bit 9 "EnDat 2p2" – Heidenhain EnDat 2.2 command set Bit 10 "Hiperface" – Hiperface Interface Bit 11 "BiSS" – BiSS interface Bit 12 "SSI" – SSI interface Bit 13 "Temposonic" – Temposonic linear encoder Bit 14 "Stahl" – Stahl linear encoder		Reserved	Stahl	Temposonic	SSI	BiSS	Hiperface	EnDat 2p2	EnDat 2p1	Incremental	Full Digital	Sin Cos	Enh Resol	Multi Turn	Single Turn	Linear	Rotary	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	Reserved	Stahl	Temposonic	SSI	BiSS	Hiperface	EnDat 2p2	EnDat 2p1	Incremental	Full Digital	Sin Cos	Enh Resol	Multi Turn	Single Turn	Linear	Rotary																																						
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																						
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																						

HOST GROUPS

File

Group

No.

Name
Description

Values

Read-Write

Data Type

45


FB1 IncAndSC PPR
Feedback 0 Incremental and Sine Cosine Pulses Per Revolution
Indicates the Pulses Per Revolution (Encoder Lines) of the SinCos or A Quad B encoder for feedback 0.
For the following selections, PPR is automatically read from the encoder:

- EnDat SC
- BiSS SC (not manually configured)
- Hiperface SC

For the following selections, PPR has to be entered by the user:

- BiSS SC, Manually configured
- Gen SinCos
- A Quad B

Units: PDR
Default: 1024
Min/Max: 1 / 100000

RW

32-bit Integer

46


FB1 Inc Cfg
Feedback 1 Incremental Configure
Configures Incremental Feedback for feedback 1.

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	

0 = Condition False
1 = Condition True

Bit 0 "Z Chan Enbl" – When set, Channel Z is also monitored for Phase Loss. When cleared, Channel Z is ignored for Phase Loss detection. Only used if [FB0 Device Sel] = "Inc A B Z".
Bit 1 "A Chan Only" – When set, logic monitors only channel A. When clear, logic monitors both A and B.
Bit 2 "Edge Mode" – When set, speed calc uses AB edge data. When clear, speed calc does not use AB edge data.
Bit 4 "Single Ended" – This bit has to be set if the connected A Quad B encoder has single ended signals. For these encoders, the Phase Loss detection is switched off.

47


FB1 Inc Sts
Feedback 1 Incremental Status
Displays Incremental Feedback status for feedback 1.

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Z Chan Enbl" – Indicates that Channel Z is monitored for Phase Loss. Only used if [FB1 Device Sel] = "Inc A B Z".
Bit 1 "A Chan Only" – Indicates only A channel is monitored, B channel not used.
Bit 2 "A Input" – State of encoder A input signal
Bit 3 "A Not Input" – State of encoder A Not input signal
Bit 4 "B Input" – State of encoder B input signal
Bit 5 "B Not Input" – State of encoder B Not input signal
Bit 6 "Z Input" – State of encoder Z input signal
Bit 7 "Z Not Input" – State of encoder Z Not input signal

HOST GROUPS

Feedback 1

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																			
HOST GROUPS	Feedback 1	50	FB1 SSI Cfg Feedback 1 SSI Configure Configures the communication to a SSI encoder for Feedback 1. Transmission format: [MSB...Position...LSB], [Error Bit]*, [Parity Bit]*. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>DblWordQuery</td><td>Err Bit Enbl</td><td>Gray Code</td><td>Reserved</td><td>Parity Bit</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False 1 = Condition True Bit 0 "Parity Bit" – If set, SSI encoder has to support a parity bit (even parity). Bit 2 "Gray Code" – Enables the gray to binary conversion of the position. Bit 3 "Err Bit Enbl" – If set, there is an error bit transmitted by the encoder. Bit 4 "DblWordQuery" – If set, a Double Word Query is executed at startup which means that the same position is transmitted twice by the encoder. If the 2 positions are not identical, the "Comm" error bit in [Fdbkx Status] is set. This bit only needs to be cleared if the encoder does not support Double Word Query and it does not send zeros instead of the second position (which it actually should according to the SSI specification).		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	DblWordQuery	Err Bit Enbl	Gray Code	Reserved	Parity Bit	Default	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	DblWordQuery	Err Bit Enbl	Gray Code	Reserved	Parity Bit																																							
		Default	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0																																							
		Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
		51	FB1 SSI Resol Feedback 1 SSI Resolve Configures the number of bits for the position within one revolution (resolution) of the SSI encoder for feedback 1.	Units: Bits Default: 13 Min/Max: 8 / 32	RW	32-bit Integer																																																			
		52	FB1 SSI Turns Feedback 1 SSI Turns Configures the number of bits for the revolutions of the SSI encoder for feedback 1.	Units: Bits Default: 12 Min/Max: 0 / 16	RW	32-bit Integer																																																			
		55	FB1 Lin CPR Feedback 1 Linear Encoder Counts Per Revolution Specifies the counts per motor revolution for a linear encoder for feedback 1.	Default: 0 Min/Max: 0 / 4294967295	RW	32-bit Integer																																																			
		56	FB1 Lin Upd Rate Feedback Linear Update Rate Sets the sample rate for the linear channel for feedback 1.	Default: 2 = "1.5 ms" Options: 0 = "0.5 ms" 1 = "1.0 ms" 2 = "1.5 ms" 3 = "2.0 ms"	RW	32-bit Integer																																																			
		57	Fdbk1 LinStahl Sts Feedback 1 Linear Stahl Status Displays the error status of the linear Stahl encoder for feedback 1. Options <table><tr><td></td><td>Reserved</td><td>No Position</td><td>Reserved</td><td>ROM Error</td><td>EPROM Error</td><td>RAM Error</td><td>Read Head 2</td><td>Read Head 1</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>OutOfRailErr</td><td>Reserved</td><td>Reserved</td><td>OutOfRailAlm</td><td>Optics Alarm</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Condition False e 1 = Condition True Bit 0 "Optics Alarm" – Displays an alarm when fiber optics require cleaning. Bit 1 "OutOfRailAlm" – Indicates that the read encoder count is at the maximum value (524'287). Bit 4 "OutOfRailErr" – Indicates that there is no rail anymore between the read head. Bit 8 "Read Head 1" – Indicates that the read head must be cleaned or installed correctly. Bit 9 "Read Head 2" – Indicates that the read head must be cleaned or installed correctly. Bit 10 "RAM Error" – Indicates a RAM error. Reading head needs to be repaired. Bit 11 "EPROM Error" – Indicates an EPROM error. Reading head needs to be repaired. Bit 12 "ROM Error" – Indicates a ROM error. Reading head needs to be repaired. Bit 14 "No Position" – Indicates that no position value was available. Only happens after power on or reset.		Reserved	No Position	Reserved	ROM Error	EPROM Error	RAM Error	Read Head 2	Read Head 1	Reserved	Reserved	Reserved	OutOfRailErr	Reserved	Reserved	OutOfRailAlm	Optics Alarm	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
			Reserved	No Position	Reserved	ROM Error	EPROM Error	RAM Error	Read Head 2	Read Head 1	Reserved	Reserved	Reserved	OutOfRailErr	Reserved	Reserved	OutOfRailAlm	Optics Alarm																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																									

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS	Encoder Out	80	Enc Out Sel Encoder Output Select Selects the Encoder Output. If Feedback 0 or 1 is configured as A Quad B Z or Hall Sensor, then this parameter has to be set to None. Otherwise, there is an Encoder Output Alarm (Bit 16 of [Module Sts]).	Default: 0 = "None" Options: 0 = "None" 1 = "Reserved" 2 = "Sine Cosine" 3 = "Channel X" 4 = "Channel Y"	RW	32-bit Integer
		81	Enc Out Mode Encoder Output Mode Configures the Encoder Output type.	Default: 0 = "A Quad B" Options: 0 = "A Quad B" 1 = "Inv A Quad B"	RW	32-bit Integer
		82	Enc Out FD PPR Encoder Output PPR Specifies the encoder output PPR for the simulated encoder mode ([Enc Out Sel] = "Virtual Master" or "Channel X" or "Channel Y"). In the emulated encoder mode, the SIN/COS signals PPR defines the encoder output PPR.	Default: 1 = "1024 PPR" Options: 0 = "512 PPR" 1 = "1024 PPR" 2 = "2048 PPR" 3 = "4096 PPR"	RW	32-bit Integer
		83	Enc Out Z Offset Encoder Output Z Offset Configures the offset of the Z pulse for the emulated/simulated encoder output. The marker offset is specified within one revolution.	Units: PPR Default: 0 Min/Max: 0 / 100000	RW	32-bit Integer
		84	Enc Out Z PPR Encoder Output Z PPR Configures the number of Z-Pulses per revolution.	Default: 0 = "1 Z-Pulse" Options: 0 = "1 Z-Pulse" 1 = "2 Z-Pulses" 2 = "4 Z-Pulses" 3 = "8 Z-Pulses" 4 = "16 Z-Pulses" 5 = "32 Z-Pulses"	RW	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
HOST GROUPS	Registration	90	Rgsn Arm Registration Arm Selects Registration Latches to be used. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Arm Latch 10</td><td>Arm Latch 9</td><td>Arm Latch 8</td><td>Arm Latch 7</td><td>Arm Latch 6</td><td>Arm Latch 5</td><td>Arm Latch 4</td><td>Arm Latch 3</td><td>Arm Latch 2</td><td>Arm Latch 1</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table>		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Arm Latch 10	Arm Latch 9	Arm Latch 8	Arm Latch 7	Arm Latch 6	Arm Latch 5	Arm Latch 4	Arm Latch 3	Arm Latch 2	Arm Latch 1	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0 = Condition False 1 = Condition True		
			Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Arm Latch 10	Arm Latch 9	Arm Latch 8	Arm Latch 7	Arm Latch 6	Arm Latch 5	Arm Latch 4	Arm Latch 3	Arm Latch 2	Arm Latch 1																																						
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																									
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
		91	Rgsn In 0 Filter Registration Input 0 Filter Configures a digital filter for the registration input 0. This filter can be used to reject spurious noise. The filter works by waiting a programmed time before deciding that the signal is valid. This waiting imposes a mandatory delay in the registration signal. The filter delay is programmable in increments of 100 nanoseconds from 0 (or no delay) up to 1500 nanoseconds.	Default: 0 = "0 ns" Options: 0 = "0 ns" 1 = "100 ns" 2 = "200 ns" 3 = "300 ns" 4 = "400 ns" 5 = "500 ns" 6 = "600 ns" 7 = "700 ns" 8 = "800 ns" 9 = "900 ns" 10 = "1000 ns" 11 = "1100 ns" 12 = "1200 ns" 13 = "1300 ns" 14 = "1400 ns" 15 = "1500 ns"	RW	Real																																																		

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																																																																	
HOST GROUPS	Registration	92	Rgsn In 1 Filter Registration Input 1 Filter Configures a digital filter for the registration input 1. This filter can be used to reject spurious noise. The filter works by waiting a programmed time before deciding that the signal is valid. This waiting imposes a mandatory delay in the registration signal. The filter delay is programmable in increments of 100 nanoseconds from 0 (or no delay) up to 1500 nanoseconds.	Default: 0 = "0 ns" Options: 0 = "0 ns" 1 = "100 ns" 2 = "200 ns" 3 = "300 ns" 4 = "400 ns" 5 = "500 ns" 6 = "600 ns" 7 = "700 ns" 8 = "800 ns" 9 = "900 ns" 10 = "1000 ns" 11 = "1100 ns" 12 = "1200 ns" 13 = "1300 ns" 14 = "1400 ns" 15 = "1500 ns"	RW	Real																																																																																																	
		93	Rgsn HmIn Filter Registration Home Input Filter Configures a digital filter for the home input. This filter can be used to reject spurious noise. The filter works by waiting a programmed time before deciding that the signal is valid. This waiting imposes a mandatory delay in the registration signal. The filter delay is programmable in increments of 100 nanoseconds from 0 (or no delay) up to 1500 nanoseconds.	Default: 0 = "0 ns" Options: 0 = "0 ns" 1 = "100 ns" 2 = "200 ns" 3 = "300 ns" 4 = "400 ns" 5 = "500 ns" 6 = "600 ns" 7 = "700 ns" 8 = "800 ns" 9 = "900 ns" 10 = "1000 ns" 11 = "1100 ns" 12 = "1200 ns" 13 = "1300 ns" 14 = "1400 ns" 15 = "1500 ns"	RW	Real																																																																																																	
		94	Rgsn Sts  Registration Status Status of the configured registration events.	<table><tr><th>Options</th><th>Home Input</th><th>Rgsn Input 1</th><th>Rgsn Input 0</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Reserved</th><th>Latch10Found</th><th>Latch10Armed</th><th>Latch9 Found</th><th>Latch9 Armed</th><th>Latch8 Found</th><th>Latch8 Armed</th><th>Latch7 Found</th><th>Latch7 Armed</th><th>Latch6 Found</th><th>Latch6 Armed</th><th>Latch5 Found</th><th>Latch5 Armed</th><th>Latch4 Found</th><th>Latch4 Armed</th><th>Latch3 Found</th><th>Latch3 Armed</th><th>Latch2 Found</th><th>Latch2 Armed</th><th>Latch1 Found</th><th>Latch1 Armed</th></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = False 1 = True				Options	Home Input	Rgsn Input 1	Rgsn Input 0	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Latch10Found	Latch10Armed	Latch9 Found	Latch9 Armed	Latch8 Found	Latch8 Armed	Latch7 Found	Latch7 Armed	Latch6 Found	Latch6 Armed	Latch5 Found	Latch5 Armed	Latch4 Found	Latch4 Armed	Latch3 Found	Latch3 Armed	Latch2 Found	Latch2 Armed	Latch1 Found	Latch1 Armed	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
Options	Home Input	Rgsn Input 1	Rgsn Input 0	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Latch10Found	Latch10Armed	Latch9 Found	Latch9 Armed	Latch8 Found	Latch8 Armed	Latch7 Found	Latch7 Armed	Latch6 Found	Latch6 Armed	Latch5 Found	Latch5 Armed	Latch4 Found	Latch4 Armed	Latch3 Found	Latch3 Armed	Latch2 Found	Latch2 Armed	Latch1 Found	Latch1 Armed																																																																							
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																																																								
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																																																							

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS	Registration	100	Rgsn Latch1 Cfg			
		103	Rgsn Latch2 Cfg			
		106	Rgsn Latch3 Cfg			
		109	Rgsn Latch4 Cfg			
		112	Rgsn Latch5 Cfg			
		115	Rgsn Latch6 Cfg			
		118	Rgsn Latch7 Cfg			
		121	Rgsn Latch8 Cfg			
		124	Rgsn Latch9 Cfg			
		127	Rgsn Latch10 Cfg			
			Registration Latch 1 Configure			
			Configures Registration Latch 1			
			Options			
			Reserved			
			Stg2EdgeFall			
			Stg2EdgeRise			
			Reserved			
			Stg2 In b1			
			Stg2 In b0			
			Logic Sel b1			
			Logic Sel b0			
			Stg1EdgeFall			
			Stg1EdgeRise			
			Reserved			
			Stg1 In b1			
			Stg1 In b0			
			Rev Capture			
			Fwd Capture			
			Channel Sel			
		Default	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 = Condition False		
		Bit	15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0	1 = Condition True		
			Bit 0 "Channel Sel" – Channel select (Fdbk0 or Fdbk1).			
			Bit 1 "Fwd Capture" – Direction select forward.			
			Bit 2 "Rev Capture" – Direction select reverse.			
			Bit 3 "Stg1 In b0" – Latch stage 1 input selection b0			
			Bit 4 "Stg1 In b1" – Latch stage 1 input selection b1			
			Bit 6 "Stg1EdgeRise" – Latch stage 1 edge/level select: Rising edge or high level			
			Bit 7 "Stg1EdgeFall" – Latch stage 1 edge/level select: Falling edge or low level			
			Bit 8 "Logic Sel b0" – Trigger stage combination logic			
			Bit 9 "Logic Sel b1" – Trigger stage combination logic			
			Bit 10 "Stg2 In b0" – Latch stage 2 input selection b0			
			Bit 11 "Stg2 In b1" – Latch stage 2 input selection b1			
			Bit 13 "Stg2EdgeRise" – Latch stage 2 edge/level select: Rising edge or high level			
			Bit 14 "Stg2EdgeFall" – Latch stage 2 edge/level select: Falling edge or low level			
		101	Rgsn Latch1 Psn	Default: 0	RO	32-bit
		104	Rgsn Latch2 Psn	Min/Max: 2147483648 / 2147483647		Integer
		107	Rgsn Latch3 Psn			
		110	Rgsn Latch4 Psn			
		113	Rgsn Latch5 Psn			
		116	Rgsn Latch6 Psn			
		119	Rgsn Latch7 Psn			
		122	Rgsn Latch8 Psn			
		125	Rgsn Latch9 Psn			
		128	Rgsn Latch10 Psn			
			Registration Latch X Position			
			Position Captured during the Registration Event for Latch X.			
		102	Rgsn Latch1 Time	Units: Cnt	RO	32-bit
		105	Rgsn Latch2 Time	Default: 0		Integer
		108	Rgsn Latch3 Time	Min/Max: 0 / 4294967295		
		111	Rgsn Latch4 Time			
		114	Rgsn Latch5 Time			
		117	Rgsn Latch6 Time			
		120	Rgsn Latch7 Time			
		123	Rgsn Latch8 Time			
		126	Rgsn Latch9 Time			
		129	Rgsn Latch10 Time			
			Registration Latch X Time			
			Time Captured when the Registration Event occurred for Latch X.			

Embedded EtherNet/ IP Parameters

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		1 Thru 16	DL From Net 01 DL From Net 16 Datalinks From Network 01...16 Sets the port number and parameter number to which the selected Datalinks should connect. Each selected port/parameter will be written with data received from the network. These are parameters written by the controller (outputs from the controller). If setting the value manually, the parameter value = (10000 x port number) + (destination parameter number). For example, suppose you want to use P1 [DL From Net 01] to write to Parameter 1 of an optional encoder module plugged into drive Port 5. The value for P1 [DL From Net 01] would be 50001 [(10000 x 5) + 1].	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer
		17 Thru 32	DL To Net 01 DL To Net 16 Datalinks To Network 01...16 Sets the port number and parameter number to which the selected Datalinks should connect. Each selected port/parameter will be read and their values transmitted over the network to the controller. These are parameters read by the controller (inputs to the controller). If setting the value manually, the parameter value = (10000 x port number) + (origination parameter number). For example, suppose you want to use P17 [DL To Net 01] to read Parameter 01 of an optional I/O module plugged into drive Port 4. The value for P17 [DL To Net 01] would be 40001 [(10000 x 4) + 1].	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer
		33	Port Number Port number Displays the drive port to which the embedded EtherNet/IP adapter is dedicated. This is always Port 13.	Default: 13 Value: 13	RO	Real
		34	DLs From Net Act Datalinks From Network Actual Displays the number of actual controller-to- drive Datalinks that the drive is using based on the I/O connection opened by the controller.	Default: 0 Min/Max: 0 / 16	RO	Real
		35	DLs To Net Act Datalinks To Network Actual Displays the number of actual drive-to- controller Datalinks that the controller is using based on the I/O connection opened by the controller.	Default: 0 Min/Max: 0 / 16	RO	Real
		36	BOOTP BOOTP Configures the adapter to use BOOTP so that you can set its IP address, subnet mask, and gateway address with a BOOTP server. When this parameter is disabled, you must use the adapter parameters to set these addressing functions.	Default: 1 = "Enabled" Options: 0 = "Disabled" 1 = "Enable"	RW	Real
		37	Net Addr Src Network Address Source Displays the source from which the adapter node address is taken. This will be switches, Parameters 40...43 [IP Addr Cfg x], or BOOTP. It is determined by the settings of the octet switches on the adapter. See Establishing A Connection With EtherNet/IP on page 2-2 for details.	Default: 0 = "Switches" Options: 0 = "Switches" 1 = "Parameters" 2 = "BOOTP"	RO	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		38 39 40 41	IP Addr Cfg 1 IP Addr Cfg 2 IP Addr Cfg 3 IP Addr Cfg 4 IP Address Configure 1...4 Sets the bytes in the IP address. 255 . 255 . 255 . 255 [IP Addr Cfg 1] [IP Addr Cfg 2] [IP Addr Cfg 3] Set with Octet Switch on Drive Main Control Board Important: To set the IP address using these parameters, P36 [BOOTP] must be set to "0" (Disabled).	Default: 0 Min/Max: 0 / 255	RW	32-bit Integer
		42 43 44 45	Subnet Cfg 1 Subnet Cfg 2 Subnet Cfg 3 Subnet Cfg 4 Subnet Configure 1...4 Sets the bytes of the subnet mask. 255 . 255 . 255 . 255 [Subnet Cfg 1] [Subnet Cfg 2] [Subnet Cfg 3] [Subnet Cfg 4] Important: To set the subnet mask using these parameters, P36 [BOOTP] must be set to "0" (Disabled).	Default: 0 Min/Max: 0 / 255	RW	32-bit Integer
		46 47 48 49	Gateway Cfg 1 Gateway Cfg 2 Gateway Cfg 3 Gateway Cfg 4 Gateway Configure 1...4 Sets the bytes of the gateway address. 255 . 255 . 255 . 255 [Gateway Cfg 1] [Gateway Cfg 2] [Gateway Cfg 3] [Gateway Cfg 4] Important: To set the gateway address using these parameters, P36 [BOOTP] must be set to "0" (Disabled).	Default: 0 Min/Max: 0 / 255	RW	Real
		50	Net Rate Cfg Network Rate Configure Sets the network data rate at which the adapter communicates. (Updates P51 [Net Rate Act] after a reset.)	Default: 0 = "Autodetect" Options: 0 = "Autodetect" 1 = "10Mbps Full" 2 = "10Mbps Half" 3 = "100Mbps Full" 4 = "100Mbps Half"	RW	32-bit Integer
		51	Net Rate Act Network Rate Actual Displays the actual network data rate used by the adapter.	Default: 0 = "No Link" Options: 0 = "No Link" 1 = "10Mbps Full" 2 = "10Mbps Half" 3 = "100Mbps Full" 4 = "100Mbps Half" 5 = "Dup IP Addr"	RO	32-bit Integer

File	Group	No.	Name Description	Values	Read-Write	Data Type																																																		
HOST GROUPS		52	Web Enable Web Enabled Enables/disables the adapter web page features.	Default: 1 = "Enabled" Options: 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer																																																		
		53	Web Features Web Features Enables/disables the Web-configurable e-mail notification feature. Options <table><tr><td></td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>Reserved</td><td>E-mail Cfg</td></tr><tr><td>Default</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>Bit</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table> 0 = Disabled 1 = Enabled		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	E-mail Cfg	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
		Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	E-mail Cfg																																							
	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																																							
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																								
	54	Comm Flt Action Communication Fault Action Sets the action that the adapter and drive will take if the adapter detects that I/O communications have been disrupted. This setting is effective only if I/O that controls the drive is transmitted through the adapter.	Default: 0 = "Fault" Options: 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last" 4 = "Send Flt Cfg"	RW	32-bit Integer																																																			
		ATTENTION: Risk of injury or equipment damage exists. P54 [Comm Flt Action] lets you determine the action of the adapter and connected drive if I/O communications are disrupted. By default, this parameter faults the drive. You can set this parameter so that the drive continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a risk of injury or equipment damage. When commissioning the drive, verify that your system responds correctly to various situations (for example, a disconnected cable).																																																						
		55	Idle Flt Action Idle Fault Action Sets the action that the adapter and drive will take if the adapter detects that the controller is in program mode or faulted. This setting is effective only if I/O that controls the drive is transmitted through the adapter.	Default: 0 = "Fault" Options: 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last" 4 = "Send Flt Cfg"	RW	32-bit Integer																																																		
		ATTENTION: Risk of injury or equipment damage exists. P55 [Idle Flt Action] lets you determine the action of the adapter and connected drive when the controller is idle. By default, this parameter faults the drive. You can set this parameter so that the drive continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a risk of injury or equipment damage. When commissioning the drive, verify that your system responds correctly to various situations (for example, a controller in idle state).																																																						
		56	Peer Flt Action Peer Fault Action Sets the action that the adapter and drive will take if the adapter detects that Peer I/O communications have been disrupted. This setting is effective only if I/O is transmitted through the adapter.	Default: 0 = "Fault" Options: 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last" 4 = "Send Flt Cfg"	RW	32-bit Integer																																																		
		ATTENTION: Risk of injury or equipment damage exists. P56 [Peer Flt Action] lets you determine the action of the adapter and connected drive if the adapter is unable to communicate with the designated peer. By default, this parameter faults the drive. You can set this parameter so that the drive continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a risk of injury or equipment damage. When commissioning the drive, verify that your system responds correctly to various situations (for example, a disconnected cable).																																																						

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		57	Msg Flt Action Message Fault Action Sets the action that the adapter and drive will take if the adapter detects that explicit messaging, only when used for drive control via PCCC and the CIP Register Object, has been disrupted.	Default: 0 = "Fault" Options: 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last" 4 = "Send Flt Cfg"	RW	32-bit Integer
			 ATTENTION: Risk of injury or equipment damage exists. P57 [Msg Flt Action] lets you determine the action of the adapter and connected drive if explicit messaging for drive control is disrupted. By default, this parameter faults the drive. You can set this parameter so that the drive continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a risk of injury or equipment damage. When commissioning the drive, verify that your system responds correctly to various situations (for example, a disconnected cable).			
		58	Flt Cfg Logic Fault Configure Logic Sets the Logic Command data that is sent to the drive if any of the following is true: • P54 [Comm Flt Action] is set to "4" (Send Flt Cfg) and I/O communications are disrupted. • P55 [Idle Flt Action] is set to "4" (Send Flt Cfg) and the controller is idle. • P56 [Peer Flt Action] is set to "4" (Send Flt Cfg) and Peer I/O communications are disrupted. • P57 [Msg Flt Action] is set to "4" (Send Flt Cfg) and explicit messaging for drive control is disrupted. The bit definitions in the Logic Command word for PowerFlex 750-Series drives are shown in Appendix A .	Default: 0000 0000 0000 0000 0000 0000 0000 0000 Min/Max: 0000 0000 0000 0000 0000 0000 0000 0000 1111 1111 1111 1111 1111 1111 1111 1111	RW	Real
		59	Flt Cfg Ref Fault Configure Reference Sets the Reference data that is sent to the drive if any of the following is true: • P54 [Comm Flt Action] is set to "4" (Send Flt Cfg) and I/O communications are disrupted. • P55 [Idle Flt Action] is set to "4" (Send Flt Cfg) and the controller is idle. • P56 [Peer Flt Action] is set to "4" (Send Flt Cfg) and Peer I/O communications are disrupted. • P57 [Msg Flt Action] is set to "4" (Send Flt Cfg) and explicit messaging for drive control is disrupted.	Default: 0 Min/Max: -/+3.40282 x 10 ³⁸	RW	Real
		60 Thru 75	Flt Cfg DL 01 Flt Cfg DL 16 Fault Configure DeviceLogix Sets the data that is sent to the Datalink in the drive if any of the following is true: • P54 [Comm Flt Action] is set to "4" (Send Flt Cfg) and I/O communications are disrupted. • P55 [Idle Flt Action] is set to "4" (Send Flt Cfg) and the controller is idle. • P56 [Peer Flt Action] is set to "4" (Send Flt Cfg) and Peer I/O communications are disrupted. • P57 [Msg Flt Action] is set to "4" (Send Flt Cfg) and explicit messaging for drive control is disrupted.	Default: 0 Min/Max: 0 / 4294967295	RW	Real
		76	DLs Fr Peer Cfg Datalinks From Peer Configure Sets the number of network-to-drive Datalinks (parameters) that are used for peer I/O. The Datalinks being used are allocated from the end of the list. For example, if this parameter's value is set to "3," Datalinks 14...16 are allocated for the 3 selected Datalinks. The Datalinks allocated for peer I/O cannot overlap with other assigned DL From Net 01...16 parameters.	Default: 0 Min/Max: 0 / 16	RW	Real
		77	DLs Fr Peer Act Datalinks From Peer Action Displays the value of P76 [DLs Fr Peer Cfg] at the time the drive was reset. This is the number of actual peer-to-drive Datalinks that the drive is expecting.	Default: 0 Min/Max: 0 / 16	RO	Real

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS		78	Logic Src Cfg Logic Source Configure Controls which of the peer-to-drive Datalinks contain the Logic Command for the drive.	Default: 0 Min/Max: 0 / 16	RW	Real
		79	Ref Src Cfg Reference Source Configure Controls which of the peer-to-drive Datalinks contain the Reference for the drive.	Default: 0 Min/Max: 0 / 16	RW	Real
		80	Fr Peer Timeout From Peer Timeout Sets the timeout for a Peer I/O connection. If the time is reached without the adapter receiving (consuming) a message, the adapter will respond with the action specified in P56 [Peer Flt Action]. In an adapter receiving (consuming) Peer I/O, the value of this parameter must be greater than the product of the value of P89 [To Peer Period] in the adapter transmitting (producing) Peer I/O multiplied by the value of P90 [To Peer Skip] in the adapter transmitting (producing) Peer I/O.	Units: Secs Default: 10.00 Min/Max: 0.01 / 10.00	RW	Real
		81 82 83 84	Fr Peer Addr 1 Fr Peer Addr 2 Fr Peer Addr 3 Fr Peer Addr 4 From Peer Address 1...4 Sets the bytes in the IP address that specifies the device from which the adapter receives (consumes) Peer I/O data. 255 . 255 . 255 . 255 [Peer Inp Addr 1] [Peer Inp Addr 2] [Peer Inp Addr 3] [Peer Inp Addr 4] Important: The Peer Inp Addr must be on the same subnet as the embedded EtherNet/IP adapter. Changes to these parameters are ignored when P85 [Fr Peer Enable] is "1" (On).	Default: 0 Min/Max: 0 / 255	RW	Real
		85	Fr Peer Enable From Peer Enable Controls whether Peer I/O input is operating. A value of "0" (Off) turns off Peer I/O input. A value of "1" (Cmd/Ref) overrides the settings in Parameters P76 [DLs Fr Peer Cfg], P78 [Logic Src Cfg], and P79 [Ref Src Cfg] and automatically uses peer Datalink 01 as the drive's present Logic Command and peer Datalink 02 as the drive's Reference. A value of "2" (Custom) enables peer I/O input using the Datalink count and settings provided by the user.	Default: 0 = "Off" Options: 0 = "Off" 1 = "Cmd/Ref" 2 = "Custom"	RW	32-bit Integer
		86	Fr Peer Status From Peer Status Displays the status of the consumed Peer I/O input connection.	Default: 0 = "Off" Options: 0 = "Off" 1 = "Waiting" 2 = "Running" 3 = "Faulted"	RW	32-bit Integer
		87	DLs To Peer Cfg Datalinks To Peer Configure Sets the number of drive-to-network Datalinks (parameters) that are used for Peer I/O. The Datalinks being used are allocated from the end of the list. For example, if this parameter's value is set to "3", Datalinks 14...16 are allocated for the 3 selected Datalinks. The Datalinks allocated for this cannot overlap with other assigned DL To Net 01...16 parameters.	Default: 0 Min/Max: 0 / 16	RW	Real
		88	DLs To Peer Act Datalinks To Peer Action Displays the value of P87 [DLs To Peer Cfg] at the time the drive was reset. This is the number of actual drive-to-peer Datalinks that the drive is expecting.	Default: 0 Min/Max: 0 / 16	RO	Real

File	Group	No.	Name Description	Values		Read-Write	Data Type
HOST GROUPS		89	To Peer Period To Peer Period Sets the minimum time that an adapter will wait when transmitting data to a peer. Important: Changes to this parameter are ignored when P91 [To Peer Enable] is "0" (Off).	Units: Secs Default: 10.00 Min/Max: 0.01 / 10.00		RW	Real
		90	To Peer Skip To Peer Skip Sets the maximum time that an adapter will wait when transmitting data to a peer. The value of P89 [To Peer Period] is multiplied by the value of this parameter to set the time. Important: Changes to this parameter are ignored when P91 [To Peer Enable] is "0" (Off).	Default: 1 Min/Max: 1 / 16		RW	Real
		91	To Peer Enable To Peer Enable Controls whether Peer I/O output is operating. A value of "0" (Off) turns off Peer I/O output. A value of "1" (Cmd/Ref) overrides the settings in Parameters P31 [DL To Net 15], P32 [DL To Net 16], P76 [DLs Fr Peer Cfg], and P77 [DLs Fr Peer Act], and automatically sends the drive's present Logic Command (as Datalink 01) and Reference (as Datalink 02). A value of "2" (Custom) enables Peer I/O output using the Datalink count and settings provided by the user.	Default: 0 = "Off" Options: 0 = "Off" 1 = "Cmd/Ref" 2 = "Custom"		RW	32-bit Integer

Troubleshooting

This chapter provides information to guide through troubleshooting PowerFlex 750-Series faults and alarms.

For information on...	See page
Faults and Alarms	4-1
Drive Status	4-2
Manually Clearing Faults	4-2
Fault and Alarm Descriptions	4-4
Common Symptoms and Corrective Actions	4-10

Faults and Alarms

A fault is a condition that stops the drive. There are three types of faults.

Type	Description
Auto Reset Run	When this type of fault occurs, and parameter [Auto Rstrt Tries] is set to a value greater than "0," a user-configurable timer, [Auto Rstrt Delay] begins. When the timer reaches zero, the drive attempts to automatically reset the fault. If the condition that caused the fault is no longer present, the fault will be reset and the drive will be restarted. "Auto Reset Run" faults are identified by "Y" in the "Auto Reset" column in Table 4.A on page 4-2 .
Non-Resettable	This type of fault normally requires drive or motor repair. The cause of the fault must be corrected before the fault can be cleared. The fault will be reset on power up after repair. Non-Resettable faults are identified by "Fault" in the "Type" column in Table 4.A on page 4-2 .
Configurable	These faults can be enabled/disabled to annunciate or ignore a fault condition. Faults that are configurable are identified by "Configurable" in the "Type" column in Table 4.A on page 4-2 . The parameter used to configure this type of fault is identified in the "Configuration Parameter" column in Table 4.A on page 4-2 .

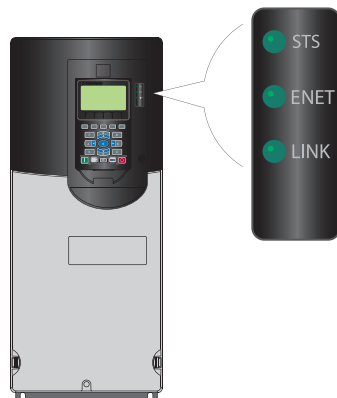
An alarm is a condition that, if left unaddressed, may stop the drive. There are two types of alarms.

Type	Description
Configurable	These alarms can be enabled or disabled using parameter [Alarm Config 1]. Alarms that are configurable are identified as "Alarm 1" in the "Type" column in Table 4.A on page 4-2 . The parameter used to configure this type of alarm is identified in the "Configuration Parameter" column in Table 4.A on page 4-2 .
Non-Configurable	These alarms are always enabled. Alarms that are not configurable are identified as "Alarm 2" in the "Type" column in Table 4.A on page 4-2 .

Drive Status

The condition or state of your drive is constantly monitored. Any changes will be indicated through the LEDs and/or the HIM (if present).

Table 4.A Drive Status Indicator Descriptions



Name	Color	State	Description
STS (Status)	Green	Flashing	Drive ready, but not running & no faults are present.
		Steady	Drive running, no faults are present.
	Yellow	Flashing	When running, a type 2 (non-configurable) alarm condition exists, drive continues to run. When stopped, a start inhibit exists and the drive cannot be started.
		Steady	A type 1 (user configurable) alarm condition exists, but drive continues to run.
	Red	Flashing	A major fault has occurred. Drive will stop. Drive cannot be started until fault condition is cleared.
		Steady	A non-resettable fault has occurred.
	Red / Yellow	Flashing Alternately	A minor fault has occurred. Use parameter 950 [Minor Flt Config] to enable. If not enabled acts like a major fault. When running, drive continues to run. System is brought to a stop under system control. Fault must be cleared to continue.
	Yellow / Green	Flashing Alternately	When running, a type 1 alarm condition exists.
ENET	Green / Red	Flashing Alternately	Drive is flash upgrading.
	Unlit	Off	The embedded EtherNet/IP adapter and/or network is not powered, the adapter is not properly connected to the network, or the adapter needs an IP address.
	Red	Steady	The embedded EtherNet/IP adapter failed the duplicate IP address detection test.
	Red	Flashing	An EtherNet/IP connection has timed out.
	Red / Green	Flashing	The embedded EtherNet/IP adapter is performing a self-test.
	Green	Flashing	The embedded EtherNet/IP adapter is properly connected but is not communicating with any devices on the network.
LINK	Green	Steady	The embedded EtherNet/IP adapter is properly connected and communicating on the network.
	Unlit	Off	The embedded EtherNet/IP adapter is not powered or is not transmitting on the network.
	Green	Flashing	The embedded EtherNet/IP adapter is transmitting on the network.

Important: The Status Indicator LEDs on the HIM cradle do not indicate the current status of an installed Communication Adapter option. If an optional Communication Adapter is installed, refer to that option's user manual for a description of LED location and indication.

Manually Clearing Faults

Step	Key(s)
1. Press the "Clear" soft key to acknowledge the fault. The fault information will be removed so that you can use the HIM.	
2. Address the condition that caused the fault. The cause must be corrected before the fault can be cleared.	
3. After corrective action has been taken, clear the fault by one of these methods: - Press Stop - Cycle drive power - Select the "Clear" soft key on the HIM Diagnostic folder Faults menu.	

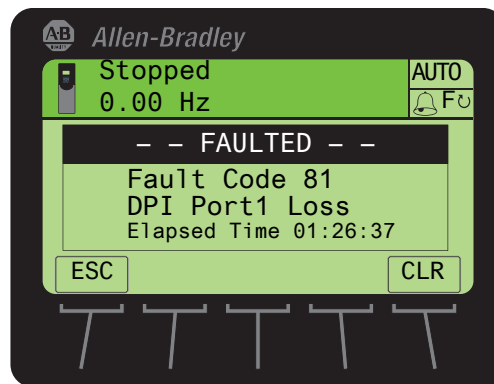
HIM Indication

Fault Display Screen

The pop-up Fault Display screen automatically appears when a fault condition for the Host Drive or any connected peripheral is detected. The pop-up Fault Display screen flashes to alert that a fault condition exists. This screen displays the:

- Fault Code number
- Fault description
- Elapsed time (in hh:mm:ss format) from fault detection

Figure 4.1 Pop-Up/Flashing Fault Display Screen



Soft Key Functions

Label	Name	Description
ESC	Escape	Reverts back to the previous screen without clearing the fault.
CLR	Clear	Removes the pop-up Fault Display screen from the display and clears the fault.

Single Function Key

Key	Name	Description
	Stop	Removes the pop-up Fault Display screen from the display and clears the fault.

Fault and Alarm Descriptions

The table below contains a list of faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable).

Table 4.B Fault and Alarm Types, Descriptions and Actions

No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
0	No Entry					
2	Auxiliary Input	Fault	Coast			An auxiliary input interlock is open.
3	Power Loss	Configurable		449 Power Loss Actn	Y	The DC bus voltage remained below the [Pwr Loss X Level] of nominal for longer than the time programmed in [Pwr Loss X Time].
4	UnderVoltage	Configurable		460 UnderVltg Action	Y	If the bus voltage Par 11 falls below the value set in Par 461 [UnderVltg Level] an undervoltage condition exists.
5	OverVoltage	Fault	Coast		Y	The DC bus voltage exceeded the maximum value.
7	Motor Overload	Configurable		410 Motor OL Actn	Y	An internal electronic overload trip has occurred.
8	Heatsink OvrTemp	Fault	Coast			The heatsink temperature has exceeded 100% of the drive Temperature.
9	Trnsistr OvrTemp	Fault	Coast		Y	The output transistors have exceeded the maximum operating temperature.
12	HW OverCurrent	Fault	Coast		Y	The drive output current has exceeded the hardware current limit.
13	Fault	Fault	Coast		Y	A current path to earth ground greater than approximately 40% of drive rating has occurred.
14	Ground Warning	Alarm 1				The ground current has exceeded the level set in [Gnd Warn Level].
15	Load Loss	Configurable		441 Load Loss Action		The output torque current is below the value programmed in [Load Loss Level] for a time period greater than the time programmed in [Load Loss Time].
17	Input Phase Loss	Configurable		462 InPhase LossActn		The DC bus ripple has exceeded a preset level.
20	TorqPrv Spd Band	Fault	Coast			The difference between the [Commanded Speed] and [Encoder Speed] has exceeded the level programmed in [Spd Dev Band] for a time period greater than the time programmed in [Spd Band Integrat].
21	Output PhaseLoss	Configurable		444 OutPhaseLossActn		The current in one or more phases has been lost or remains below a preset level.
24	Decel Inhibit	Configurable		409 Dec Inhibit Actn		The drive is not following a commanded deceleration because it is attempting to limit the bus voltage.
25	OverSpeed Limit	Fault	Coast		Y	Functions such as Slip Compensation or Bus Regulation have attempted to add an output frequency adjustment greater than that programmed in [Overspeed Limit].
26	Brake Slipped	Alarm 1 & 2				The encoder movement has exceeded the level in [Brake Slip Count] after the brake was set.
27	Torq Prove Cflct	Alarm 2				When [Torq Prove Config] is enabled, [Motor Ctrl Sel], [Feedback Select] and [Motor Fdbk Type] must be properly set.
28	TP Encls Config	Fault				
33	AuRsts Exhausted	Fault	Coast			The drive unsuccessfully attempted to reset a fault and resume running for the programmed number of tries.
36	SW OverCurrent	Fault	Coast		Y	The drive output current has exceeded the 1 ms current rating. This rating is greater than the 3 second current rating and less than the hardware overcurrent fault level. It is typically 200-250% of the drive continuous rating.
38	Phase U to Grnd	Fault	Coast			A phase to ground fault has been detected between the drive and motor in this phase.
39	Phase V to Grnd					
40	Phase W to Grnd					

No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
41	Phase UV Short	Fault	Coast			Excessive current has been detected between these two output terminals.
42	Phase VW Short					
43	Phase WU Short					
44	Phase UNegToGrnd	Fault	Coast			A phase to ground fault has been detected between the drive and motor in this phase.
45	Phase VNegToGrnd					
46	Phase WNegToGrnd					
48	System Defaulted	–				The drive and options were commanded to write most default values to the NVS. Drive parameter values that do not change: • P300 [Speed Units] • P301 [Access Level] • P302 [Language] • P305 [Voltage Class] • P306 [Duty Rating] Embedded EtherNet parameter values that do not change: • P36 [BOOTP] • P38...P41 [IP Addr Cfg x] • P42...P45 [Subnet Cfg x] • P46...P49 [Gateway Cfg x]
49	Drive Powerup	–				A Power Up Marker in the Fault Queue indicating that the drive power cycled.
51	Clr Fault Queue	–				Indicates the fault queue was cleared.
55	Ctrl Bd Overtemp	Fault	Coast			The temperature sensor on the Main Control board detected excessive heat. See product temperature requirement.
58	Module Defaulted	–				The drive was commanded to write most or all default values to the NVS.
61	Shear Pin 1	Configurable		435 Shear Pin 1 Actn	Y	The programmed value in [Current Limit Value] has been exceeded.
62	Shear Pin 2	Configurable		438 Shear Pin 2 Actn	Y	The programmed value in [Current Limit Value] has been exceeded.
64	Drive OverLoad	Alarm 1, Fault	Coast		Y	The drive rating of 110% for 1 minute or 150% for 3 seconds has been exceeded.
65	OW TqLvl Timeout	Fault	Coast			
66	OW Torq Level	Alarm 2, Fault	Coast			
71	Port 1 Adapter	Fault	Coast			The DPI communications option has a fault. See device event queue.
72	Port 2 Adapter					
73	Port 3 Adapter					
74	Port 4 Adapter					
75	Port 5 Adapter					
76	Port 6 Adapter					
77	IR Volts Range	Alarm 2, Fault	Coast			"Calculate" is the Autotune default and the value determined by the Autotune procedure for [IR Drop Volts] is not in the range of acceptable values.
78	FluxAmpsRef Rang	Alarm 2, Fault	Coast			The value for flux amps determined by the Autotune procedure exceeds the value programmed in [Motor NP FLA].
79	Excessive Load	Fault	Coast			The motor did not come up to speed in the allotted time during Autotune.
80	AutoTune Aborted	Fault	Coast			The Autotune function was manually canceled or a fault occurred.
81	Port 1 DPI Loss	Fault	Coast			The DPI port stopped communicating. Check connections and drive grounding.
82	Port 2 DPI Loss					
83	Port 3 DPI Loss					
84	Port 4 DPI Loss					
85	Port 5 DPI Loss					
86	Port 6 DPI Loss					

No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
87	IXo VoltageRange	Alarm 2, Fault	Coast			The voltage calculated for motor inductive impedance exceeds 25% of the value of [Motor NP Volts].
91	Pri VelFdbk Loss	Configurable		Note: See option module for config parameter number		A Feedback Loss has been detected by an option module, Main Control board, or due to communication loss. The drive must be configured to not fault if the feedback loss switch over feature is enabled.
94	Alt VelFdbk Loss	Configurable		Note: See option module for config parameter number		A Feedback Loss can be detected by an option module, Main Control board, or due to a communication loss. The drive must be configured to not fault if the feedback loss switch over feature is enabled.
95	Aux VelFdbk Loss	Configurable				
96	PositionFdbkLoss	Configurable				
97	Auto Tach Switch					
100	Parameter Chksum	Fault	Coast			The checksum read from the non-volatile storage does not match the checksum calculated. Data set to default value.
104	Pwr Brd Checksum	Fault	Coast			The checksum read from the non-volatile storage does not match the checksum calculated. Data set to default value.
106	Incompat MCB-PB	Fault	Coast			The Main Control board did not recognize the power structure. Flash with newer Application version.
107	Replaced MCB-PB	Fault	Coast			The Main Control board was moved to a different power structure. Data set to default values.
111	PwrBd Invalid ID	Fault	Coast			Power structure ID invalid. Flash with newer Application version.
112	PwrBd App MinVer	Fault	Coast			Power structure needs newer Application version. Flash with newer Application version.
113	Tracking DataErr	Fault	Coast			Internal data error.
115	PwrDn Table Full	Fault	Coast			Internal data error.
116	PwrDnEntry2Large	Fault	Coast			Internal data error.
117	PwrDn Data Chksm	Fault	Coast			Internal data error.
118	PwrBd PwrDn Chks	Fault	Coast			The checksum read from the non-volatile storage does not match the checksum calculated. Data set to default value.
124	App ID Changed	Fault	Coast			Application Firmware changed. Verify Application version.
125	Using Backup App	Fault	Coast			Application did not flash correctly. Reflash.
134	Start On PowerUp	Alarm 1				When [Start At PowerUp] is enabled, an alarm will be set for the time programmed in [PowerUp Delay].
137	Ext Prechrg Err	Configurable		323 PreChrg Err Cnfg		The seal contact on the external precharge contactor has opened (as signalled by P190 [DI Prchrg Seal]) while the drive was running (PWM was active).
138	Precharge Open	Fault	Coast			The internal precharge was commanded to open while the drive was running (PWM was active). The internal fault latch will be automatically cleared when PWM is disabled.
141	Autn Enc Angle	Fault	Coast			
142	Autn Spd Rstrct	Fault	Coast			
143	Autotune CurReg	Fault	Coast			
144	Autotune Inertia	Fault	Coast			
145	Autotune Travel	Fault	Coast			
155	Bipolar Conflict	Fault	Coast			Digital Input conflict with direction mode.
157	DigIn Cnfg B	Alarm 2				Digital input conflict. Correct Digital Input configuration.
158	DigIn Cnfg C	Alarm 2				Digital input conflict. Correct Digital Input configuration.
161	Sleep Config	Alarm 2				There is a Sleep/Wake configuration error. With Sleep Wake Mode = Direct, possible causes include: • Drive is stopped and Wake Level < Sleep Level. • Stop=CF, Run, Run Fwd, or Run Rev is not configured in Digital Input functions.
162	Waking	Alarm 2				The Wake timer is counting toward a value that will start the drive.
168	HeatSinkUnderTmp	Fault				

No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
169	PWM Freq Reduced	Alarm 1				
170	CurLimit Reduced	Alarm 1				
177	Profiling Active	Alarm 1				The Profile/Indexer is active.
178	Homing Active	Alarm 1				The Homing function is active.
179	Home Not Set	Alarm 1				The Home position was not set before profile operation.
184	TrqMode Incompat	Alarm 2				
185	MaxFreq Conflict	Alarm 2				Indicates that the values of [Max Fwd Speed] and [Max Rev Speed] are in conflict with the value of [Break Frequency].
186	VHz Neg Slope	Alarm 2				Indicates that the V/Hz curve segment resulted in a negative V/hz slope.
187	VHz Boost Limit	Alarm 2				
188	VHz Curve Incomp					
189	Vel Fbk Sel Err					
190	PM FV Pri Fdbk					
191	PM FV Pri Fdbk					
192	Fwd Spd Lim Cnfg					
193	Rev Spd Lim Cnfg					
203	Port 13 Adapter	Fault	Coast			The embedded EtherNet/IP adapter has a fault. See EtherNet event queue.
204	Port 14 Adapter	Fault	Coast			The DeviceLogix adapter has a fault.
205	DPI TransportErr	Type 1				A DPI Communication Error has occurred.
210	HW Enbl Jmpr Out	Fault	Coast			A Safety option board is present and the hardware enable Jumper is removed. Insert the jumper.
211	Safety Brd Fault	Fault	Coast			A Safety option module has indicated a fault. Reset or power cycle drive.
212	Safety Jmpr Out	Fault	Coast			A Safety jumper is not inserted and a Safety option module is not present. Insert the jumper.
213	Safety Jumper In	Fault	Coast			A Safety Jumper is inserted and a Safety option module is present. Remove the jumper.
214	SafetyPortCnflct	Alarm 2				
224	Port 4 Comm Loss	Fault	Coast			The Main Control board lost communicate with the option module after establishing communication. Verify option is seated in the port and secured with mounting screws.
225	Port 5 Comm Loss					
226	Port 6 Comm Loss					
227	Port 7 Comm Loss					
228	Port 8 Comm Loss					
229	Port 9 Comm Loss					
244	Port 4 Config	Alarm 2				The Main Control board does not have the correct option in the port. Option may not be compatible with product or MCB firmware needs to be updated to support it. Option may have to be moved or removed, accept option configuration change.
245	Port 5 Config					
246	Port 6 Config					
247	Port 7 Config					
248	Port 8 Config					
249	Port 9 Config					
264	Port 4 Checksum	Fault	Coast			A option module storage checksum failed. Option data has been set to default values.
265	Port 5 Checksum					
266	Port 6 Checksum					
267	Port 7 Checksum					
268	Port 8 Checksum					
269	Port 9 Checksum					
281	ENet Checksum	Fault	Coast			Ethernet/IP storage checksum failed. Data set to default values. DeviceLogix storage checksum failed. Data set to default values.
282	DLX Checksum					

No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
291	HS Fan Life	Configurable		P493		Preventative maintenance function has reached the event level. Perform maintenance.
292	In Fan Life			P500		
293	MtrBrng Life			P506		
294	MtrBrng Lube			P510		
295	MachBrng Life			P515		
296	MachBrng Lube			P519		
307	Port7InvalidCard	Fault				Option not valid in that port. Remove option module.
308	Port7InvalidCard	Fault				

Table 4.C Fault and Alarm Cross Reference By Name

Fault/Alarm Text	Number	Fault/Alarm Text	Number
Alt VelFdbk Loss	94	Port 13 Adapter	203
App ID Changed	124	Port 14 Adapter	204
AuRsts Exhausted	33	Port 2 Adapter	72
Autn Enc Angle	141	Port 2 DPI Loss	82
Autn Spd Rstrct	142	Port 3 Adapter	73
Auto Tach Switch	97	Port 3 DPI Loss	83
AutoTune Aborted	80	Port 4 Adapter	74
Autotune CurReg	143	Port 4 Checksum	264
Autotune Inertia	144	Port 4 Comm Loss	224
Autotune Travel	145	Port 4 Config	244
Aux VelFdbk Loss	95	Port 4 DPI Loss	84
Auxiliary Input	2	Port 5 Adapter	75
Bipolar Conflict	155	Port 5 Checksum	265
Brake Slipped	26	Port 5 Comm Loss	225
Clr Fault Queue	51	Port 5 Config	245
Crtl Bd Overtemp	55	Port 5 DPI Loss	85
Curlimit Reduced	170	Port 6 Adapter	76
Decel Inhibit	24	Port 6 Checksum	266
DigIn Cnfg B	157	Port 6 Comm Loss	226
DigIn Cnfg C	158	Port 6 Config	246
DLX Checksum	282	Port 6 DPI Loss	86
DPI TransportErr	205	Port 7 Checksum	267
Drive OverLoad	64	Port 7 Comm Loss	227
Drive Powerup	49	Port 7 Config	247
ENet Checksum	281	Port 8 Checksum	268
Excessive Load	79	Port 8 Comm Loss	228
Ext Prechg Err	137	Port 8 Config	248
FluxAmpsRef Rang	78	Port 9 Checksum	269
Fwd Spd Lim Cnfg	192	Port 9 Comm Loss	229
Ground Fault	13	Port 9 Config	249
Ground Warning	14	Port7InvalidCard	307
Heatsink OvrTemp	8	Port7InvalidCard	308
HeatSinkUnderTmp	168	PositionFdbkLoss	96
Home Not Set	179	Power Loss	3
Homing Active	178	Precharge Open	138
HS Fan Life	291	Pri VelFdbk Loss	91
HW Enbl Jmpr Out	210	Profiling Active	177
HW OverCurrent	12	PWM Freq Reduced	169
In Fan Life	292	Pwr Brd Checksum	104
Incompat MCB-PB	106	PwrBd App MinVer	112

Fault/Alarm Text	Number
Input Phase Loss	17
IR Volts Range	77
IXo VoltageRange	87
Load Loss	15
MachBrng Life	295
MachBrng Lube	296
MaxFreq Conflict	185
Module Defaulted	58
Motor Overload	7
MtrBrng Life	293
MtrBrng Lube	294
No Entry	0
Output PhaseLoss	21
OverSpeed Limit	25
OverVoltage	5
OW Torq Level	66
OW TqLvl Timeout	65
Parameter Chksum	100
Phase U to Grnd	38
Phase UNegToGrnd	44
Phase UV Short	41
Phase V to Grnd	39
Phase VNegToGrnd	45
Phase VW Short	42
Phase W to Grnd	40
Phase WNegToGrnd	46
Phase WU Short	43
PM FV Pri Fdbk	190
PM FV Pri Fdbk	191
Port 1 Adapter	71
Port 1 DPI Loss	81

Fault/Alarm Text	Number
PwrBd Invalid ID	111
PwrBd PwrDn Chks	118
PwrDn Data Chksm	117
PwrDn Table Full	115
PwrDnEntry2Large	116
Replaced MCB-PB	107
Rev Spd Lim Cnfg	193
Safety Brd Fault	211
Safety Jmpr Out	212
Safety Jumper In	213
SafetyPortCnflct	214
Shear Pin 1	61
Shear Pin 2	62
Sleep Config	161
Start On PowerUp	134
SW OverCurrent	36
System Defaulted	48
Torq Prove Cflct	27
TorqPrv Spd Band	20
TP Encls Config	28
Tracking DataErr	113
Trnsistr OvrTemp	9
TrqMode Incompat	184
UnderVoltage	4
Using Backup App	125
Vel Fbk Sel Err	189
VHz Boost Limit	187
VHz Curve Incomp	188
VHz Neg Slope	186
Waking	162

Common Symptoms and Corrective Actions

Drive does not Start from Start or Run Inputs wired to the terminal block.

Cause(s)	Indication	Corrective Action
Drive is Faulted	Flashing red status light	Clear fault. • Press Stop • Cycle power • Set [Fault Clear] to 1 • "Clear Faults" on the HIM Diagnostic menu.
Incorrect input wiring. See page X for wiring examples. • 2 wire control requires Run, Run Forward, Run Reverse or Jog input. • 3 wire control requires Start and Stop inputs. • Jumper from terminal 25 to 26 is required.	None	Wire inputs correctly and/or install jumper.
Incorrect digital input programming. • Mutually exclusive choices have been made (i.e., Jog and Jog Forward). • 2 wire and 3 wire programming may be conflicting. • Exclusive functions (i.e, direction control) may have multiple inputs configured. • Stop is factory default and is not wired.	None	Program [Digital Inx Sel] for correct inputs. Start or Run programming may be missing.
	Flashing yellow status light and "DigIn CflctB" indication on LCD HIM. [Drive Status 2] shows type 2 alarm(s).	Program [Digital Inx Sel] to resolve conflicts. Remove multiple selections for the same function. Install stop button to apply a signal at stop terminal.

Drive does not Start from HIM.

Cause(s)	Indication	Corrective Action
Drive is programmed for 2 wire control. HIM Start button is disabled for 2 wire control unless param. 192, bit 1 = "1."	None	If 2 wire control is required, no action needed. See [Save HIM Ref] on page 3-34 . If 3 wire control is required, program [Digital Inx Sel] for correct inputs.

Drive does not respond to changes in speed command.

Cause(s)	Indication	Corrective Action
No value is coming from the source of the command.	LCD HIM Status Line indicates "At Speed" and output is 0 Hz.	1. If the source is an analog input, check wiring and use a meter to check for presence of signal. 2. Check [Commanded Speed] for correct source. (See page 3-7)
Incorrect reference source has been programmed.	None	3. Check [Speed Ref Source] for the source of the speed reference. (See page 3-39) 4. Reprogram [Speed Ref A Sel] for correct source. (See page 3-19)
Incorrect Reference source is being selected via remote device or digital inputs.	None	5. Check [Drive Status 1], page 3-37 , bits 12 and 13 for unexpected source selections. 6. Check [Dig In Status], page 3-40 to see if inputs are selecting an alternate source. 7. Reprogram digital inputs to correct "Speed Sel x" option. (See page 3-55)

Motor and/or drive will not accelerate to commanded speed.

Cause(s)	Indication	Corrective Action
Acceleration time is excessive.	None	Reprogram [Accel Time x]. (See page 3-26)

Cause(s)	Indication	Corrective Action
Excess load or short acceleration times force the drive into current limit, slowing or stopping acceleration.	None	Check [Drive Status 2], bit 10 to see if the drive is in Current Limit. (See page 3-37) Remove excess load or reprogram [Accel Time x]. (See page 3-26)
Speed command source or value is not as expected.	None	Check for the proper Speed Command using Steps 1 through 7 above.
Programming is preventing the drive output from exceeding limiting values.	None	Check [Maximum Speed] (See page 3-17) and [Maximum Freq] (See page 3-10) to assure that speed is not limited by programming.

Motor operation is unstable.

Cause(s)	Indication	Corrective Action
Motor data was incorrectly entered or Autotune was not performed.	None	1. Correctly enter motor nameplate data. 2. Perform "Static" or "Rotate" Autotune procedure. (Param #061, page 3-12)

Drive will not reverse motor direction.

Cause(s)	Indication	Corrective Action
Digital input is not selected for reversing control.	None	Check [Digital Inx Sel], page 3-55 . Choose correct input and program for reversing mode.
Digital input is incorrectly wired.	None	Check input wiring. (See page 1-17)
Direction mode parameter is incorrectly programmed.	None	Reprogram [Direction Mode], page 3-33 for analog "Bipolar" or digital "Unipolar" control.
Motor wiring is improperly phased for reverse.	None	Switch two motor leads.
A bipolar analog speed command input is incorrectly wired or signal is absent.	None	1. Use meter to check that an analog input voltage is present. 2. Check wiring. (See page 1-17) Positive voltage commands forward direction. Negative voltage commands reverse direction.

Stopping the drive results in a Decel Inhibit fault.

Cause(s)	Indication	Corrective Action
The bus regulation feature is enabled and is halting deceleration due to excessive bus voltage. Excess bus voltage is normally due to excessive regenerated energy or unstable AC line input voltages. Internal timer has halted drive operation.	Decel Inhibit fault screen. LCD Status Line indicates "Faulted".	1. See Attention statement on page P-4 . 2. Reprogram parameters 161/162 to eliminate any "Adjust Freq" selection. 3. Disable bus regulation (parameters 161 & 162) and add a dynamic brake. 4. Correct AC input line instability or add an isolation transformer. 5. Reset drive.

Notes:

Supplemental Drive Information

Specifications

Category	PowerFlex 755	
Certifications		Listed to UL508C and CAN/CSA-C22.2 No. 14-05.
		In conformity with the following European Directives: EMC Directive (2004/108/EC) Low Voltage Directive (2006/95/EC) Standards applied: EN 61800-3:2004 EN 61800-5-1:2007
		TUV Rheinland Standards applied: EN 61800-3:2004 EN 61800-5-1:2007 EN ISO 13849-1:2008 EN ISO 13849-2:2003 EN 61800-5-2:2007 EN 61508 PARTS 1-7:2000 EN 62061:2005 EN 60204-1:2006
		Australian Communications and Media Authority In conformity with the following: Radiocommunications Act: 1992 Radiocommunications Standard: 2008 Radiocommunications Labelling Notice: 2008 Standards applied: EN 61800-3:2004
		Electric Power Research Institute Certified compliant with the following standards: SEMI F47 IEC 61000-4-34
		Russian GOST-R Certificate no. POCC US.ME92.H00040

Category	Specification					
Protection	Drive	380/400	480V	500V	600V	690V
	AC Input Overvoltage Trip:	576V AC	576V AC			
	AC Input Undervoltage Trip:	250V AC	300V AC			
	Bus Overvoltage Trip:	815V DC	815V DC			
	Bus Undervoltage Shutoff:	200V DC	200V DC			
	Nominal Bus Voltage (Full Load):	540V DC	648V DC			
	Drive Overcurrent Trip	Calculated value, 105% of motor rated to 200% of drive rated 105% of 3 sec. rating (158...210%) 143% of 3 sec. rating (215...287%)				
	Software Overcurrent Trip:					
	Hardware Overcurrent Trip:					
	Instantaneous Current Limit:					
	Line transients:	up to 6000 volts peak per IEEE C62.41-1991				
	Control Logic Noise Immunity:	Showering arc transients up to 1500V peak				
	Power Ride-Thru:	15 milliseconds at full load				
	Logic Control Ride-Thru:	0.5 seconds minimum, 2 seconds typical				
	Ground Fault Trip:	Phase-to-ground on drive output				
	Short Circuit Trip:	Phase-to-phase on drive output				

Category	Specification				
Environment	Altitude:	1000 m (3300 ft) max. without derating			
	Maximum Surrounding Air Temperature without De-rating				
	IP20, NEMA/UL Open Type:	0...50° C (32...122° F)	Frames 2...5, All Ratings		
	IP00, NEMA/UL Open Type:	0...50° C (32...122° F)	Frames 6...7, All Ratings		
	IP20, NEMA/UL Type 1 (w/Hood):	0...40° C (32...104° F)	Frames 2...5, All Ratings		
	IP20, NEMA/UL Type 1 (w/Label):	0...40° C (32...104° F)	Frames 6...7, All Ratings		
	Flange Mount – Front:				
	IP20, NEMA/UL Open Type:	0...50° C (32...122° F)	Frames 2...5, All Ratings		
	IP00, NEMA/UL Open Type:	0...50° C (32...122° F)	Frames 6...7, All Ratings		
	Back/Heat Sink:				
	IP66, NEMA/UL Type 4X	0...40° C (32...104° F)	All Frames, All Ratings		
	Stand-alone/Wall Mount –				
	IP54, NEMA/UL Type 12	0...40° C (32...104° F)	Frames 2...5, All Ratings		
	Storage Temperature (all const.):	–40 to 70° C (–40 to 158° F)			
Atmosphere:	Important: Drive must not be installed in an area where the ambient atmosphere contains volatile or corrosive gas, vapors or dust. If the drive is not going to be installed for a period of time, it must be stored in an area where it will not be exposed to a corrosive atmosphere.				
Relative Humidity:	5...95% non-condensing				
Shock - Operating	Frame 2...6:	15 g peak for 11 ms duration (±1.0 ms)			
Shock - Packaged for Shipment	Frame 7:	10 g peak for 11 ms duration (±1.0 ms)			
	Frame 2:	381 mm (15 in) drop height			
	Frame 3...4:	330 mm (13 in) drop height			
	Frame 5:	305 mm (12 in) drop height			
	Frame 6...7:	Meets International Safe Transit Association (ISTA) test procedure 2B			
Vibration - Operating	Frame 2:	1.000 mm (0.040 in.) displacement, 2 g peak			
Vibration - Packaged for Shipment	Frame 3...5:	1.000 mm (0.040 in.) displacement, 1.5 g peak			
	Frame 6...7:	1.000 mm (0.040 in.) displacement, 1 g peak			
Sinusoidal Loose Load:	Frame 2...5:	20.0 mm (0.8 in.) peak to peak, 2...5.186 Hz; 1.1 g peak from 5.186...20 Hz			
Random Secured:	Frame 6...7	Meets ISTA 2B packaging standards			
	Frame 2...5:	<u>Frequency (Hz)</u>	<u>PSD (g²/Hz)</u>		
	1		0.00005		
	4		0.01		
	16		0.01		
	40		0.001		
	80		0.001		
	200		0.00001		
	Frame 6...7	Meets International Safe Transit Association (ISTA) test procedure 2B			
	Sound:	Frame	Fan Speed	Sound Level	Note: Sound pressure level is measured at 2 meters.
2	50 CFM	63 dB			
3	80 CFM	64 dB			
4	160 CFM	72 dB			
5	260 CFM	77 dB			
6	252 CFM	73 dB			
7	252 CFM	74 dB			
Surrounding Environment					
Pollution Degree					
Pollution Degree 1 & 2:	All enclosures acceptable.				
Pollution Degree 3 & 4:	Enclosure that meets or exceeds IP54, NEMA/UL Type 12 required.				
(See page A-5 for descriptions of each pollution degree rating.)					

Category	Specification	
Electrical	AC Input Voltage Tolerance:	See page C-1 for full power and operating range.
	Frequency Tolerance:	47-63 Hz.
	Input Phases:	Three-phase input provides full rating for all drives. Single-phase operation provides up to 50% of rated current.
	DC Input Voltage Tolerance:	-/+ 10% of Nominal Bus Voltage (above)
	Displacement Power Factor:	0.98 across entire speed range.
	Efficiency:	97.5% at rated amps, nominal line volts.
	Maximum Short Circuit Rating:	200,000 Amps RMS symmetrical.
	Actual Short Circuit Rating:	Determined by AIC rating of installed fuse/circuit breaker.
	Maximum Drive to Motor Power Ratio	Recommended not greater than 2:1 ratio.
Control	Method:	Sine coded PWM with programmable carrier frequency. Ratings apply to all drives. The drive can be supplied as 6 pulse.
	Carrier Frequency:	Default Settings: Drive Frames 2...4: 4 kHz Drive Frames 5...7: 2 kHz Settings: 2, 4, 8, 12 kHz
	Output Voltage Range:	0 to rated motor voltage
	Output Frequency Range:	0...325 Hz @ 2 kHz carrier 0...650 Hz @ 4 kHz carrier
	Frequency Accuracy Digital Input: Analog Input:	Within $\pm 0.01\%$ of set output frequency. Within $\pm 0.4\%$ of maximum output frequency.
	Frequency Control:	Speed regulation - with Slip Compensation 0.5% of base speed across 40:1 speed range 40:1 operating range
	Speed Control:	Speed regulation - without feedback 0.1% of base speed across 120:1 speed range 120:1 operating range 50 rad/sec bandwidth
		Speed regulation - with feedback 0.001% of base speed across 100:1 speed range 1000:1 operating range 190 rad/sec bandwidth
	Torque Regulation:	Torque Regulation - without feedback $\pm 5\%$, 600 rad/sec bandwidth
		Torque Regulation - with feedback $\pm 2\%$, 2500 rad/sec bandwidth
	Selectable Motor Control:	Standard V/Hz with full custom capability. Sensorless Vector with full tuning. Flux Vector with and without a feedback device. Induction and Permanent magnet motor control.
	Stop Modes:	Multiple programmable stop modes including - Ramp, Coast, DC-Brake, Ramp-to-Hold, Fast Braking, and Current Limit Stop.
	Accel/Decel:	Two independently programmable accel and decel times. Each time may be programmed from 0 to 3600 seconds in 0.1 second increments.
	S Curve Time	Adjustable from 0 to 100% of ramp time (normal duty rating).
	Intermittent Overload:	110% Overload capability for up to 1 minute 150% Overload capability for up to 3 seconds
	Current Limit Capability:	Proactive Current Limit programmable from 20 to 160% of rated output current. Independently programmable proportional and integral gain.
	Electronic Motor Overload Protection:	Class 10 protection with speed sensitive response. Complies with N.E.C. Article 430. U.L. File E59272, volume 12.

Watts Loss

Table A.A 400 Volt Ratings - Watts Loss

Frame ⁽¹⁾	kW	External Watts	Internal Watts	Total Watts
2	7.5	184	43	227
	11	261	50	311
3	15	340	67	407
	18.5	411	79	490
	22	558	91	649
4	30	751	98	849
	37	952	118	1070
5	45	934	137	1071
	55	1024	151	1175
6	75	1649	283	1932
	90	1820	266	2086
	110	2441	356	2797
	132	2727	454	3181
7	160	2863	417	3280
	200	3692	548	4240
	250	4391	713	5104

⁽¹⁾ Enclosure code N only.

Table A.B 480 Volt Ratings - Watts Loss

Frame ⁽¹⁾	Hp	External Watts	Internal Watts	Total Watts
2	10	156	46	202
	15	273	59	332
3	20	308	68	376
	25	411	82	493
	30	551	94	645
4	40	657	93	750
	50	875	115	990
5	60	878	143	1021
	75	940	154	1094
6	100	1510	264	1774
	125	1755	264	2019
	150	2276	336	2612
	200	2650	446	3096
7	250	3011	445	3456
	300	3782	565	4347
	350	4022	647	4669

⁽¹⁾ Enclosure code N only.

Pollution Degree Ratings According to EN 61800-5-1

Pollution Degree	Description
1	No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.
2	Normally, only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation is to be expected, when the drive is out of operation.
3	Conductive pollution or dry non-conductive pollution occurs, which becomes conductive due to condensation, which is to be expected.
4	The pollution generates persistent conductivity caused, for example by conductive dust or rain or snow.

Drive Enclosure Ratings

Frames	Enclosure Type (Cat. No. Position 6)	Installed Accessory Kit	Front Side Rating		Back Side/Heat Sink Rating	
			Enclosure Type	Pollution Degree	Enclosure Type	Pollution Degree
2, 3, 4, 5	N	None	IP20 NEMA/UL Open Type	1, 2	IP20 NEMA/UL Open Type	1, 2
		NEMA Type 1	IP20 NEMA/UL Type 1	1, 2	IP20 NEMA/UL Type 1	1, 2
		Flange	IP20 NEMA/UL Type 1	1, 2	IP20 NEMA/UL Type 1	1, 2
	F	None	IP20 NEMA/UL Open Type	1, 2	IP66 NEMA/UL Type 4X	1, 2, 3, 4
	G	None	IP54 NEMA/UL Type 12	1, 2, 3, 4	IP54 NEMA/UL Type 12	1, 2, 3, 4
6, 7	N	None	IP00 NEMA/UL Open Type	1, 2	IP00 NEMA/UL Open Type Kit	1, 2
		NEMA Type 1	IP20 NEMA/UL Type 1	1, 2	IP20 NEMA/UL Type 1	1, 2
		NEMA Type 4X Flange	IP00 NEMA/UL Open Type	1, 2	IP66 NEMA/UL Type 4X	1, 2, 3, 4

Communication Configurations

Typical Programmable Controller Configurations

Important: If block transfers are programmed to continuously write information to the drive, care must be taken to properly format the block transfer. If attribute 10 is selected for the block transfer, values will be written only to RAM and will not be saved by the drive. This is the preferred attribute for continuous transfers. If attribute 9 is selected, each program scan will complete a write to the drives non-volatile memory (EEPROM). Since the EEPROM has a fixed number of allowed writes, continuous block transfers will quickly damage the EEPROM. Do Not assign attribute 9 to continuous block transfers. Refer to the individual communications adapter User Manual for additional details.

Table A.C Logic Command Word

- (1) A Not Stop condition (logic bit 0 = 0) must first be present before a 1 = Start condition will start the drive.
- (2) A Not Stop condition (logic bit 0 = 0) must first be present before a 1 = Jog 1/Jog 2 condition will jog the drive. A transition to a "0" will stop the drive.
- (3) To perform this command, the value must switch from "0" to "1."
- (4) A Not Stop condition (logic bit 0 = 0) must first be present before a 1 = Run condition will run the drive. A transition to a "0" will stop the drive.

Table A.D Logic Status Word

[illegible]

Output Devices

Common mode cores are internal to the drive. For information on output devices such as output contactors, cable terminators and output reactors refer to the *PowerFlex 750 Reference Manual*.

Drive, Fuse & Circuit Breaker Ratings

[Table A.F](#) provides drive ratings (including continuous, 1 minute and peak⁽¹⁾) and recommended AC line input fuse and circuit breaker information. Sizes listed are the recommended sizes based on 40 degree C and the U.S. N.E.C. Other country, state or local codes may require different ratings.

Refer to which describes input device requirements based on physical installation choice.

Table A.E Input Device Requirements

Frames	Enclosure Catalog Code	Enclosure Type	Installation Type	UL Certification Required	UL Certification Not Required
2, 3, 4, 5	N	IP20 NEMA/UL Open Type	Installed in a non-ventilated cabinet. Heat sink is inside or outside of cabinet.	All devices in Table A.F are acceptable.	All devices in Table A.F are acceptable.
	F	Flange			
	N	IP20 NEMA/UL Open Type	Installed outside of cabinet using NEMA Type 1 kit or in a ventilated cabinet.	Devices in Table A.F excluding time delay fuses and maximum value for non-time delay fuses.	
	F	Flange			
	G	IP54 NEMA/UL Type 12	Installed inside or outside of any cabinet.	All devices in Table A.F are acceptable.	
6, 7	N	IP00 NEMA/UL Open Type	Installed in any cabinet. Heat sink is inside or outside of cabinet.	All devices in Table A.F are acceptable.	
			Installed outside of cabinet using NEMA Type 1 kit.		

Fusing

If fuses are chosen as the desired protection method, refer to the recommended types listed below. If available amp ratings do not match the tables provided, the closest fuse rating that exceeds the drive rating should be chosen.

- IEC – BS88 (British Standard) Parts 1 & 2⁽²⁾, EN60269-1, Parts 1 & 2, type gG or equivalent should be used.
- UL – UL Class T, J or L must be used.

Circuit Breakers

The “non-fuse” listings in the following tables include both circuit breakers (inverse time or instantaneous trip). **If one of these is chosen as the desired protection method**, the following requirements apply.

- IEC and UL – Both types of devices are acceptable for IEC and UL installations.

⁽¹⁾ Peak duration is 2 Sec. for 755 and 3 Sec. for 755

⁽²⁾ Typical designations include, but may not be limited to the following: Parts 1 & 2: AC, AD, BC, BD, CD, DD, ED, EFS, EF, FF, FG, GF, GG, GH.

Table A.F AC Input Protection Devices

		Drive Sized For Normal Duty		Drive Sized For Heavy Duty		Input Quantities		AC Input Protection Devices					140M Motor Starter with Adjustable Current Range ⁽⁷⁾⁽⁸⁾		Input Quantities		DC Input Protection							
Applied Rating ⁽¹⁾	Continuous Output Amps	Catalog Number		Output Overload Amps		Continuous AC Input		Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker Max Size ⁽⁵⁾			Motor Circuit Protector ⁽⁶⁾		Continuous DC Input kW	Non-Time Delay Fuse Amps						
		(x = For G)	60 sec	3 sec	(x = F or G)	60 sec	3 sec	kVA	Amps	Min ⁽³⁾	Max ⁽⁴⁾	Min ⁽³⁾	Max ⁽⁴⁾	Size ⁽⁵⁾										
		400 Volt AC Input																						
5.5 kW	2	11.5				20x...C015	17.3	23.1	7.4	10.7	15	25	15	45	15	M-C2E-C16	M-D8E-C16	M-F8E-C16	6.8	12.6	HSJ20			
7.5 kW	2	15.4				20x...C015	16.9	23.1	10.1	14.6	20	30	20	60	20	M-C2E-C20	M-D8E-C20	M-F8E-C20	9.2	17.0	HSJ25			
11 kW	2	22				20x...C022	24.2	33.0	14.6	21.1	30	45	30	80	30	M-C2E-C25	M-D8E-C25	M-F8E-C25	13.3	24.6	HSJ40			
15 kW	3	30				20x...C030	33.0	45.0	19.9	28.7	40	60	40	120	40		M-F8E-C32		18.1	33.6	HSJ50			
18.5 kW	3	37				20x...C037	40.7	55.5	24.5	35.4	45	80	45	125	45		M-F8E-C45		22.3	41.4	HSJ70			
22 kW	3	43				20x...C043	47.3	64.5	28.5	41.2	55	90	55	150	60				26.0	48.1	HSJ90			
30 kW	4	60				20x...C060	66.0	90.0	40.0	57.4	75	125	75	225	180	100			36.2	67.1	HSJ100			
37 kW	4	72				20x...C072	79.2	108.0	48.9	70.5	90	150	90	275	200	100			44.5	82.4	HSJ125			
45 kW	5	85				20x...C085	93.5	127.5	57.7	83.3	110	175	110	325	250	150			52.5	97.3	HSJ150			
55 kW	5	104				20x...C104	114.4	156.0	71.3	102.9	130	225	130	400	300	150			64.9	120.2	HSJ175			
75 kW	6	140				20x...C140	154.0	210.0	95.0	137.2	175	300	175	550	400	250			86.5	160.3	HSJ250			
90 kW	6	170				20x...C170	187.0	255.0	115.4	166.5	225	375	225	600	500	250			105.1	194.6	HSJ350			
110 kW	6	205				20x...C205	225.5	307.5	139.1	200.8	275	450	275	600	600	400			126.7	234.7	HSJ350			
132 kW	6	260				20x...C260	286.0	390.0	176.5	254.7	325	575	325	750	700	400			160.7	297.7	HSJ400			
160 kW	7	302				20x...C302	332.2	453.0	205.0	295.9	400	675	400	900	900	600			186.7	345.7	Bussman 170M608			
200 kW	7	367				20x...C367	403.7	550.5	249.1	359.5	475	800	475	1000	1100	600			226.9	420.2	Bussman 170M6612			
250 kW	7	456				20x...C456	501.6	684.0	309.5	446.7	600	1000	600	1800	1300	600			281.9	522.0	Bussman 170M6613			
650 Volt DC Input																								
7.5 Hp	2	11				20x...D011			7.9	9.5	15	20	15	40	40	15	M-C2E-C16	M-D8E-C16	M-F8E-C16	CMN-2500	7.2	11.1	HSJ20	
10 Hp	2	14				20x...D014	15.4	21.0	10.4	12.5	17.5	30	17.5	55	50	20	M-C2E-C16	M-D8E-C16	M-F8E-C16	CMN-4000	9.5	14.7	HSJ30	
15 Hp	2	22				20x...D022	24.2	33.0	16.6	19.9	30	50	30	80	80	30	M-C2E-C25	M-D8E-C25	M-F8E-C25	CMN-4000	15.1	23.3	HSJ40	
20 Hp	3	27				20x...D027	29.7	40.5	20.6	24.8	35	60	35	100	100	50			M-F8E-C32	CMN-4000	18.8	28.9	HSJ50	
25 Hp	3	34				20x...D034	37.4	51.0	20x...D040	51.0	61.2	25.9	31.2	45	125	100	50			M-F8E-C45	CMN-6300	23.6	36.4	HSJ60
30 Hp	3	40				20x...D040	44.0	60.0	20x...D052	60.0	78.0	30.5	36.7	50	150	120	50			M-F8E-C45	CMN-9000	27.8	42.9	HSJ80
40 Hp	4	52				20x...D052	57.2	78.0	20x...D065	78.0	97.5	38.7	47.7	65	200	150	70				CMN-9000	36.1	55.7	HSJ90
50 Hp	4	65				20x...D065	71.5	97.5	20x...D077	97.5	117.0	49.6	59.6	90	250	175	100				CMN-9000	45.1	69.7	HSJ100
60 Hp	5	77				20x...D077	84.7	115.5	20x...D096	115.5	144.0	60.1	72.3	100	300	225	100					54.7	84.5	HSJ150
75 Hp	5	96				20x...D096	105.6	144.0	20x...D125	144.0	187.5	74.9	90.1	125	375	275	125					68.3	105.3	HSJ175
100 Hp	6	125				20x...D125	137.5	187.5	20x...D156	187.5	234.0	97.6	117.4	175	500	375	250					88.9	137.1	HSJ200
125 Hp	6	156				20x...D156	171.6	234.0	20x...D186	234.0	280.8	121.8	146.5	200	600	450	250					110.9	171.2	HSJ300
150 Hp	6	186				20x...D186	204.6	279.0	20x...D248	279.0	372.0	145.2	174.6	250	600	550	250					132.2	204.1	HSJ400
200 Hp	6	248				20x...D248	272.8	372.0	20x...D302	372.0	453.0	193.6	232.8	325	700	700	400					176.3	272.1	HSJ400
250 Hp	7	302				20x...D302	332.2	453.0	20x...D361	453.0	543.6	235.7	283.5	400	900	900	600					214.7	331.3	Bussman 170M608
300 Hp	7	361				20x...D361	397.1	541.5	20x...D415	541.5	649.8	281.8	338.9	475	1000	1000	600					256.6	396.1	Bussman 170M6612
350 Hp	7	415				20x...D415	456.5	622.5				323.9	389.6	525	1200	1200	600					295.0	455.3	Bussman 170M6612

Notes:

- "Applied Rating" refers to the motor that will be connected to the drive. For example, a "C015 drive" can be used in Normal Duty mode on a 5.5 kW motor, or in Heavy Duty mode on a 7.5 kW motor. The drive can be programmed for either mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current with respect to Heavy Duty mode. See parameter 306 [Duty Rating].
- Enclosure code N only.
- Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.
- Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings shown are maximum.
- Circuit Breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings shown are maximum.
- Recommended Motor circuit protector - Instantaneous trip circuit breaker. The trip setting should be set to the input current of the drive and should be sized for the continuous current of the system.
- Bulletin 140M with adjustable current range should have the current trip set to the minimum range that the device will not trip.
- Manual Self-Protected (Type E) Combination Motor Controller. 480Y/277V and 600Y/347V AC Input.

Dimensions

Figure A.1 PowerFlex 755, Frame 2, Open Type

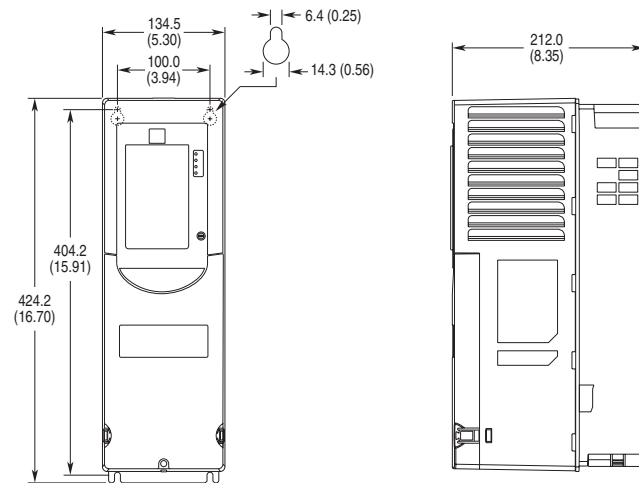


Figure A.2 PowerFlex 755, Frame 2, NEMA/UL Type 4X

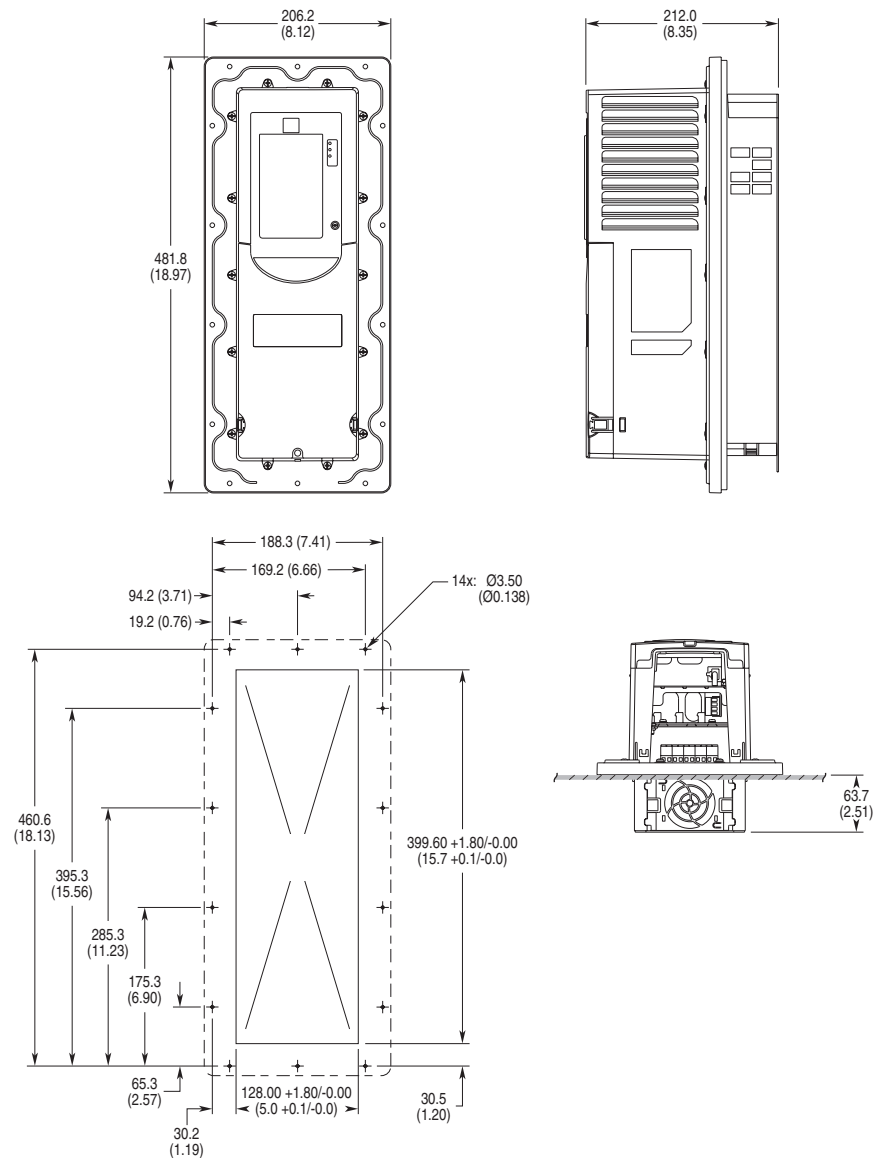


Figure A.3 PowerFlex 755, Frame 2, NEMA/UL Type 12

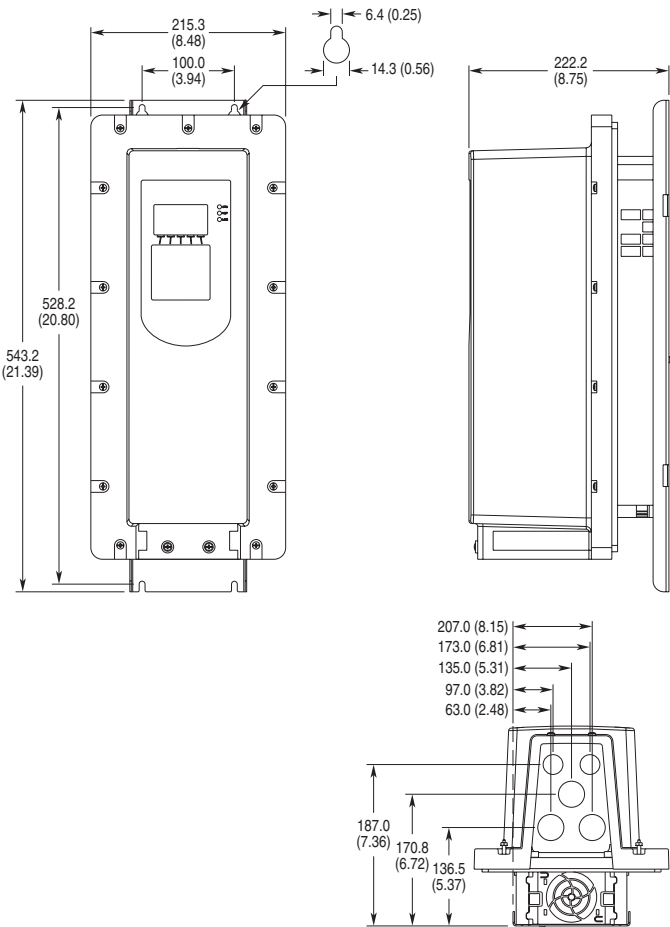


Figure A.4 PowerFlex 755, Frame 3, Type Open

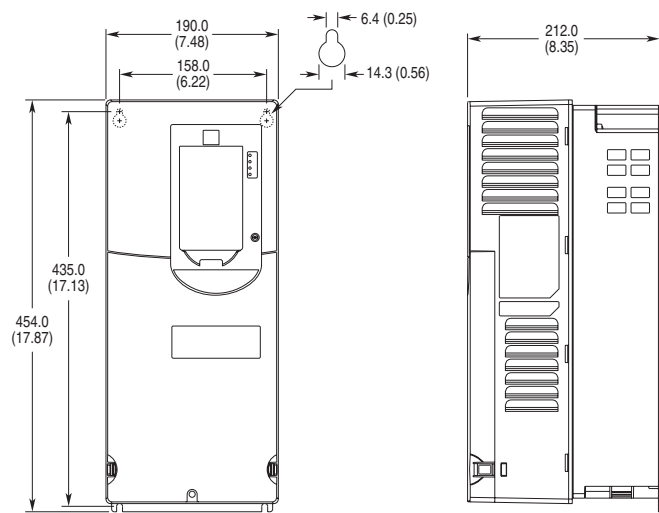


Figure A.5 PowerFlex 755, Frame 3, NEMA/UL Type 4X

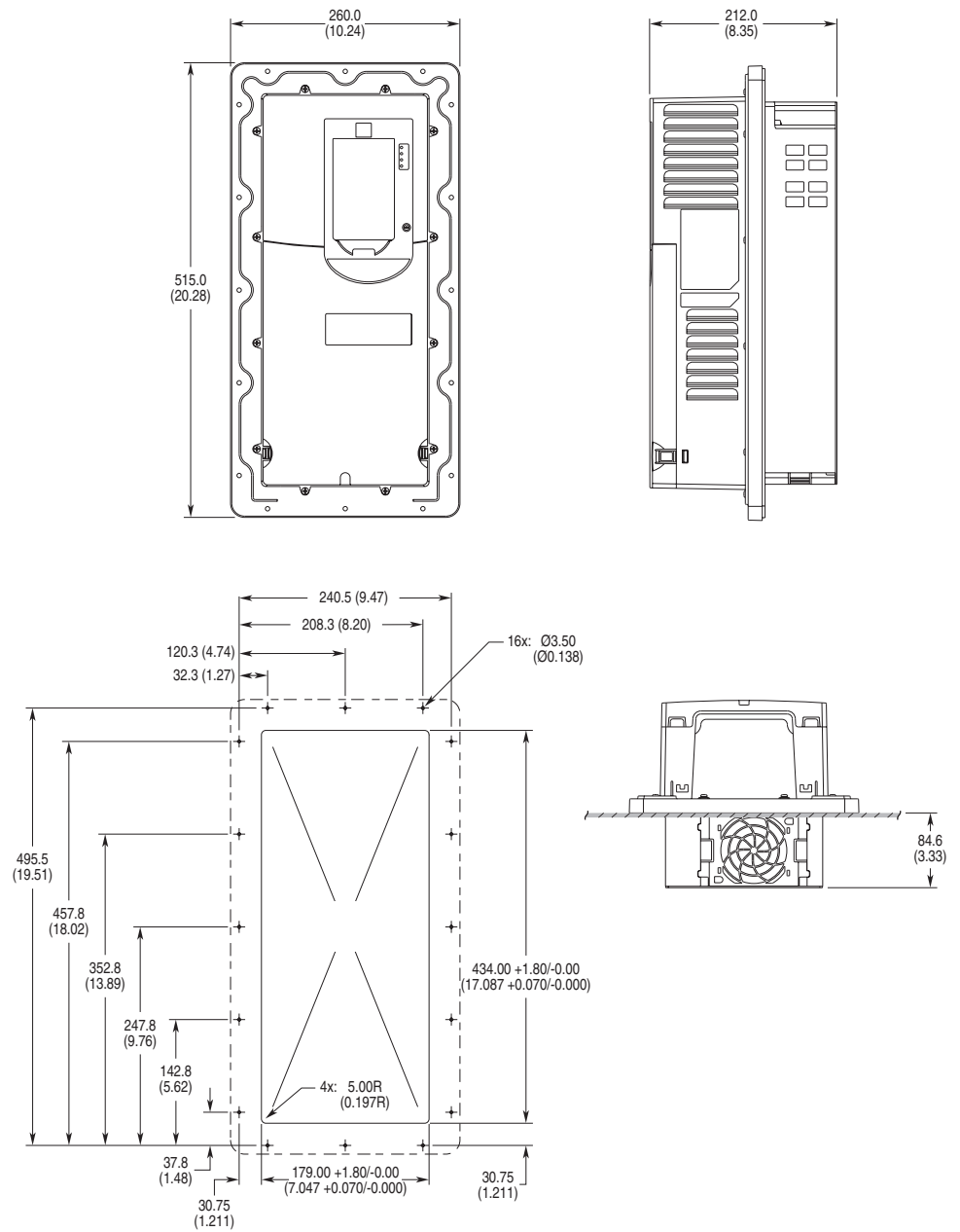


Figure A.6 PowerFlex 755, Frame 3, NEMA/UL Type 12

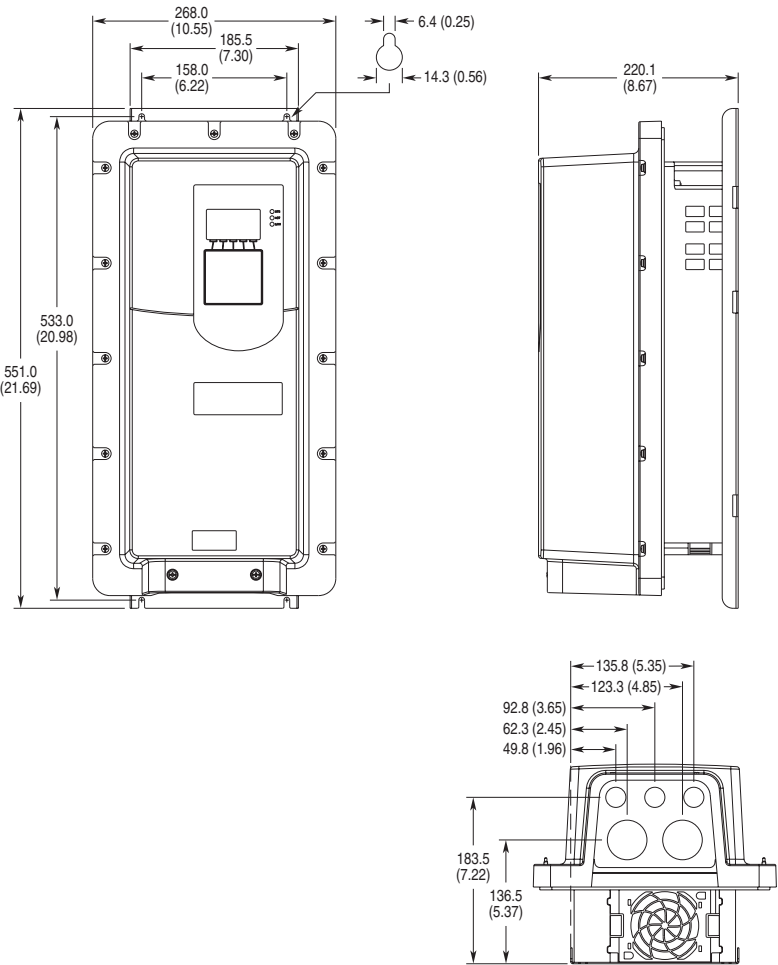


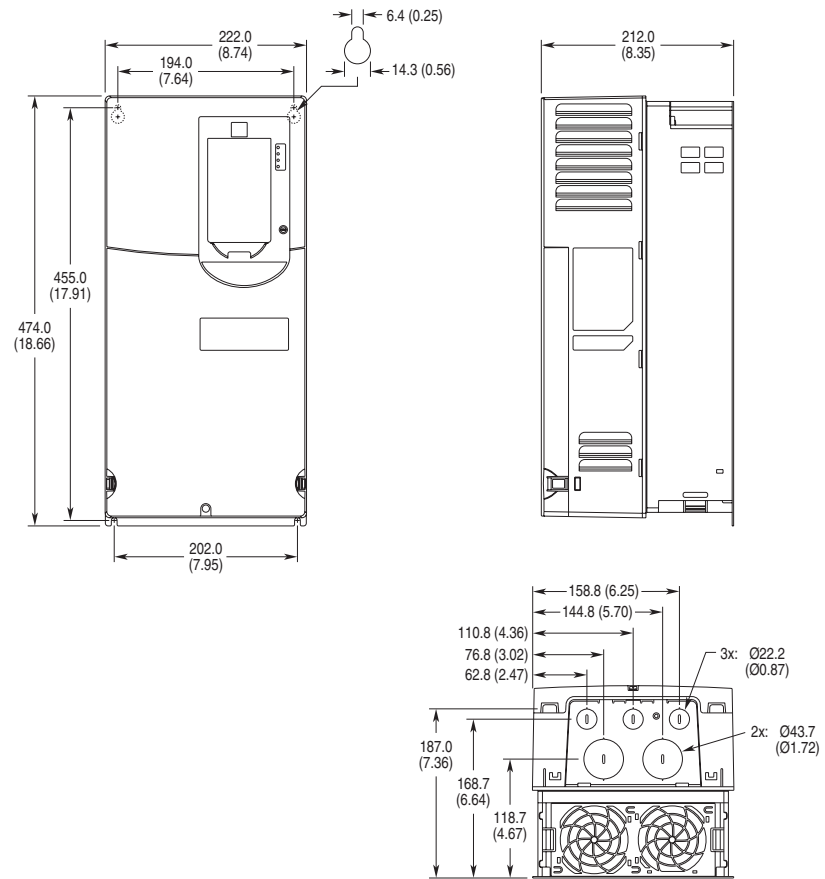
Figure A.7 PowerFlex 755, Frame 4, Type Open

Figure A.8 PowerFlex 755, Frame 4, NEMA/UL Type 4X

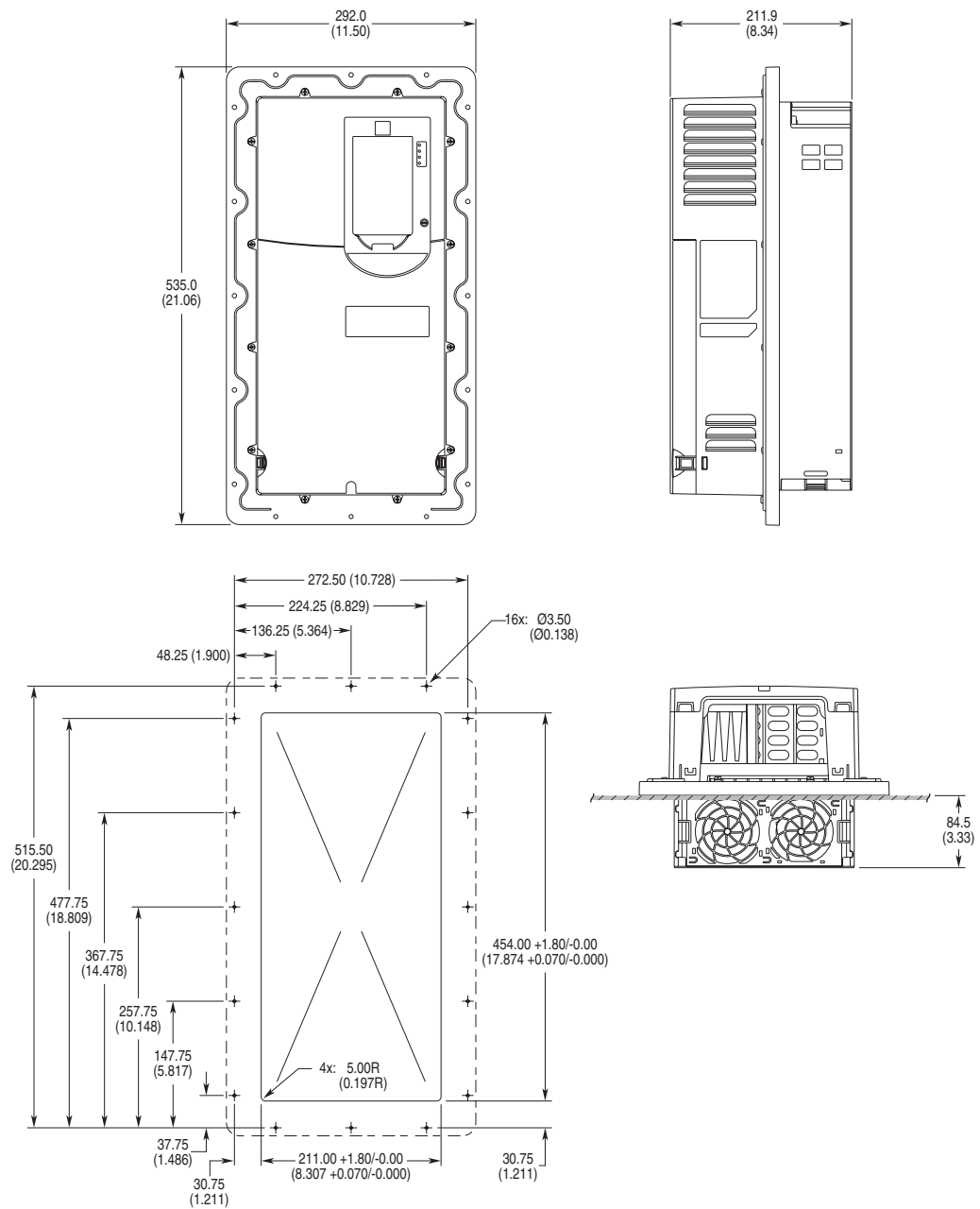


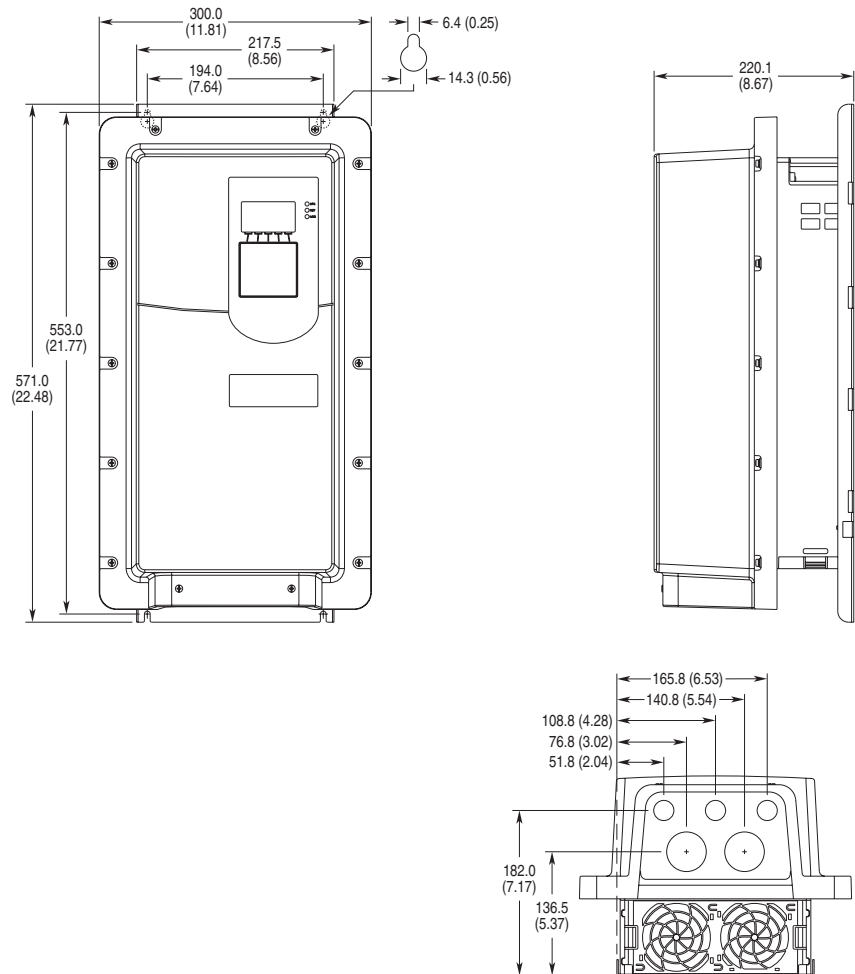
Figure A.9 PowerFlex 755, Frame 4, NEMA/UL Type 12

Figure A.10 PowerFlex 755, Frame 5, Type Open

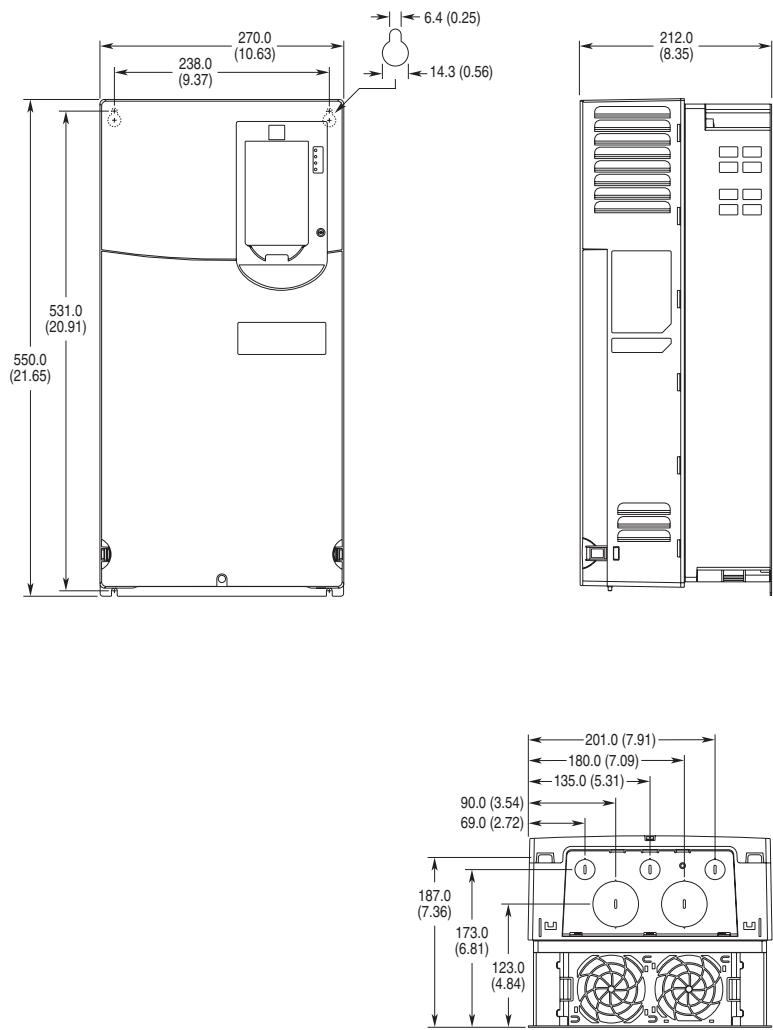


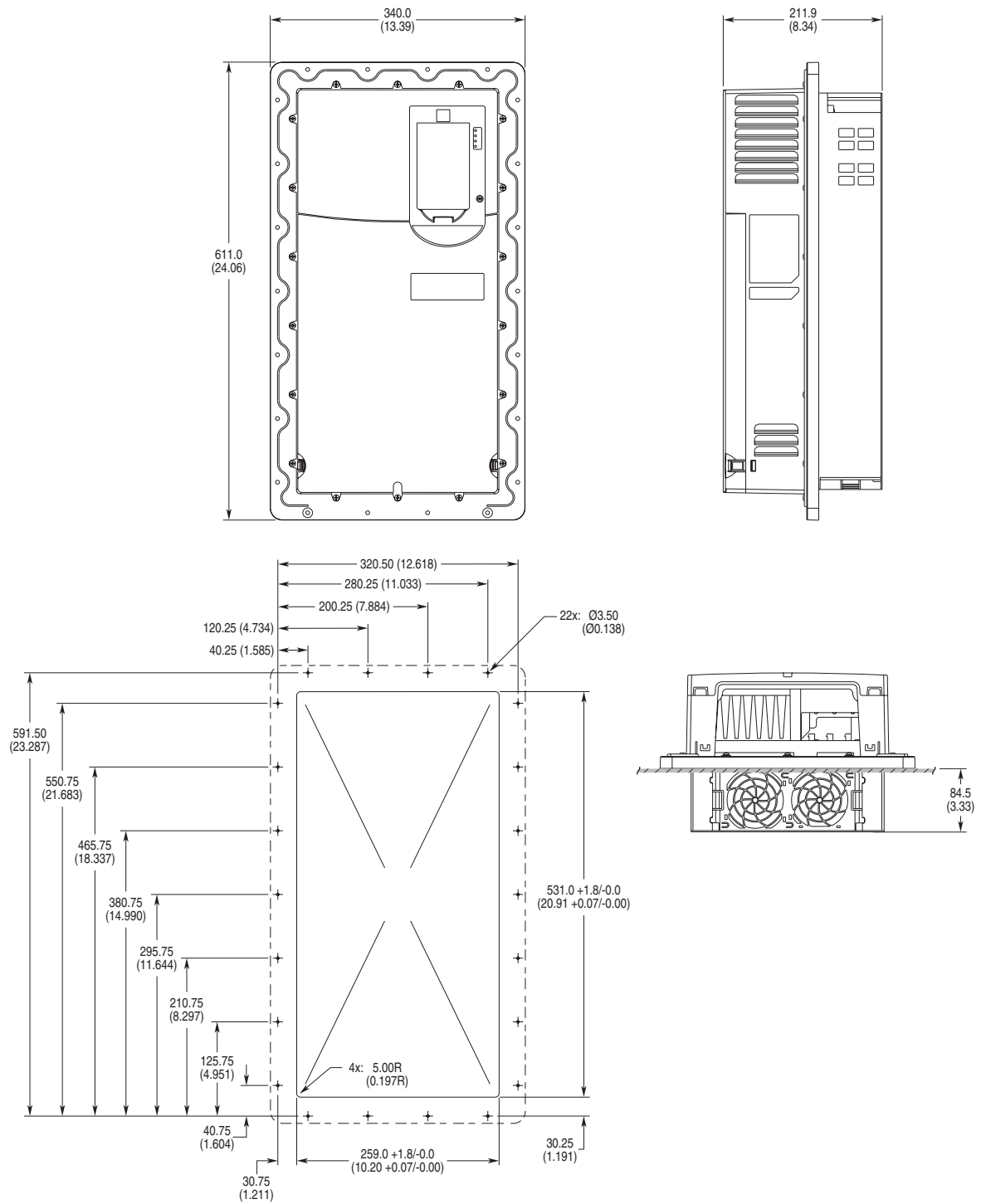
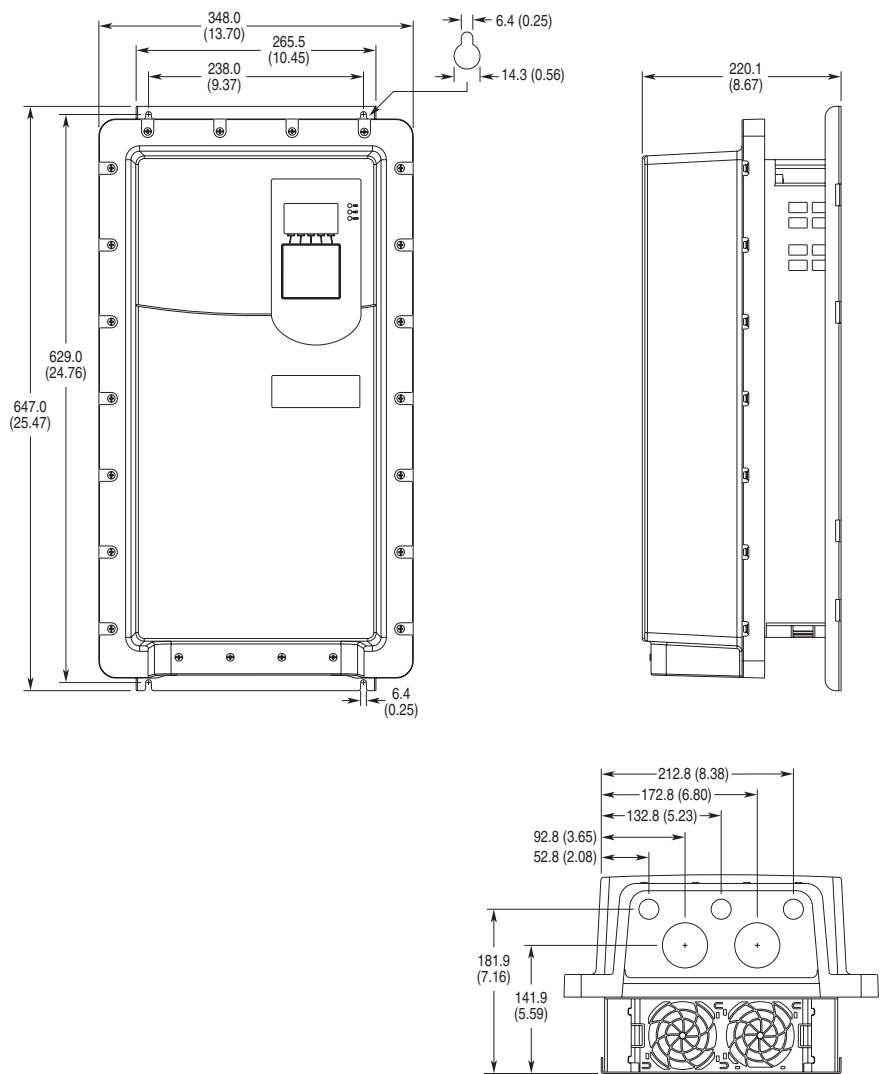
Figure A.11 PowerFlex 755, Frame 5, NEMA/UL Type 4X

Figure A.12 PowerFlex 755, Frame 5, NEMA/UL Type 12



[illegible]

Figure A.14 PowerFlex 755, Frame 6, NEMA/UL Type 4X

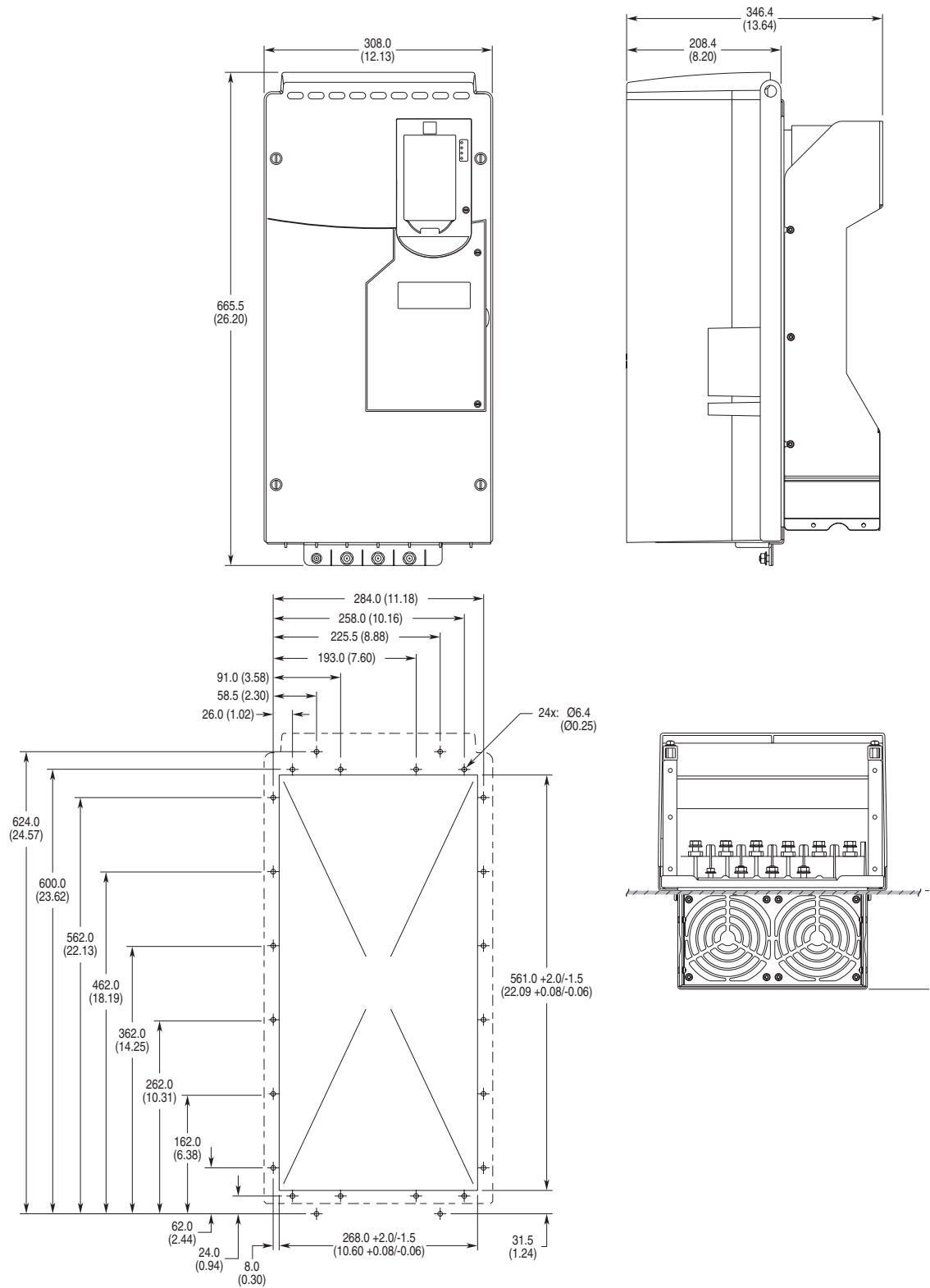


Figure A.15 PowerFlex 755, Frame 7, Type Open

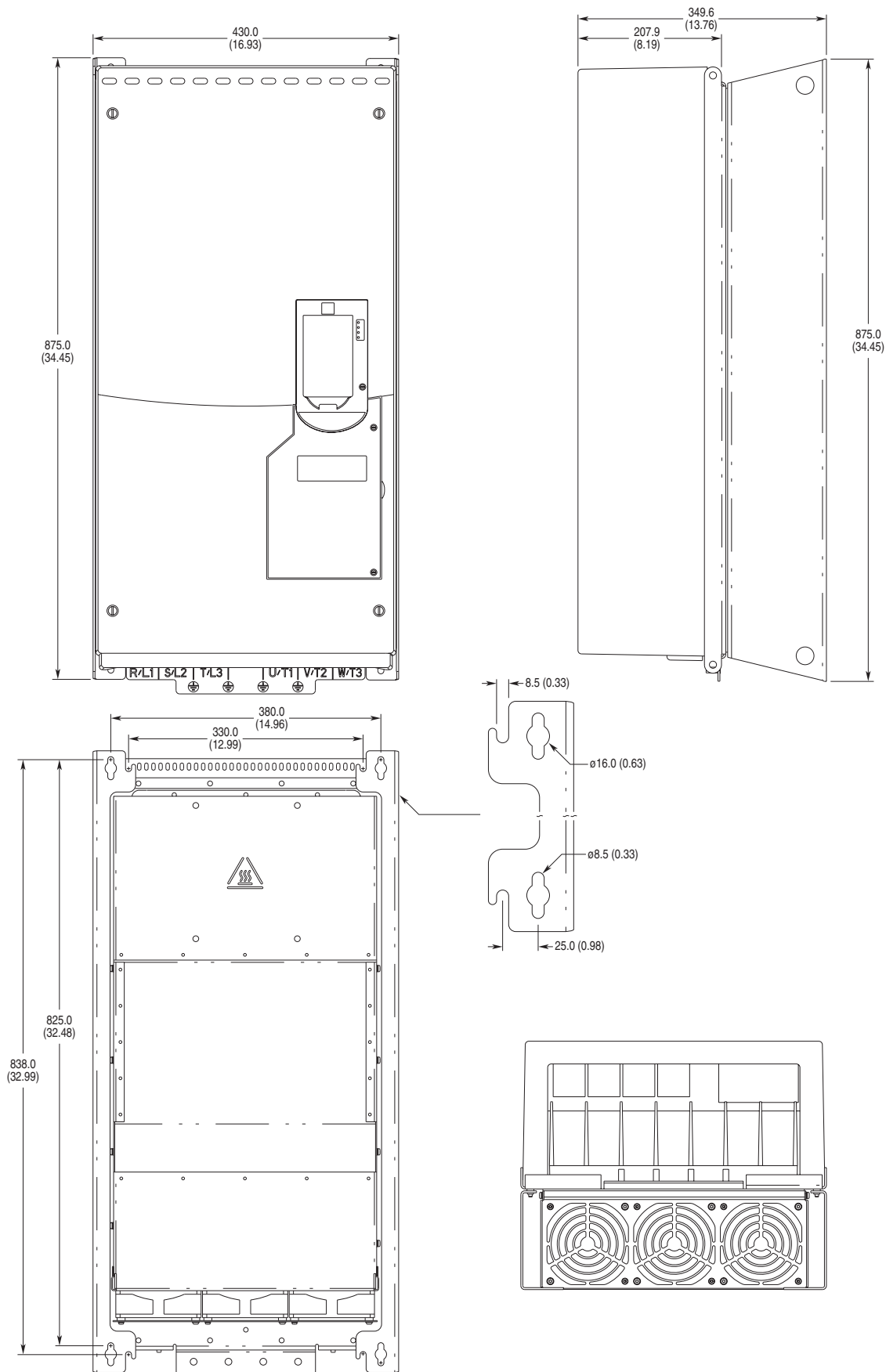
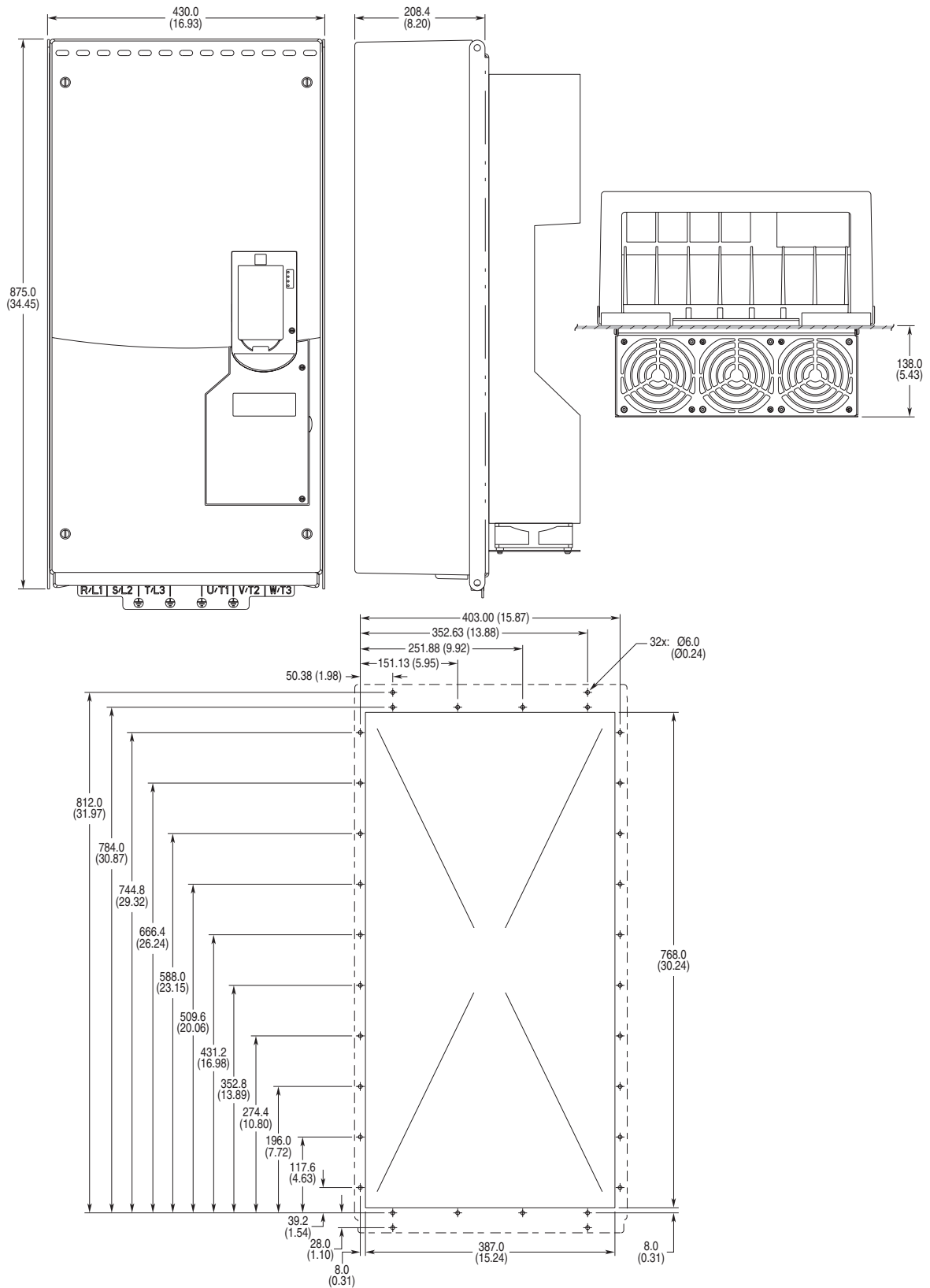


Figure A.16 PowerFlex 755, Frame 7, NEMA/UL Type 4X



Control Block Diagrams

List of Control Block Diagrams

Flow diagrams on the following pages illustrate the drives control algorithms.

For Information on ...	See Page...
Flux Vector Overview	B-3
VF, SV Overview	B-4
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Speed Control - Reference (2)	B-8
Speed Control - Reference (3)	B-9
Speed Control - Reference (4)	B-10
Speed Control - Reference (5)	B-11
Speed Control - Regulator (FOC)	B-12
Position Control - Reference	B-13
Position Control - Regulator	B-14
Position Control - Aux Function	B-15
Position Control - Phase Locked Loop	B-16
Position Control - Position CAM	B-17
Position Control - Profiler/Indexer	B-18
Position Control - Homing	B-19
Torque Control - Overview	B-20
Torque Control - Reference Scale & Trim	B-21
Torque Control - Torque	B-22
Torque Control - Current	B-23
Torque Control - Inertia Adaption	B-24
Torque Control - Load Observer / Estimator	B-25
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Process Control (2)	B-27
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Control Logic	B-31
Inverter Overload IT	B-32
Diagnostic Tools	B-33

Diagram Conventions and Definitions

Definitions of the Per Unit system:
1.0 PU Position = Distance traveled / 1sec at Base Spd
1.0 PU Speed = Base Speed of the Motor
1.0 PU Torque = Base Torque of the Motor

Symbol Legend:

Drive Parameters	Option Module Parameters	
		Read Only Parameter
		Read / Write Parameter
		Read Only Parameter with Bit Enumeration
		Read / Write Parameter with Bit Enumeration
		Provides additional information

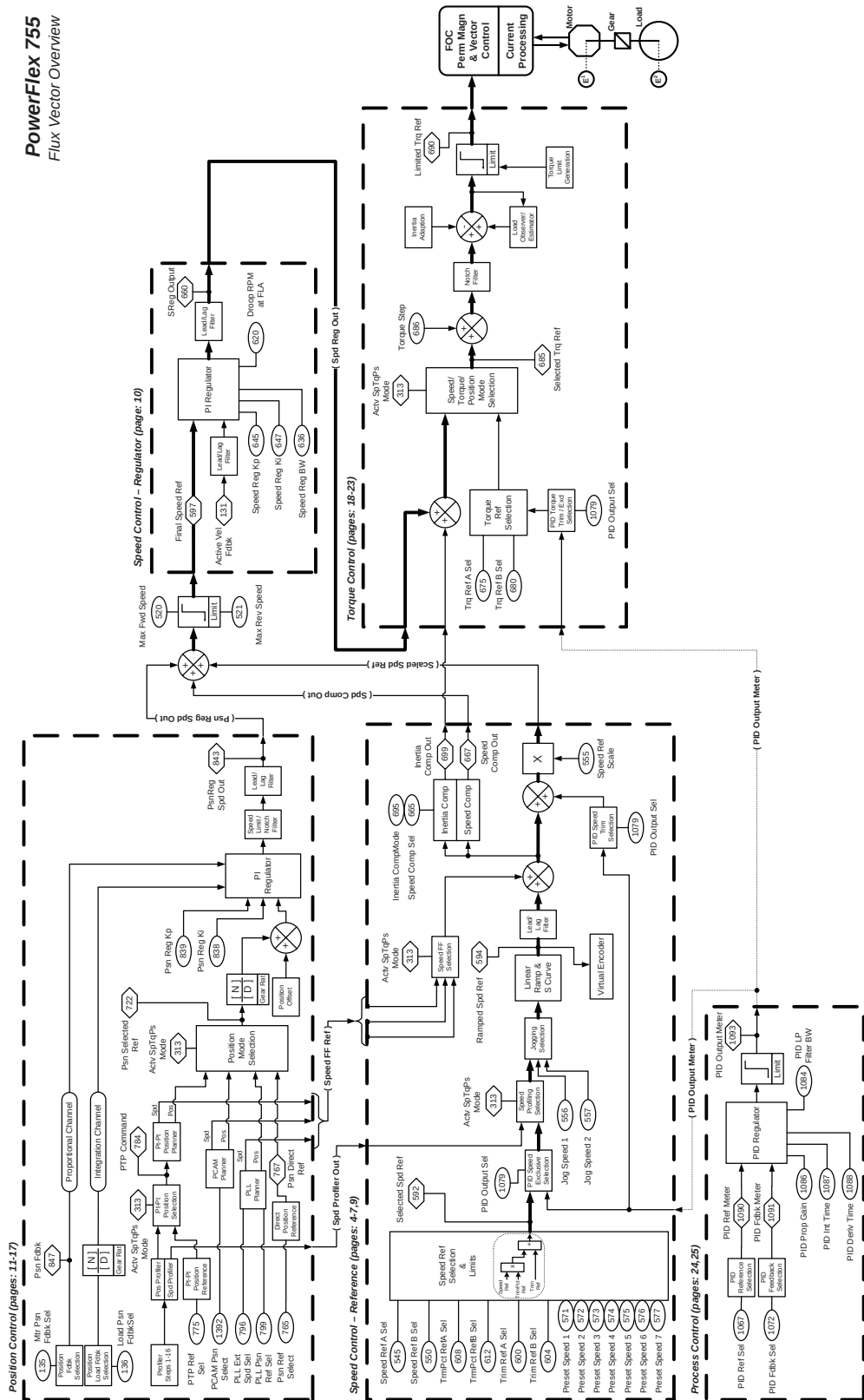
() = Enumerated Parameter
[] = Page and Coordinate
ex. 3A2 = pg 3, Column A, Row 2
[] = Constant value
'd' = Prefix refers to Diagnostic Item Number
ex. d33 = Diagnostic Item 33

* Notes, Important:

(1) These diagrams are for reference only and may not accurately reflect all logical control signals; actual functionality is implied by the approximated diagrams. Accuracy of these diagrams is not guaranteed.

PowerFlex 755

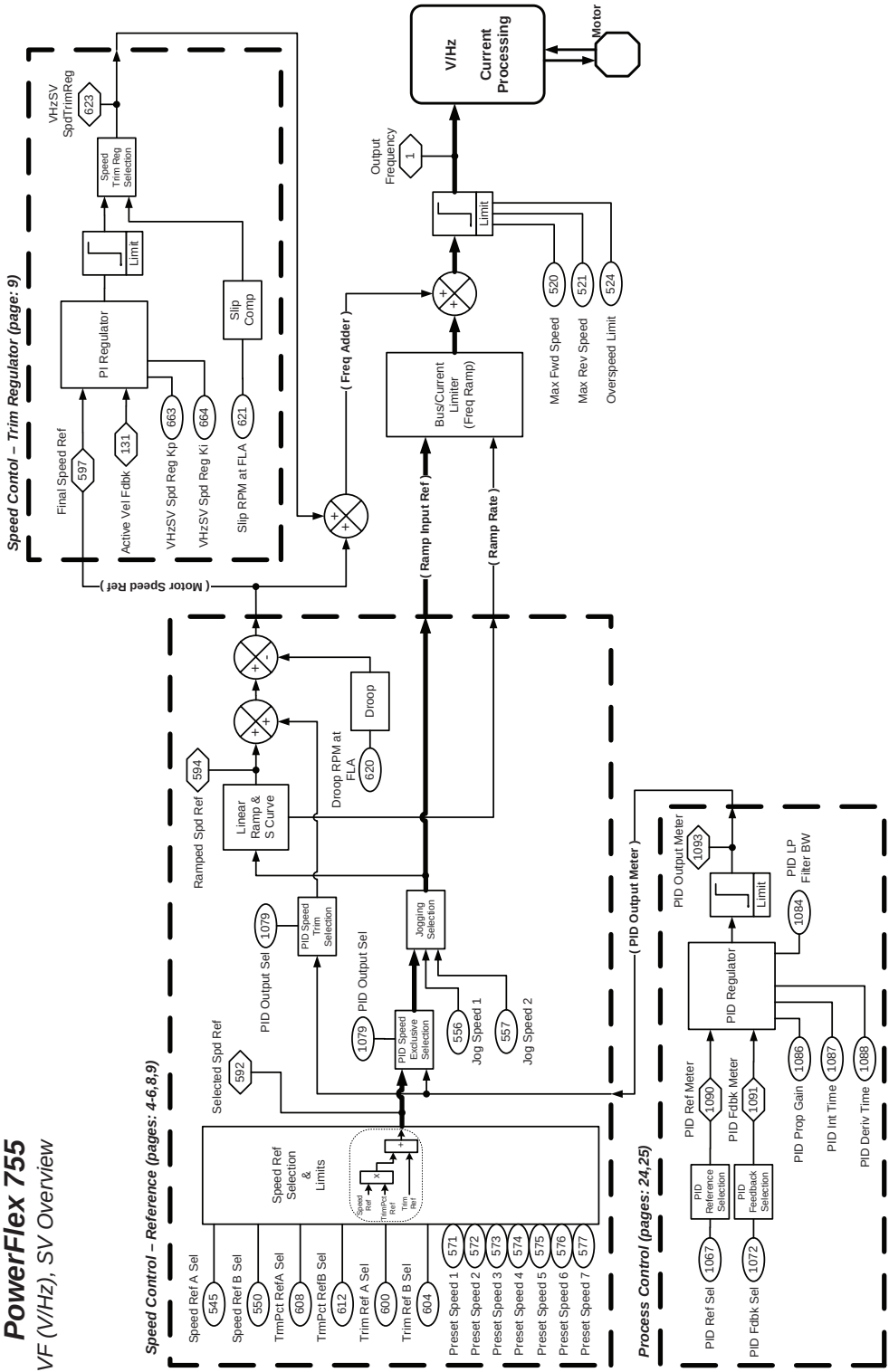
Flux Vector Overview



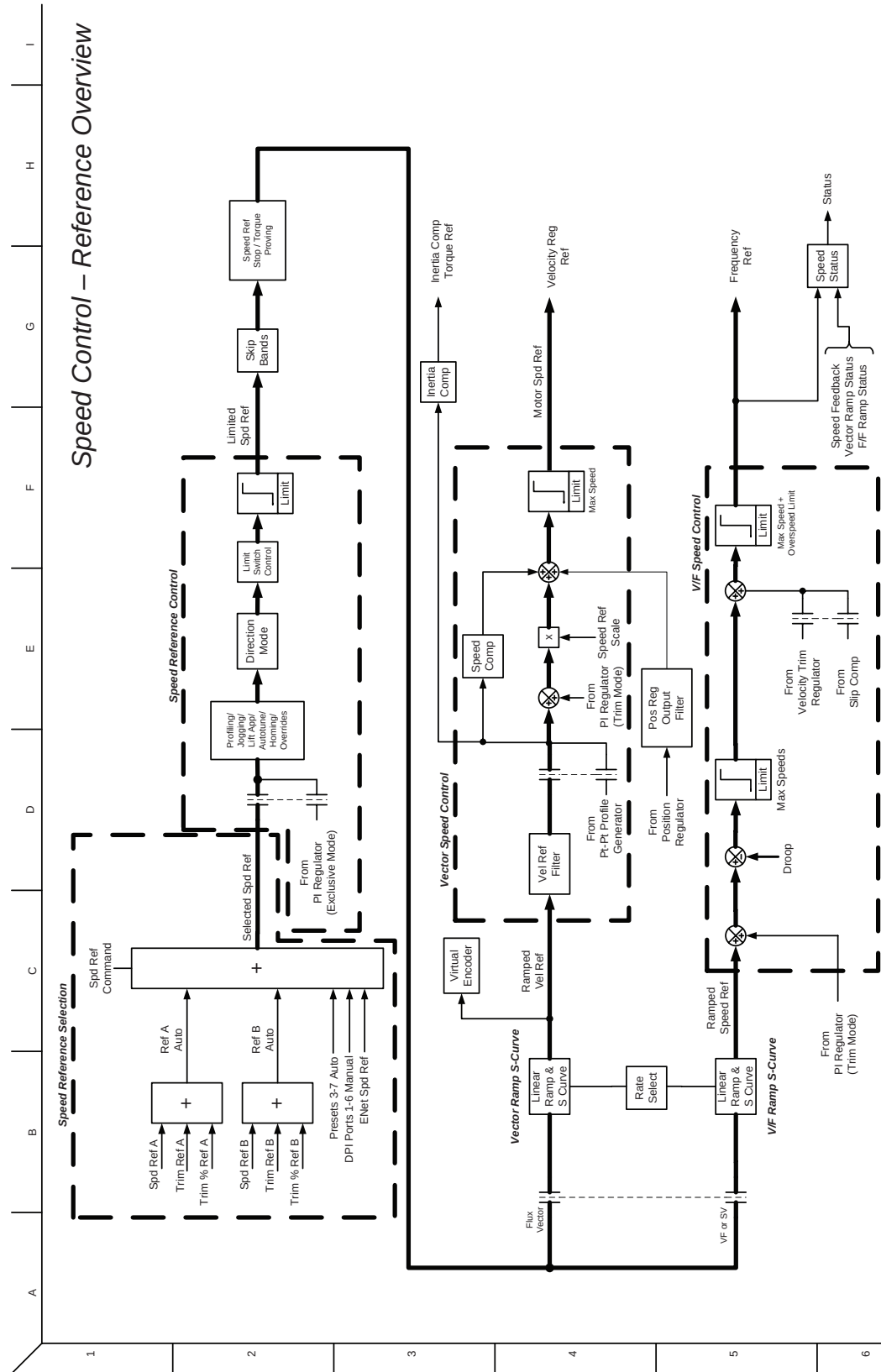
Overview - FV

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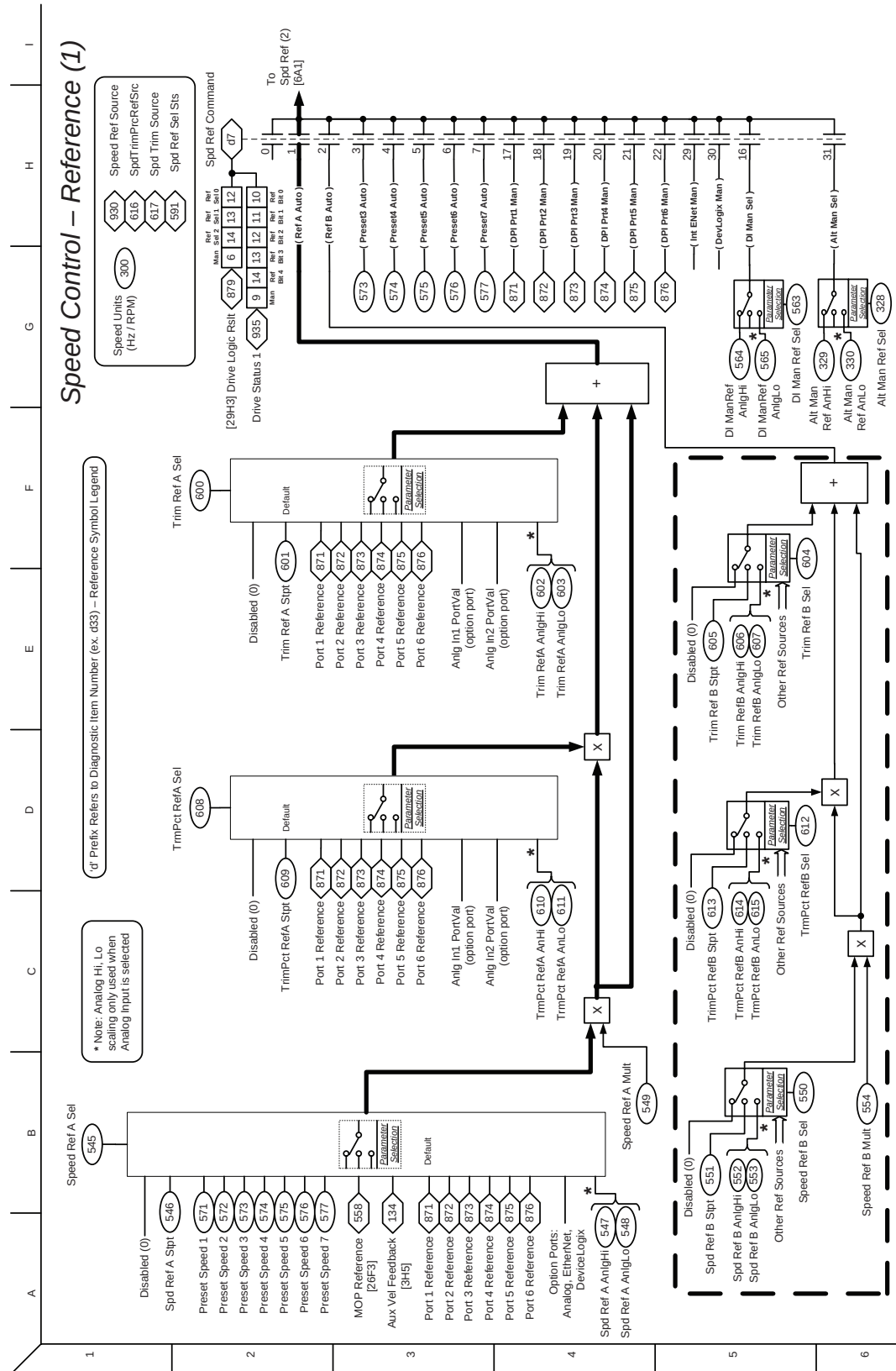
PowerFlex 755
VF (V/Hz), SV Overview

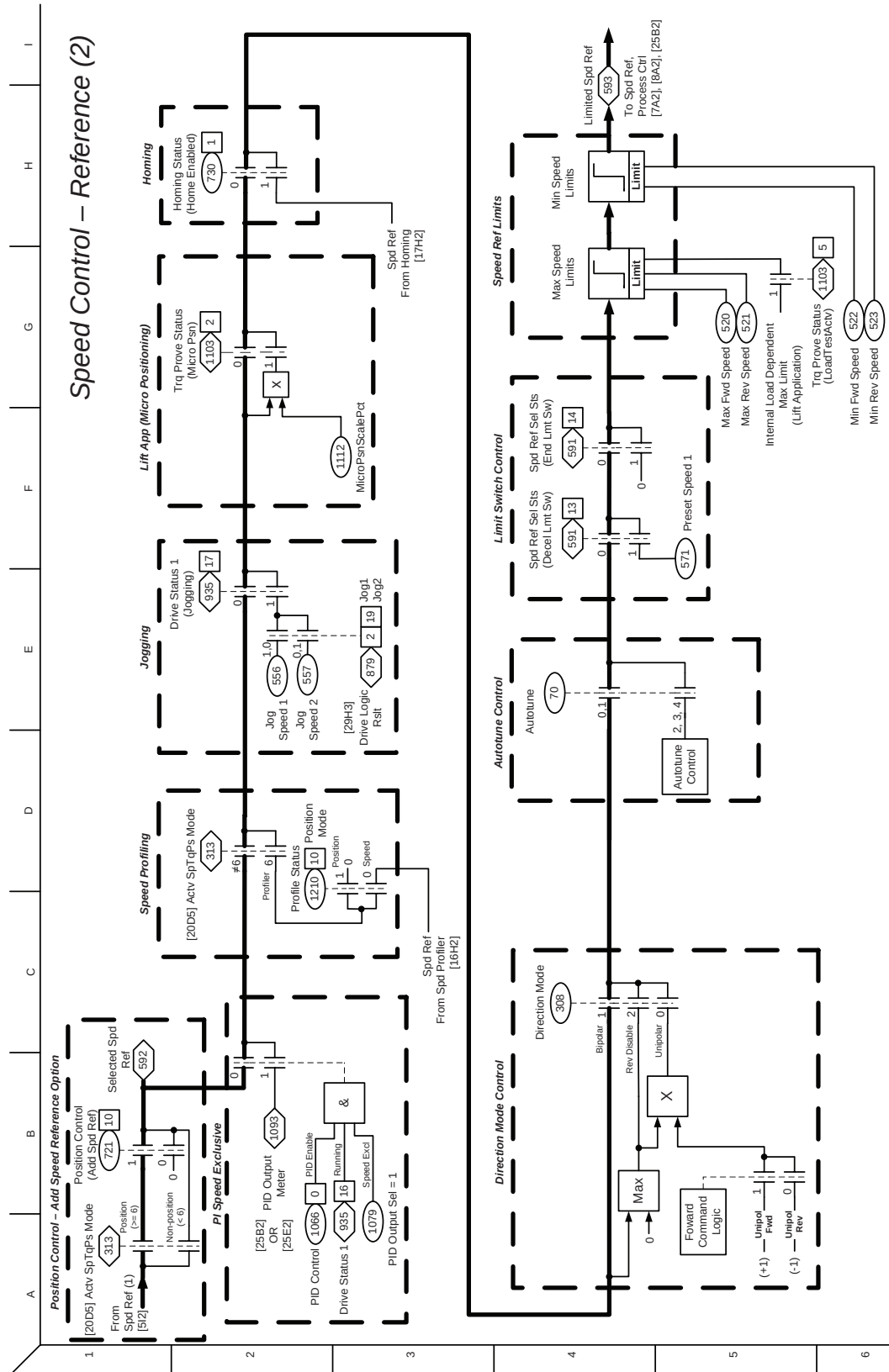






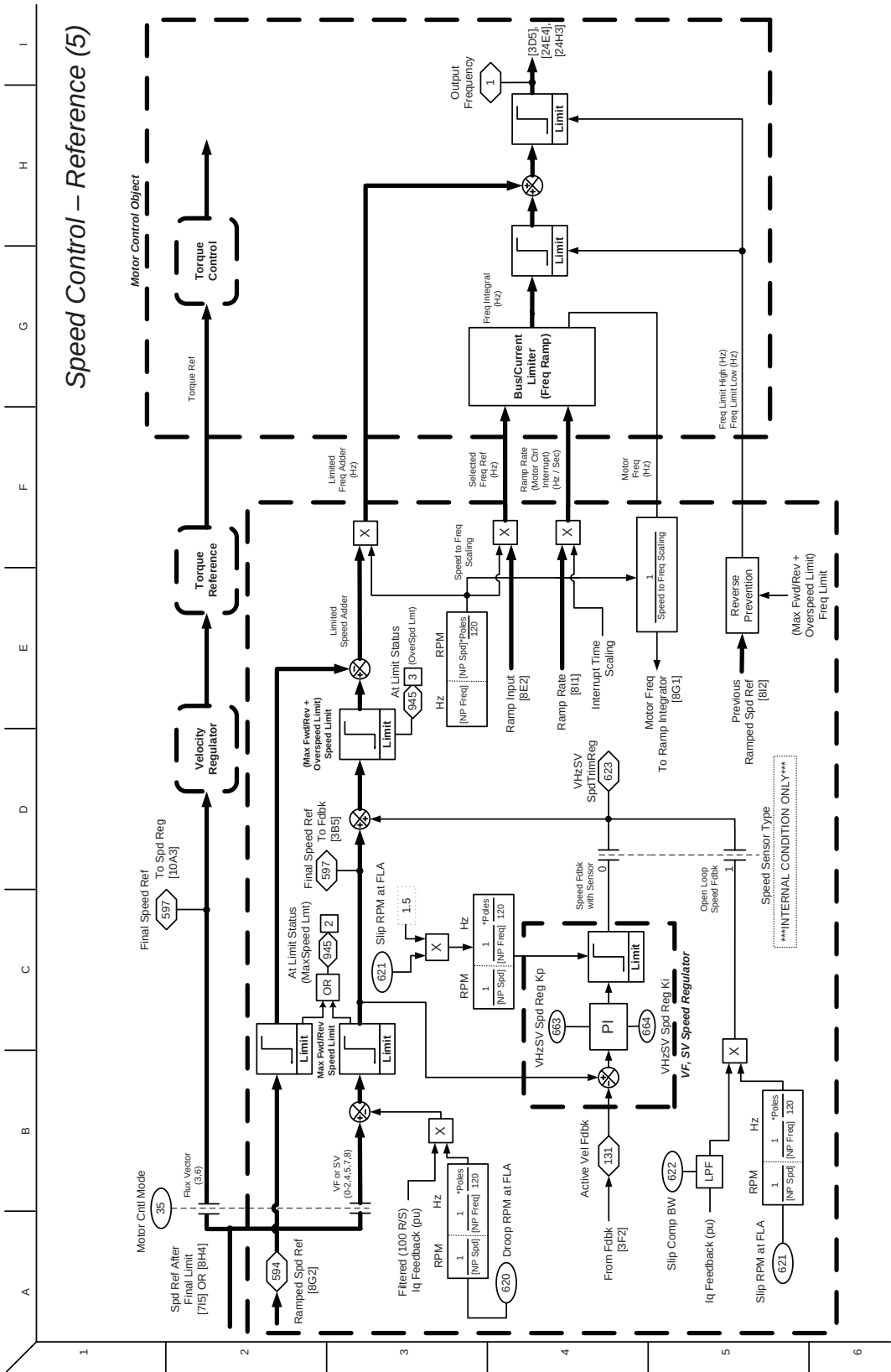
Speed Control – Reference (1)





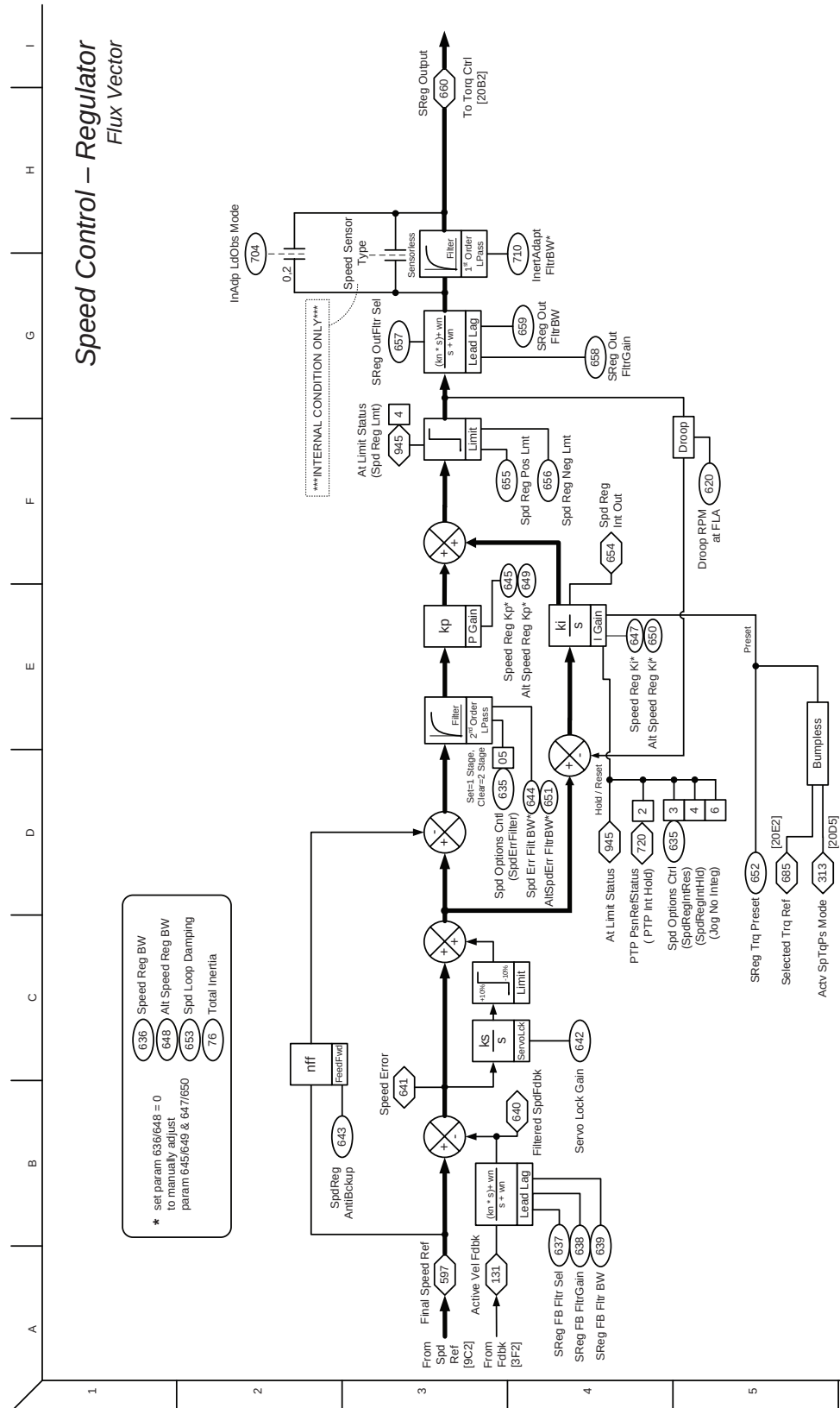




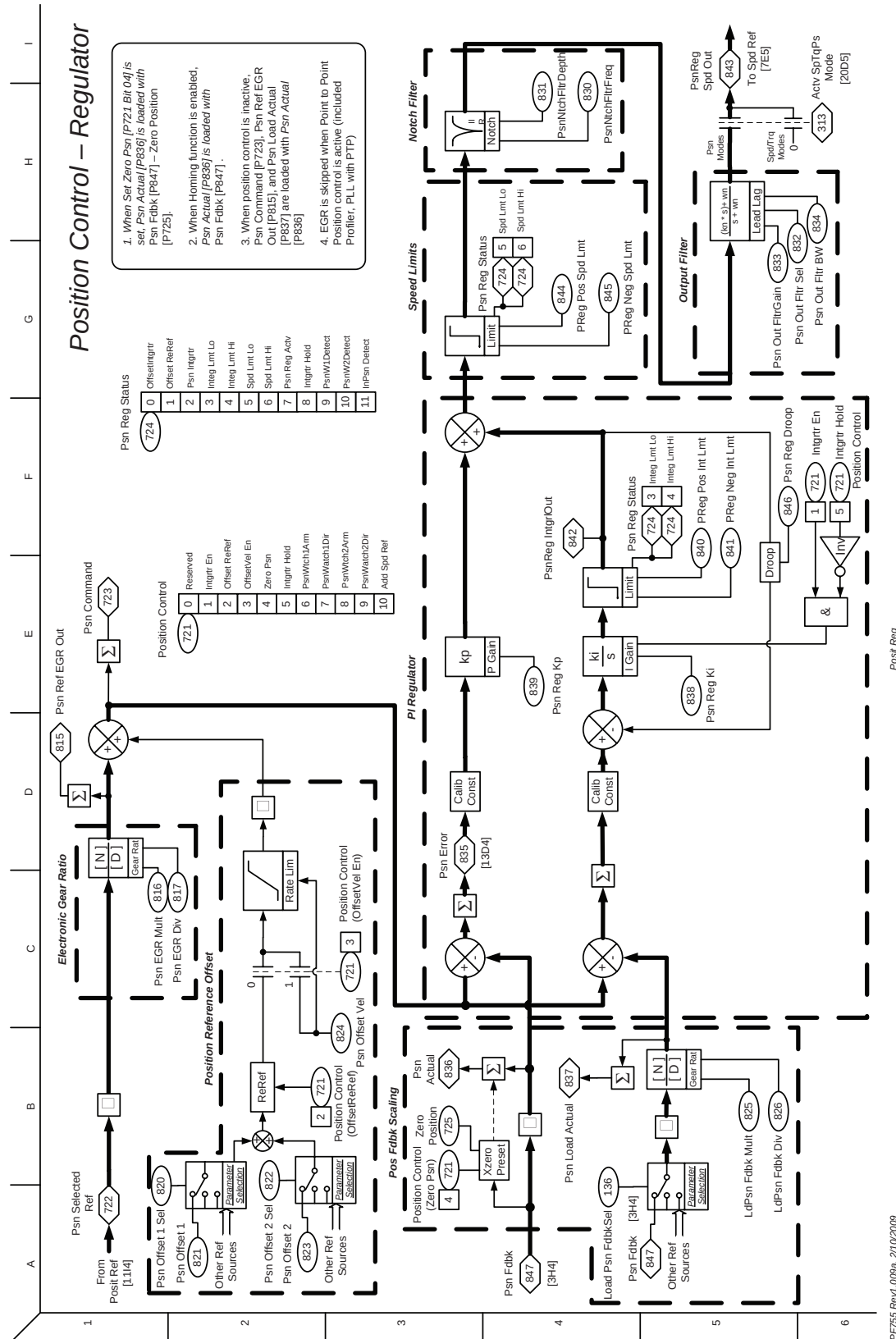


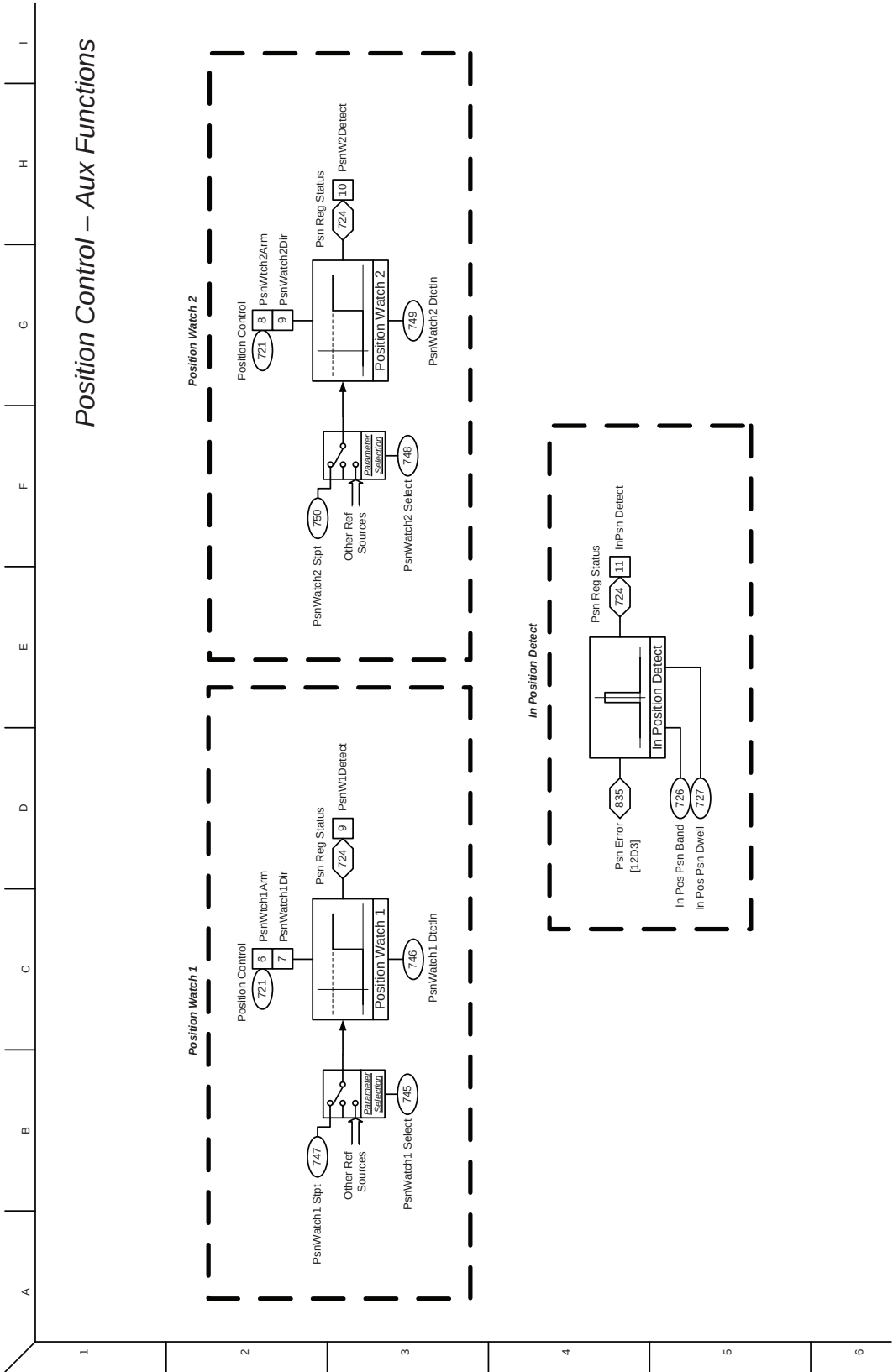
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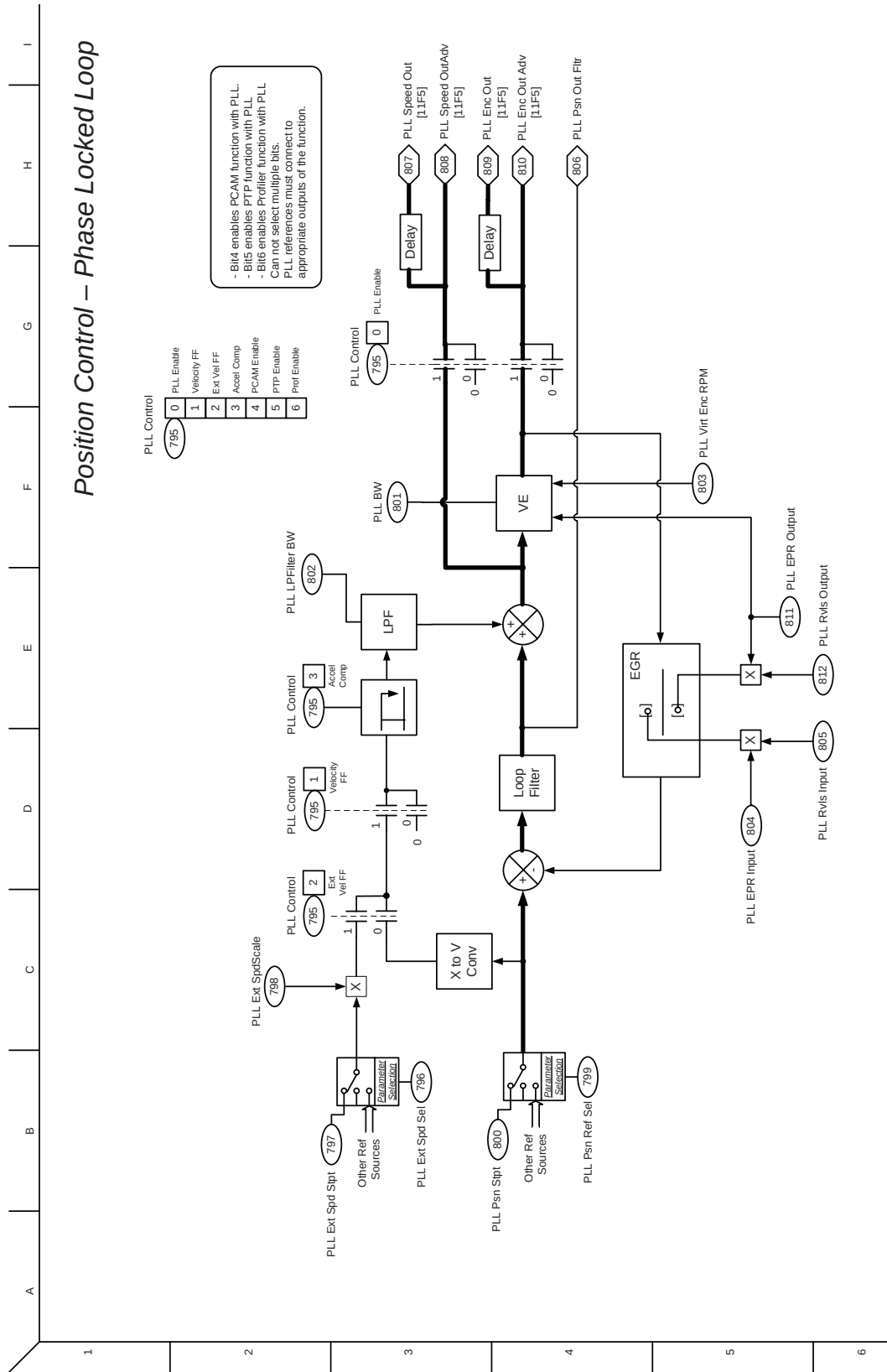
PF755 Rev1.009a, 2/10/2009

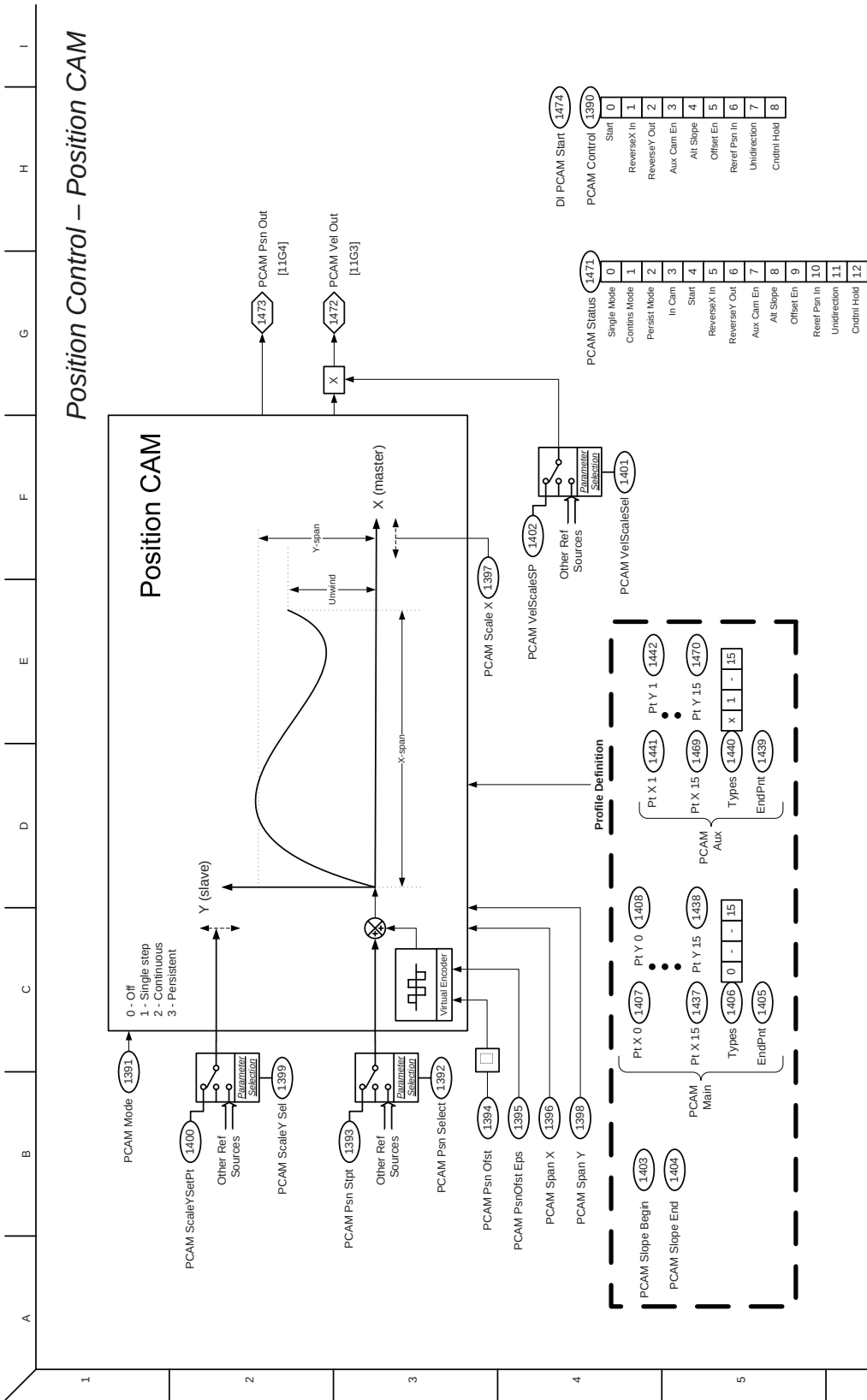




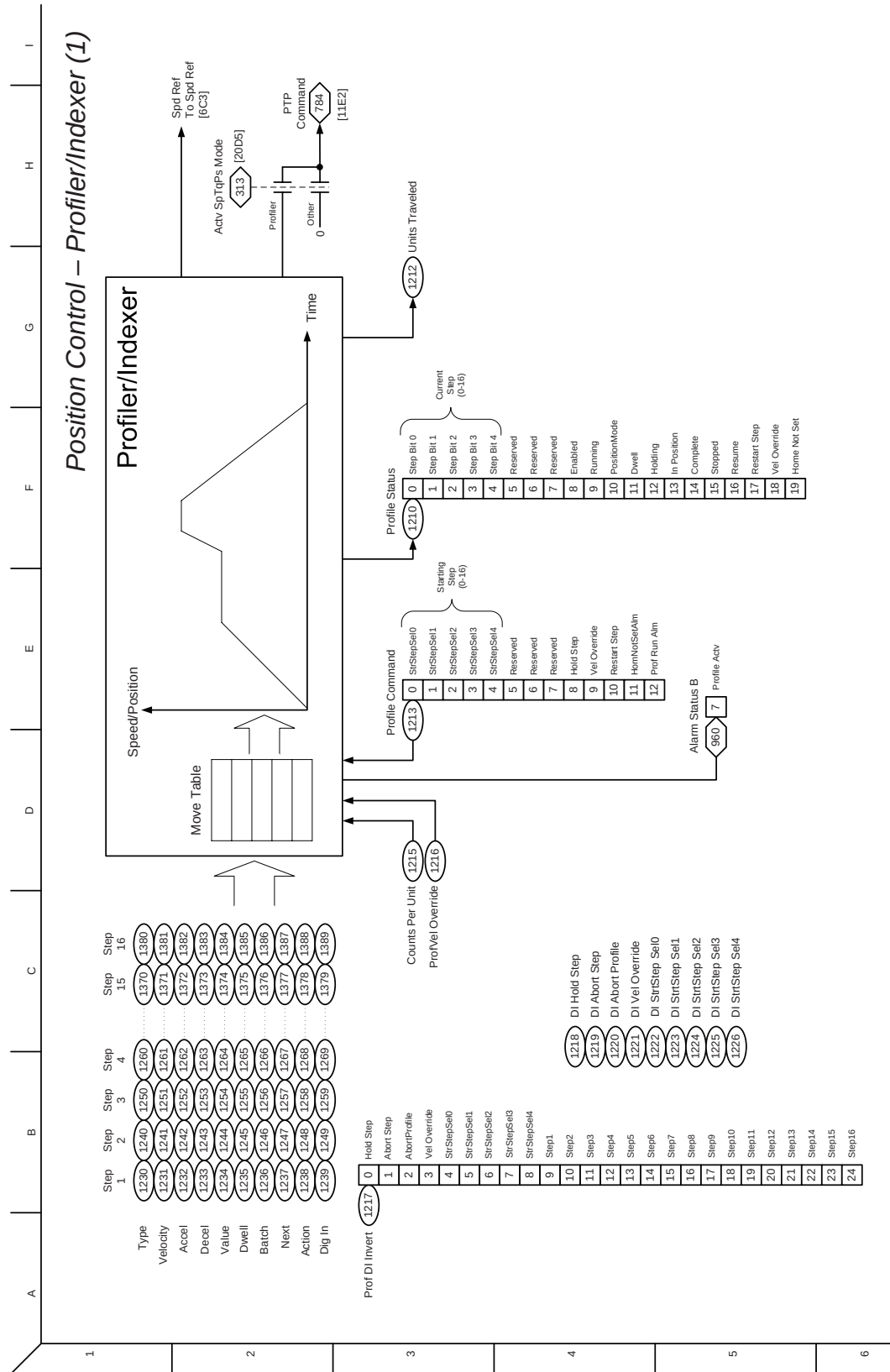








Posit CAM



Position Control – Homing

Position Control – Profiler/Indexer (2)

Type = Position Absolute (Posit Abs)

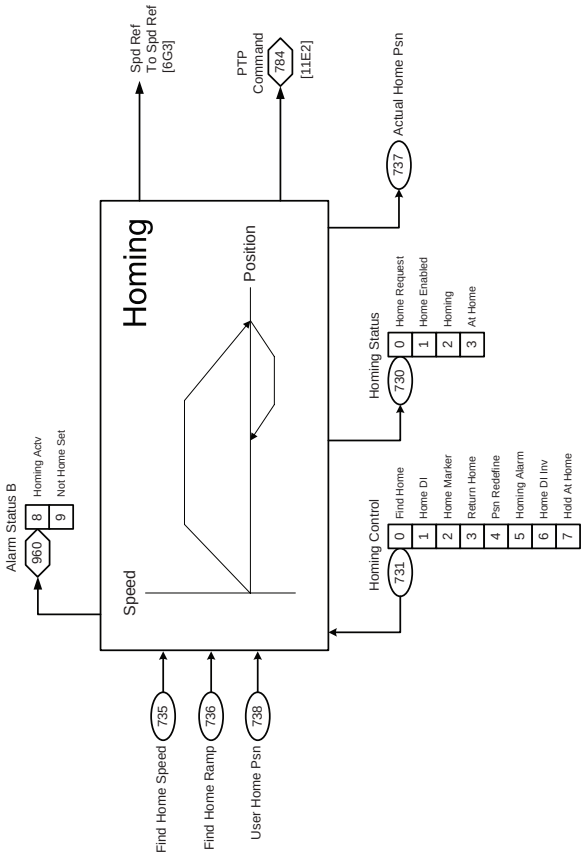
Action	Posit Blend	Time	Param Blend	DigIn Blend	(+/-) Wait DigIn	Step to Next	End
Velocity	Move vel	N/A	N/A	N/A	Move vel	Move vel	N/A
Accel	Move accel	N/A	N/A	N/A	Move accel	Move accel	N/A
Decel	Move decel	N/A	N/A	N/A	Move decel	Move decel	N/A
Value	Move value	N/A	N/A	N/A	Move value	Move value	N/A
Condition	Target pos	N/A	N/A	N/A	Target pos	Target pos	N/A
Dwell	N/A	N/A	N/A	N/A	Dwell time	Dwell time	N/A
Batch	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Next Step	Next Step	N/A	N/A	N/A	Next Step	Next Step	N/A
Condition	Position > ParamValue	N/A	N/A	N/A	Position > ParamValue	Position > ParamValue	N/A
DigIn#	N/A	N/A	N/A	N/A	DigIn#	N/A	N/A

Type = Position Incremental (Posit Incr)

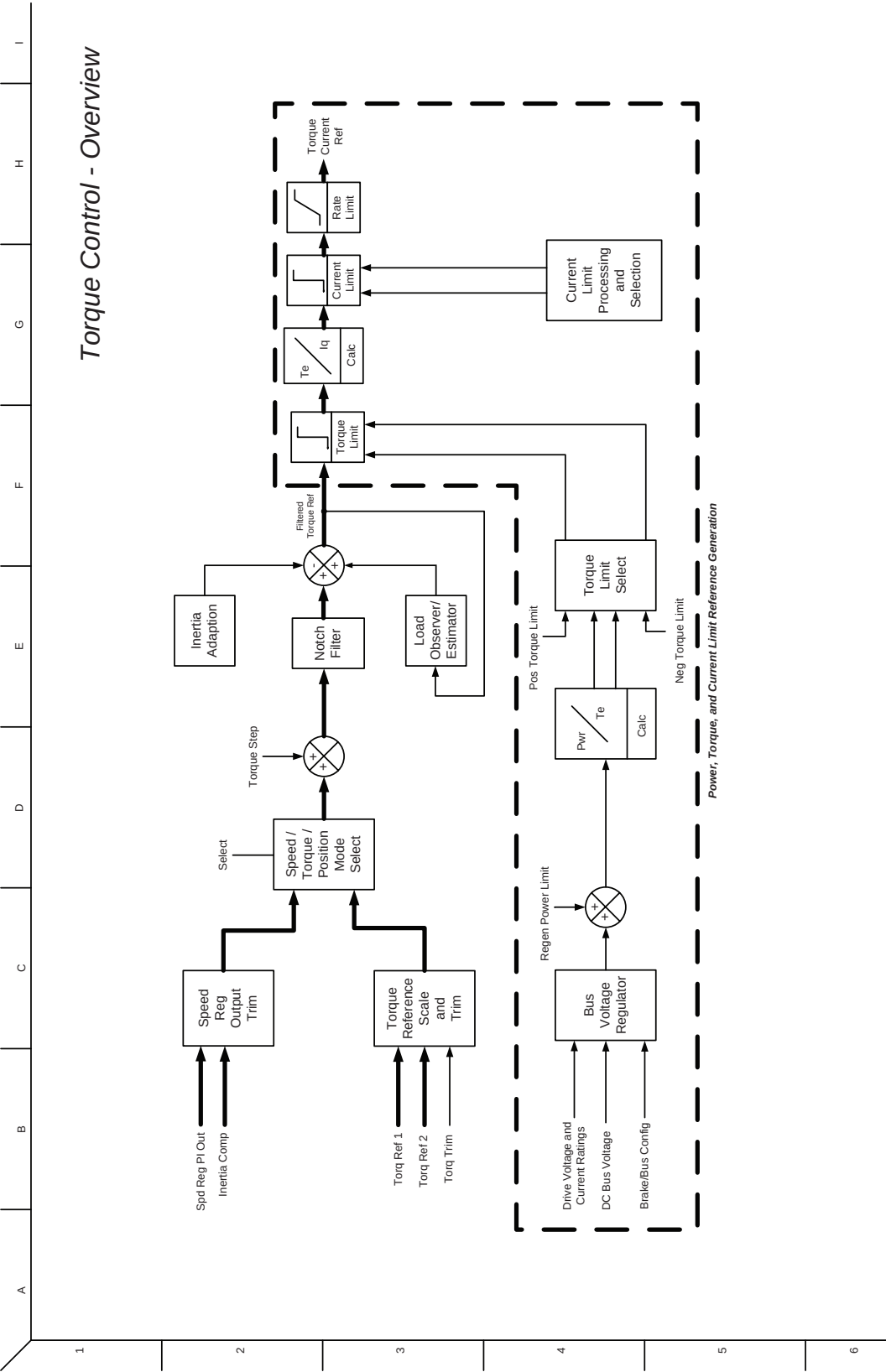
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Velocity	Move vel	N/A	N/A	N/A	Move vel	Move vel	N/A
Accel	Move accel	N/A	N/A	N/A	Move accel	Move accel	N/A
Decel	Move decel	N/A	N/A	N/A	Move decel	Move decel	N/A
Value	Move value	N/A	N/A	N/A	Move value	Move value	N/A
Condition	Target pos	N/A	N/A	N/A	Target pos	Target pos	N/A
Dwell	N/A	N/A	N/A	N/A	Dwell time	Dwell time	N/A
Batch	N/A	N/A	N/A	N/A	Batch #	Batch #	N/A
Next Step	Next Step	N/A	N/A	N/A	Next Step	Next Step	N/A
Condition	Position > ParamValue	N/A	N/A	N/A	Position > ParamValue	Position > ParamValue	N/A
DigIn#	N/A	N/A	N/A	N/A	DigIn#	N/A	N/A

Type = Speed Profile

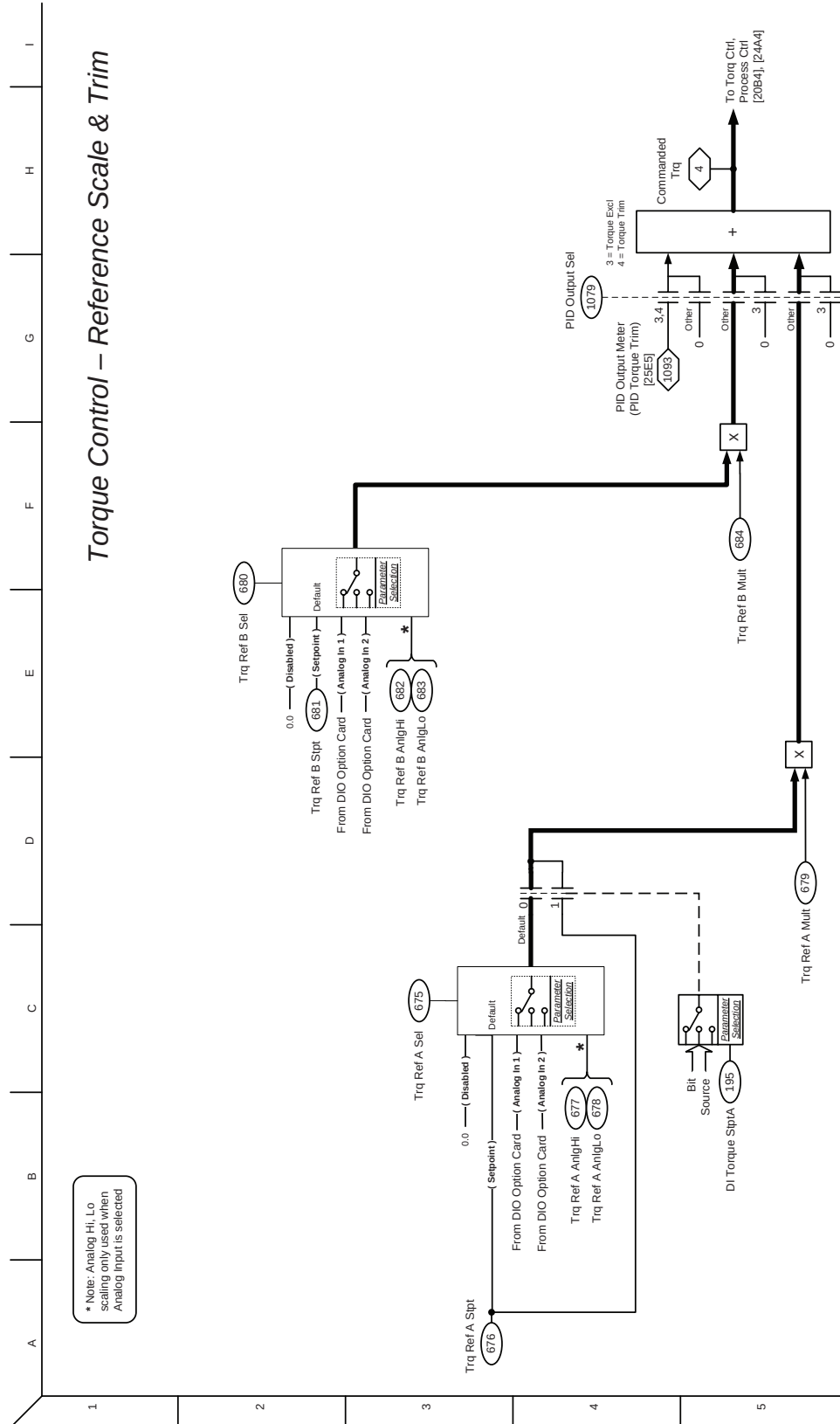
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Velocity	Move vel	Move vel	Move vel	Move vel	Move vel	Move vel	N/A
Accel	Move accel	Move accel	Move accel	Move accel	Move accel	Move accel	N/A
Decel	Move decel	Move decel	Move decel	Move decel	Move decel	Move decel	N/A
Value	Move value	Move value	Move value	Move value	Move value	Move value	N/A
Condition	Target pos	Target pos	Target pos	Target pos	Target pos	Target pos	N/A
Dwell	N/A	N/A	N/A	N/A	Dwell time	Dwell time	N/A
Batch	N/A	N/A	N/A	N/A	Batch #	Batch #	N/A
Next Step	Next Step	Next Step	Next Step	Next Step	Next Step	Next Step	N/A
Condition	Position > ParamValue	Position > ParamValue	Position > ParamValue	Position > ParamValue	Position > ParamValue	Position > ParamValue	N/A
DigIn#	N/A	N/A	N/A	N/A	DigIn#	N/A	N/A



- 732 DI Find Home
- 733 DI Redefine Psn
- 734 DI OL Home Limit

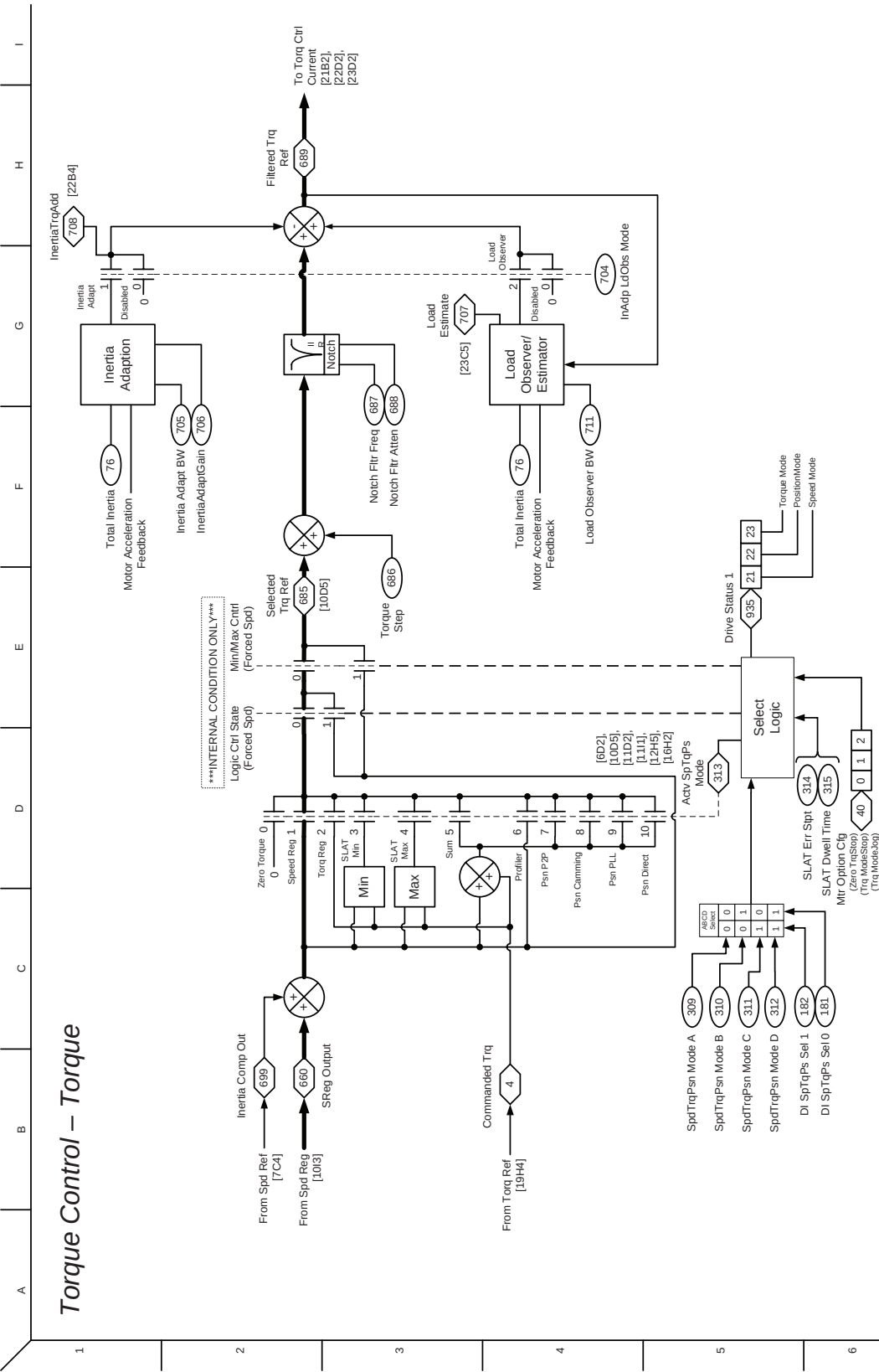


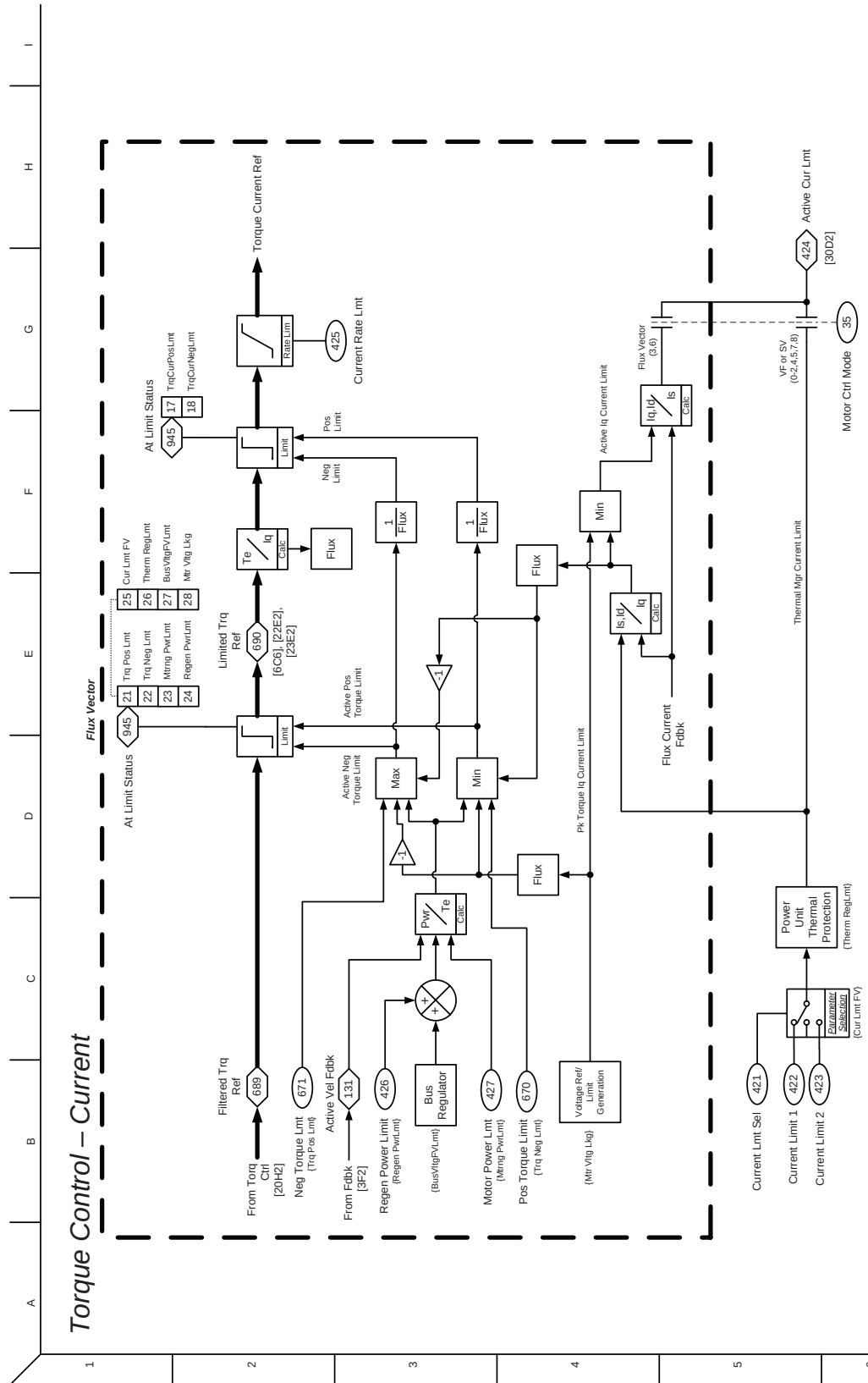
Torque Control – Reference Scale & Trim

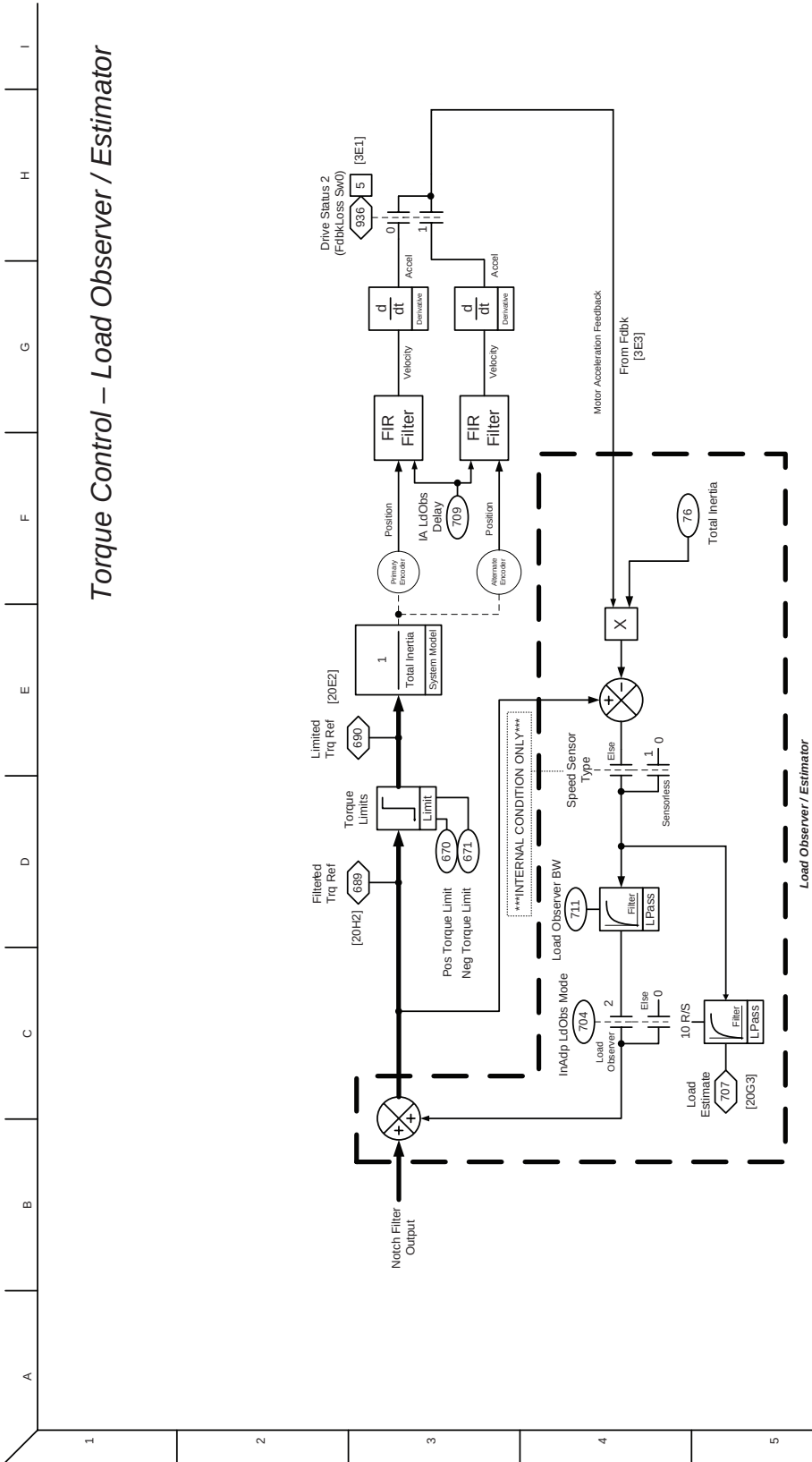


Trq Ref

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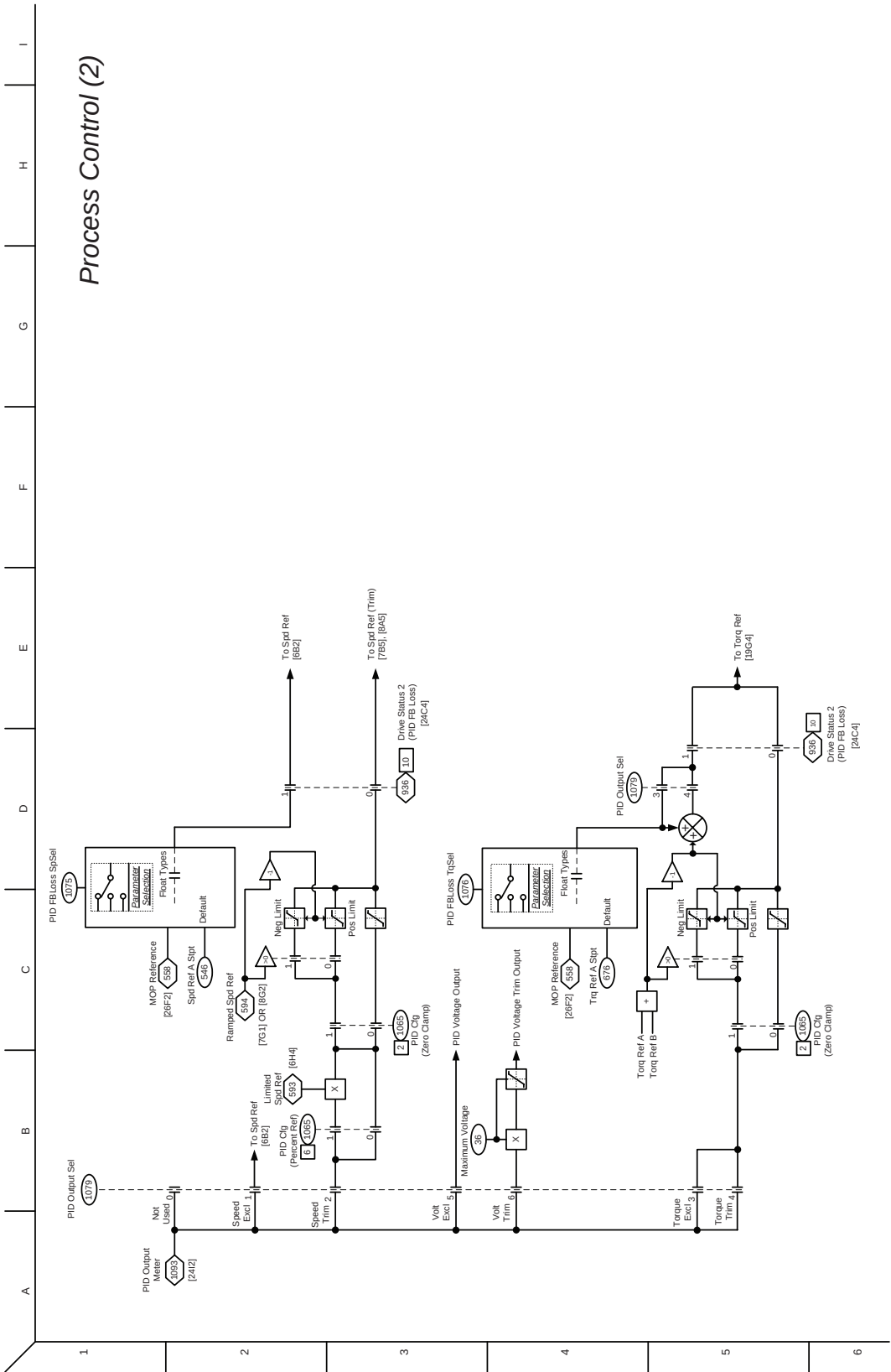




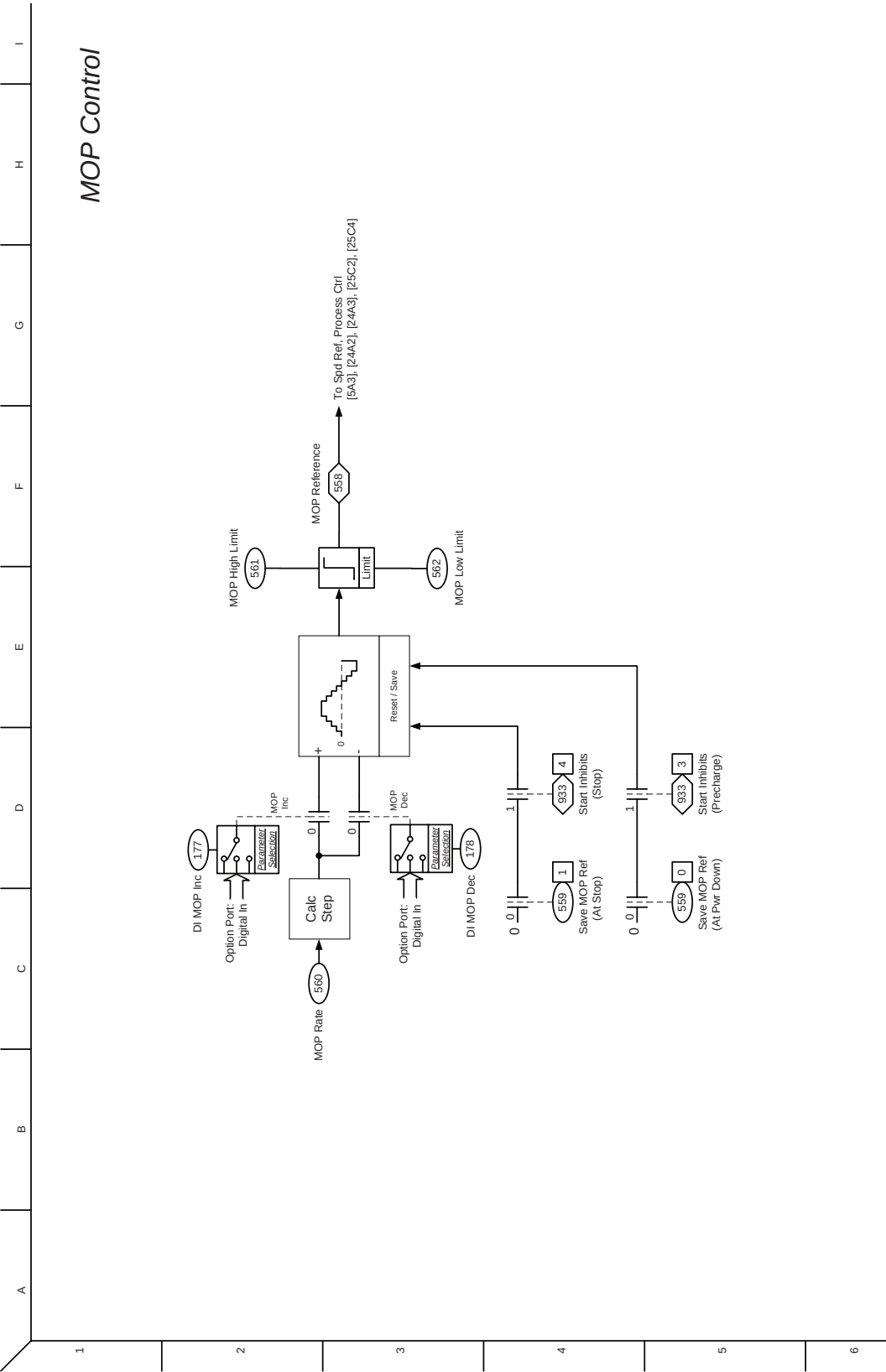


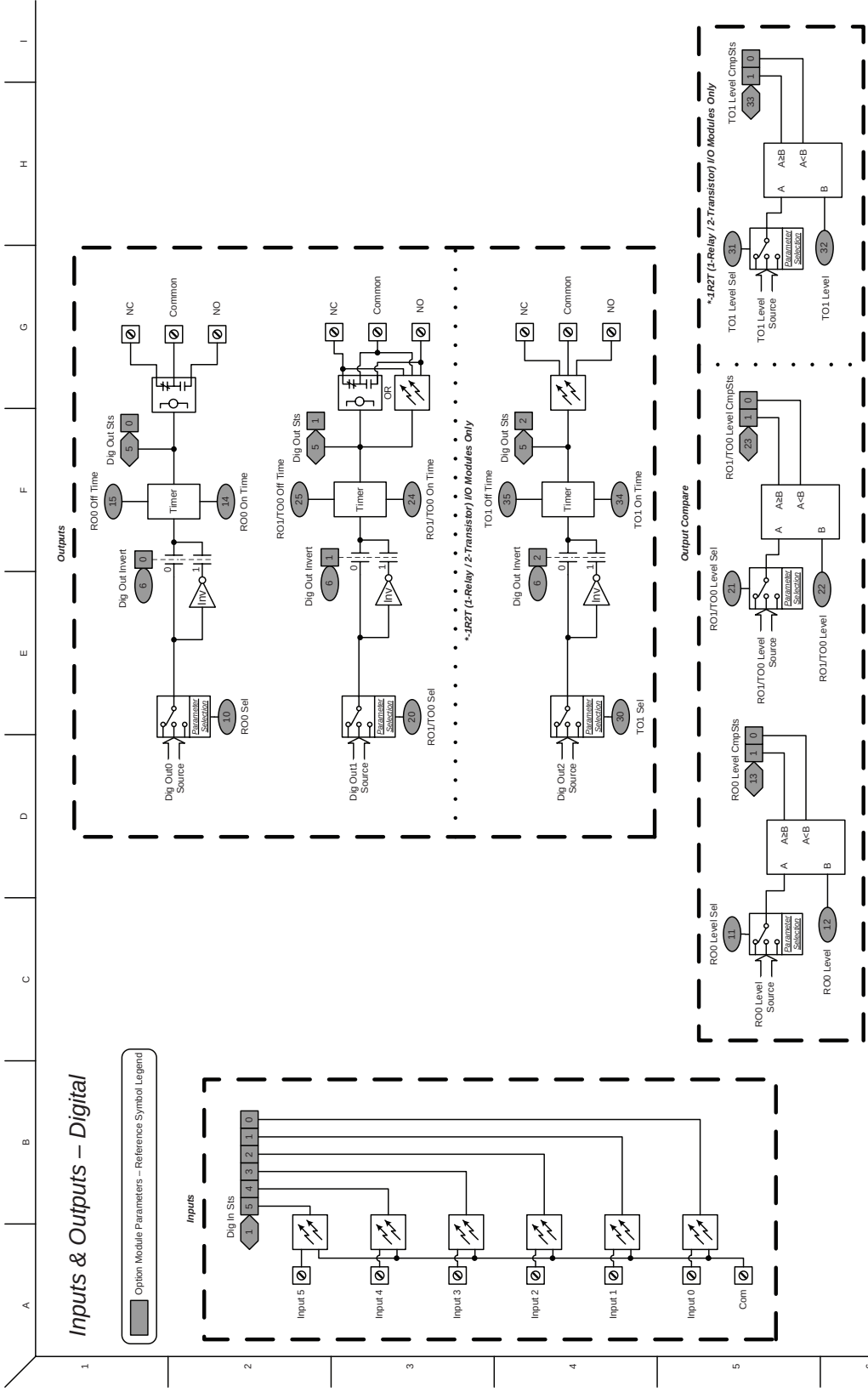
Trq Load Observer/Estimator





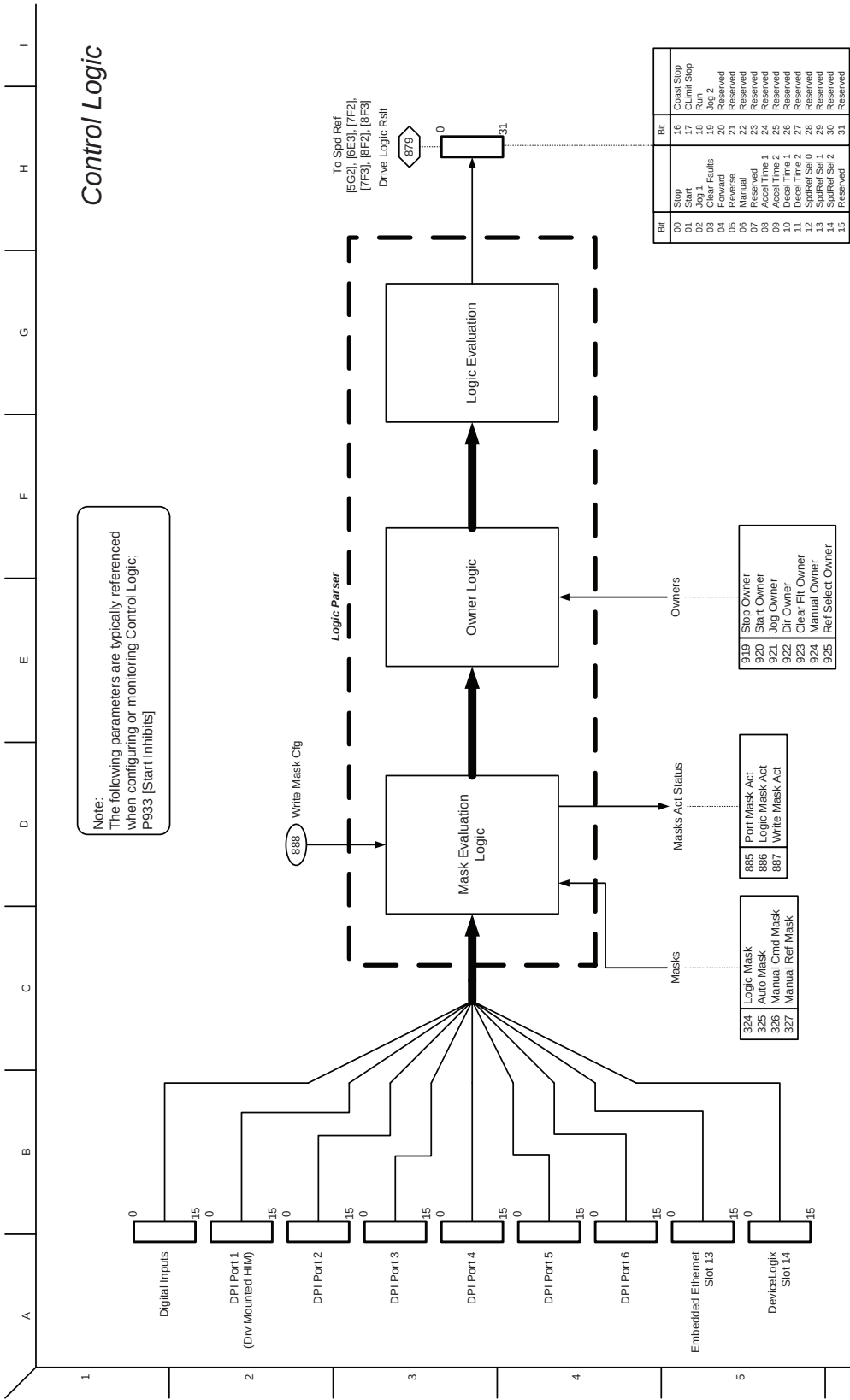
Process Ctr (2)

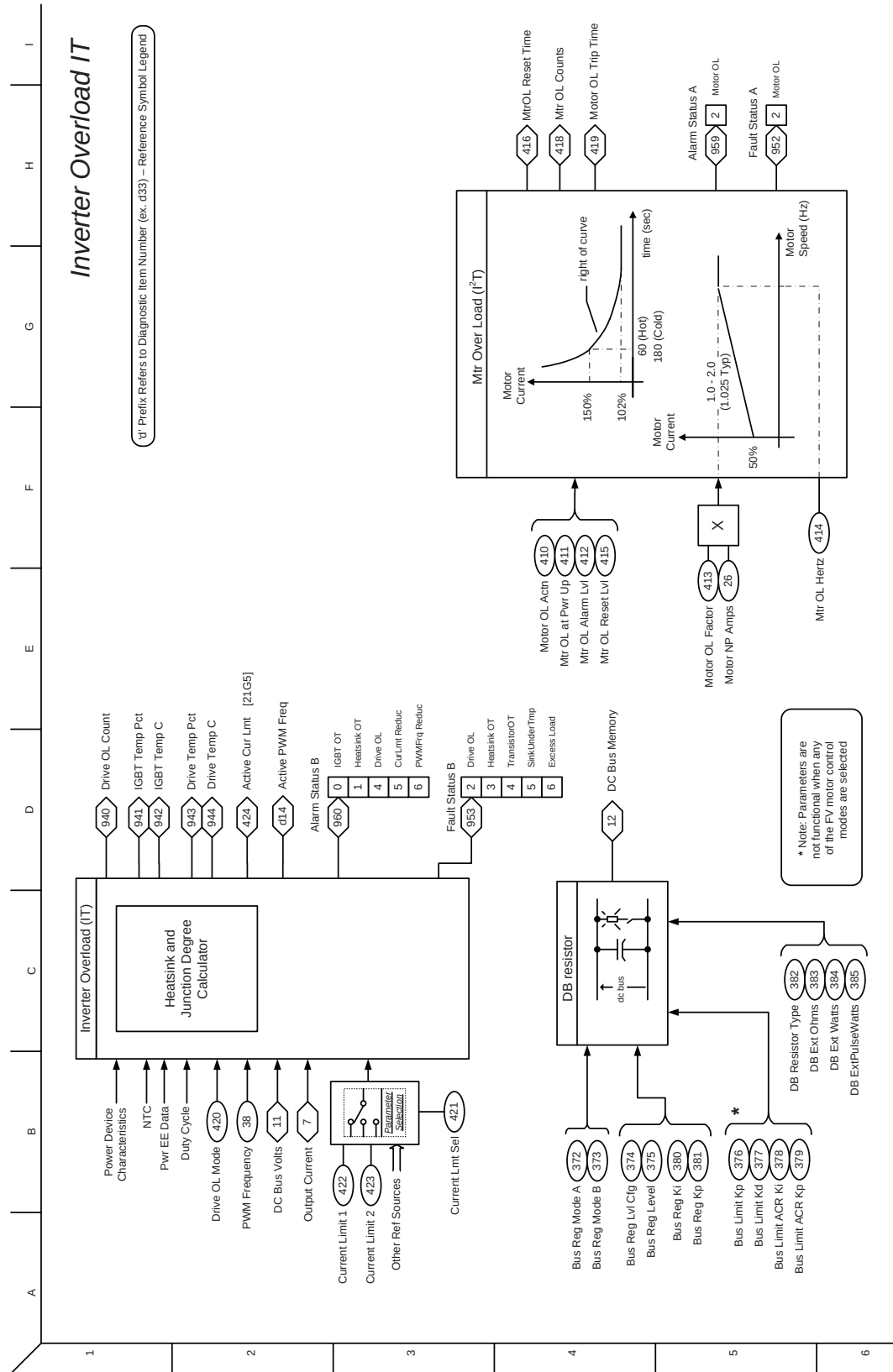


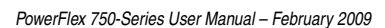


Option Module Parameters – Reference Symbol Legend









Notes:

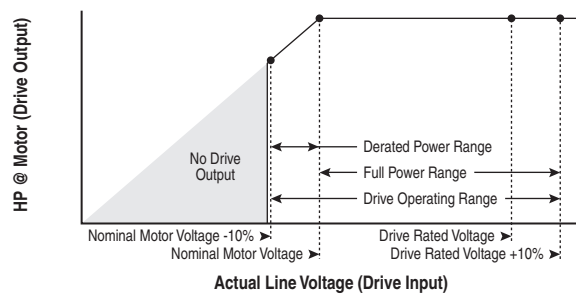
Application Notes

Voltage Tolerance

Drive Rating	Nominal Line Voltage	Nominal Motor Voltage	Drive Full Power Range	Drive Operating Range
380...400	380	380	380...528	342...528
	400	400	400...528	
	480	460	460...528	

Drive Full Power Range = Nominal Motor Voltage to Drive Rated Voltage + 10%.
Rated current is available across the entire Drive Full Power Range

Drive Operating Range = Lowest Nominal Motor Voltage - 10% to Drive Rated Voltage + 10%.
Drive Output is linearly derated when Actual Line Voltage is less than the Nominal Motor Voltage

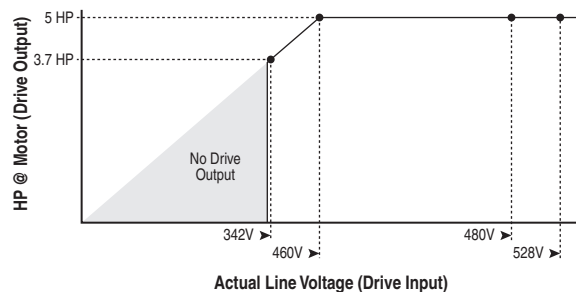


Example:

Calculate the maximum power of a 5 HP, 460V motor connected to a 480V rated drive supplied with 342V Actual Line Voltage input.

- Actual Line Voltage / Nominal Motor Voltage = 74.3%
- $74.3\% \times 5 \text{ HP} = 3.7 \text{ HP}$
- $74.3\% \times 60 \text{ Hz} = 44.6 \text{ Hz}$

At 342V Actual Line Voltage, the maximum power the 5 HP, 460V motor can produce is 3.7 HP at 44.6 Hz.

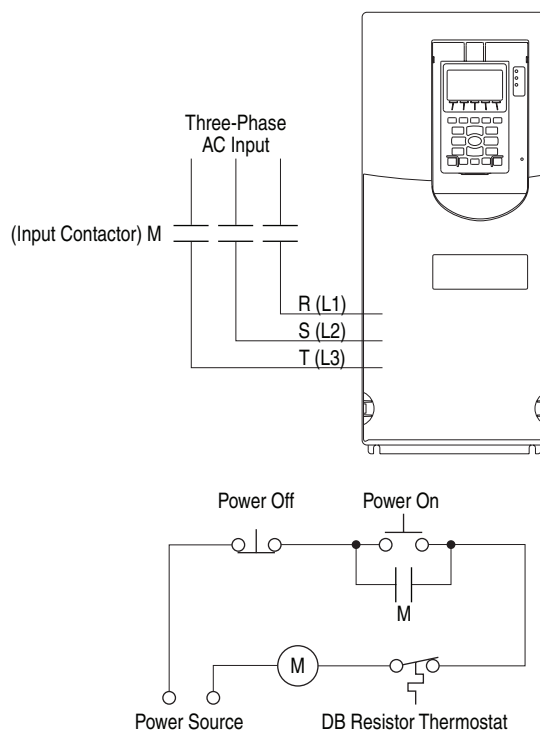


External Brake Resistor



ATTENTION: The drive does not offer protection for externally mounted brake resistors. A risk of fire exists if external braking resistors are not protected. External resistor packages must be self-protected from over temperature or a circuit equivalent to the one shown below must be supplied.

Figure C.1 External Brake Resistor Circuitry



Human Interface Module (HIM) Overview

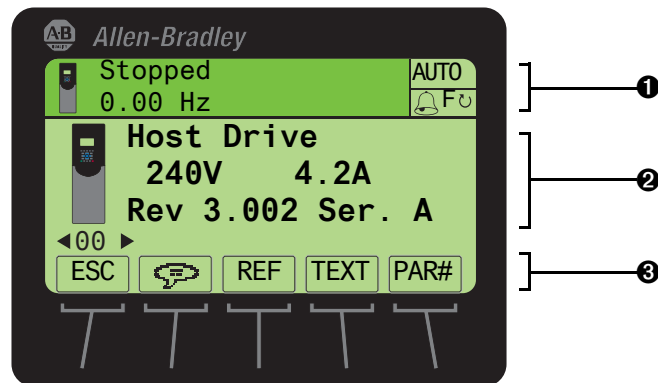
Complete information about using the HIM to configure and monitor your drive is provided in the Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual, publication 20HIM-UM001.

LCD Display Elements

The HIM display is divided into three zones:

- ❶ Status Bar
- ❷ Data Area
- ❸ Soft Key Labels

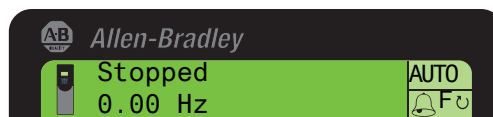
Figure D.1 HIM Display Zones



Status Bar

The Status Bar provides information about the operating condition of the Host Drive.

Figure D.2 Status Bar on the Display Screen

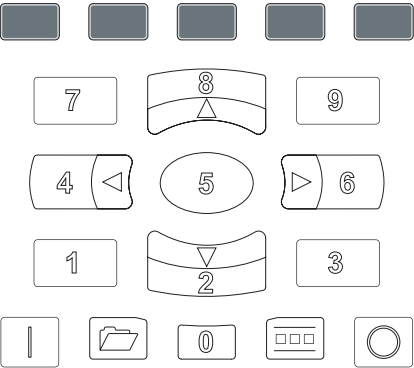


Element		Description
	Host Icon	A small image of the connected Host Drive.
Stopped	Status Text	Indicates current Host Drive operating status. Text flashes when a fault is present.
0.00 Hz	Feedback	Indicates drive output feedback (for example, Hz, RPM, amps, etc.)
AUTO / MAN	Mode Indication	Indicates Auto or Manual HIM status.
	Alarm Indication	Bell icon indicates that an alarm is present.
FWD REV	Rotation Indication	Indicates direction of Host Drive operation.

Soft Keys

Up to five dynamic *soft keys* (shown shaded in [Figure D.3](#)) may be available. A *soft key* changes its function/name based on the HIM screen or data entry mode. When a *soft key* is active, its present function is shown on the LCD screen in its corresponding Soft Key Label (item 3 in [Figure D.1](#)).

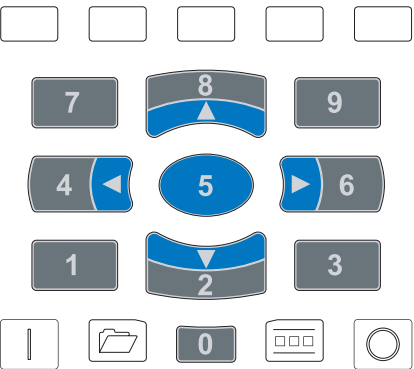
Figure D.3 Soft Keys



Navigation and Number Keys

The five blue multi-function keys shown in [Figure D.4](#) are used to scroll menus/screens, perform corresponding functions displayed in the Data Area (item 2 in [Figure D.1](#)) or enter numeric values. The five gray number keys (0, 1, 3, 7, and 9) are used only to enter their respective numeric value

Figure D.4 Navigation and Number Keys.

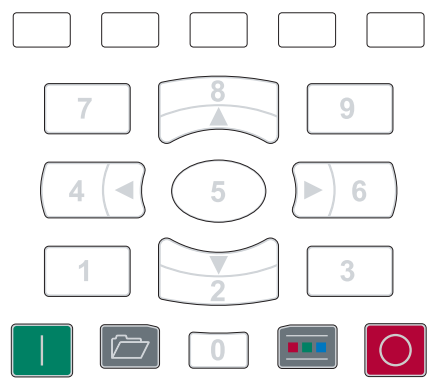


Key	Name	Description
	2/Down Arrow	- Enters the numeric value “2.” - Scrolls down to select an item.
	4/Left Arrow	- Enters the numeric value “4.” - Scrolls left to select an item.
	5/Enter	- Enters the numeric value “5.” - Displays the next level of a selected menu item. - Enters new values. - Performs intended actions.
	6/Right Arrow	- Enters the numeric value “6.” - Scrolls right to select an item.
	8/Up Arrow	- Enters the numeric value “8.” - Scrolls up to select an item.

Single Function Keys

Each of the four single-function keys shown in [Figure D.5](#) always performs only its dedicated function.

Figure D.5 Single Function Keys



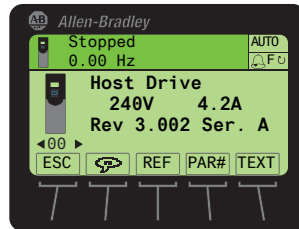
Key	Name	Description
	Start	Start the drive.
	Folder	Access parameters, diagnostics, memory functions, preferences, and other tasks such as Start-Up.
	Control Bar	Access jog, direction, auto/manual, and other control functions.
	Stop	Used to stop the drive or clear a fault. This key is always active. Controlled by parameter 307 [Start Stop Mode].

Navigate to Start-Up Menu Using the HIM

1. To access the Start-Up menu after the initial drive power-up, apply power to the drive.

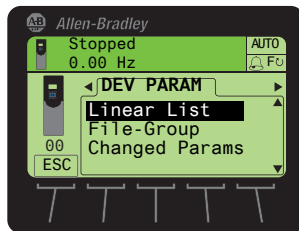
Upon a subsequent power up, the Status screen for Port 00 (Host Drive) is shown by default.

Figure D.6 Status Screen



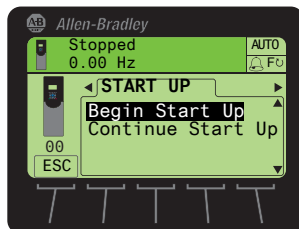
2. Press the  (Folders) key to access the Folder screen.

Figure D.7 Folder Screen



3. Use the  or  key to scroll to the START UP folder screen.

Figure D.8 Start Up Screen



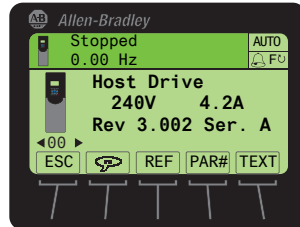
4. Use the  or  key to select one of the start up options.

Select A Device

1. Access the Status Screen.

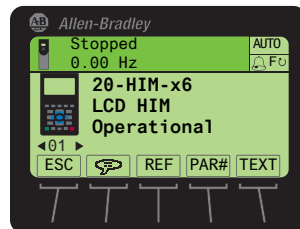
When the drive is powered up, the Status screen for Port 00 (Host Drive) is shown by default.

Figure D.9 Status Screen Displaying Port 00 (Host Drive)



2. Use the  or  key to scroll to the desired port.

Figure D.10 Status Screen Displaying Port 01 (HIM Installed In Cradle)



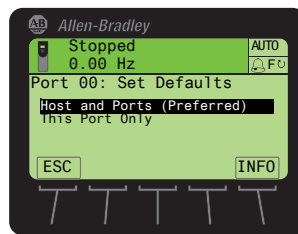
3. Press the PAR# soft key or the  (Folders) key to access parameters.

Setting Factory Defaults

Setting PowerFlex 750-Series Drives to Factory Defaults

1. Access the Status screen ([Figure D.6](#)).
2. Use the  or  key to scroll to the Port 00 for the Host Drive whose settings you want to reset to factory defaults.
3. Press the  key to display its last-viewed folder.
4. Use the  or  key to scroll to the MEMORY folder.
5. Use the  or  key to select **Set Defaults**.
6. Press the  (Enter) key to display the Set Defaults pop-up box.

Figure D.11 Set Defaults Pop-Up Box for PowerFlex 750-Series Drives



7. Use the  or  key to select the appropriate action.
 - Host and Ports (Preferred): Selects the Host device and all ports for a factory default action.
 - This Port Only: Selects only this port for a factory default action.



TIP: For a description of a selected menu item, press the *INFO soft key*.

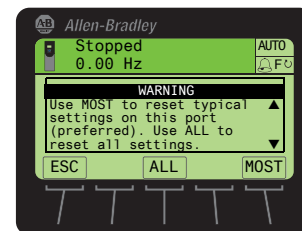
8. Press the  (Enter) key to display the warning pop-up box to reset defaults.

Figure D.12 Host and Ports (Preferred) Pop-Up Box



Press the *ENTER soft key* to affirm and set most parameters for the Host Drive and port devices to factory defaults. In this case, refer to the Host Drive and port device User Manuals for the settings that will NOT be restored. Or press the *ESC soft key* to cancel.

Figure D.13 This Port Only Pop-Up Box

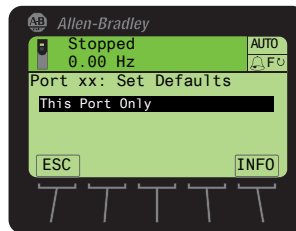


Press the *MOST soft key* to set MOST settings for the selected port device to factory defaults. In this case, refer to the Host Drive User Manual for the settings that will NOT be restored. Press the *ALL soft key* to set ALL settings for the selected port device to factory defaults. Or press the *ESC soft key* to cancel.

Setting PowerFlex 750-Series Peripherals to Factory Defaults

1. Access the Status screen ([Figure D.6](#)).
2. Use the  or  key to scroll to the Port of the device whose parameters you want to set to factory defaults (for example, Port 13, which is dedicated for the embedded EtherNet/IP communication adapter on the Main Control Board in PowerFlex 755 drives).
3. Press the  key to display its last-viewed folder.
4. Use the  or  key to scroll to the MEMORY folder.
5. Use the  or  key to select **Set Defaults**.
6. Press the  (Enter) key to display the Set Defaults pop-up box.

Figure D.14 Set Defaults Pop-Up Box for PowerFlex 750-Series Peripherals

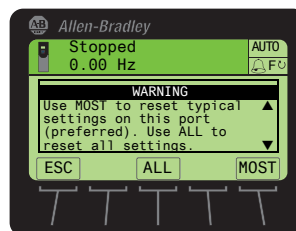


- This Port Only: Selects only this port for a factory default action.

► **TIP:** For a description of a selected menu item, press the *INFO soft key*.

7. Press the  (Enter) key to display the warning pop-up box to reset defaults.

Figure D.15 Warning Pop-Up Box to Reset Factory Defaults



8. Press the *MOST soft key* to set MOST settings for the selected port device to factory defaults. In this case, refer to the port device User Manuals for the settings that will NOT be restored. Press the *ALL soft key* to set ALL settings for the selected port device to factory defaults. Or press the *ESC soft key* to cancel.

Setting PowerFlex 7-Class Drives/Peripherals to Factory Defaults

1. Access the Status screen ([Figure D.6](#)).
2. Use the  or  key to scroll to the Port of the device whose parameters you want to set to factory defaults (for example, Port 00 for the Host Drive).
3. Press the  key to display its last-viewed folder.
4. Use the  or  key to scroll to the MEMORY folder.
5. Use the  or  key to select **Set Defaults**.
6. Press the  (Enter) key to display the Set Defaults pop-up box.

Figure D.16 Set Defaults Pop-Up Box



7. Press the ENTER *soft key* to affirm and set all device parameter values to factory defaults. Or press the ESC *soft key* to cancel.

Universal Feedback Encoder Option Module

For information on . .	See page . .
Specifications	E-1
Terminal Block Designations	E-3
Wiring Examples	E-4

Specifications

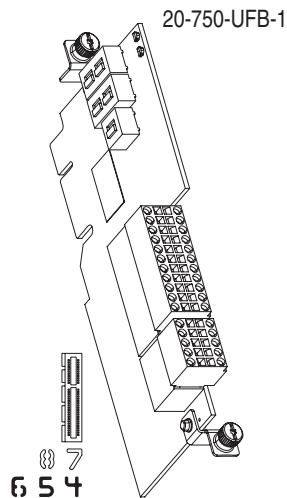


Table E.A Universal Feedback Option Module LED Indication

LED	Name	Color	State	Description
①	Board	Unlit	Off	Not powered.
		Green	Flashing	Initializing, not active. Communication lost, attempting to reconnect.
			Steady	Operational, no faults are present.
		Red	Flashing	Module error. • Check P1 [Module Status]
			Steady	Normal operation.
				Module is booting.
				Fatal module error. • Cycle power • Flash update module firmware • Replace module
		Yellow	Flashing	A type 2 alarm condition exists. • Check P1 [Module Status]
			Steady	A type 1 alarm condition exists. • Check P1 [Module Status]
		Yellow / Green	Flashing Alternately	Module is flash updating.
②	DPI	Unlit	Off	Not powered. Not communicating.
		Green	Flashing	Module is attempting to communicate with the DPI host.
			Steady	• Properly connected and communicating. • Module is flash updating.
		Red	Flashing	Module is not communicating with the DPI host.
			Steady	DPI communication failure such as invalid port.
		Yellow	Flashing	Normal operation.
			Steady	Peripheral is connected to a SCANport product and does not support a SCANport compatibility mode.

Table E.B Universal Feedback Option Module DIP Switch Settings (Safety Application)

Safety Channel Selection	DIP Switch Settings
Primary Safety Channel To connect feedback signals to the Primary Safety Channel, set: S1 sliders to ON S2 sliders to OFF S3 slider to ON	
Secondary Safety Channel To connect feedback signals to the Secondary Safety Channel, set: S1 sliders to OFF S2 sliders to ON S3 slider to ON	
Primary and Secondary Safety Channels To connect feedback signals to both the Primary and Secondary Safety Channels, set: S1 sliders to ON S2 sliders to ON S3 slider to ON	

Table E.A Universal Feedback Encoder Option Module

Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA
Encoder Voltage Supply	3.5V DC minimum to 7.5V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length:	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

Table E.B Supported Encoders

Consideration	Heidenhain (EnDat)	SSI	Stegmann (Hiperface)	BiSS	Stahl (linear)	Temposonics (linear)	Incremental AquadB
Encoder Voltage Supply	5V @ 250 mA	10.5V @ 250 mA	10.5V @ 250 mA	10.5V @ 250 mA	External Supplied 24V	External Supplied 24V	5V @ 250 mA
High-Resolution Signal	Sine/Cosine 1V P-P	Sine/Cosine 1V P-P	Sine/Cosine 1V P-P	Sine/Cosine 1V P-P	n/a	n/a	n/a
Maximum Cable Length	100 m	100 m	90 m	100 m	100 m	100 m	100 m
Update Rate ⁽¹⁾	102.4 μ s	102.4 μ s	102.4 μ s	102.4 μ s	0.5/1.0/1.5/2.0 ms	0.5/1.0/1.5/2.0 ms	102.4 μ s

⁽¹⁾ The Universal Feedback Encoder Option Module will acquire the position with the update rates displayed.

Terminal Block Designations

Table E.C Universal Feedback Encoder Option Module TB1 Terminal Designations

Terminal	Name	Description
-Sn	Sine (-)	Negative Sine signal
+Sn	Sine (+)	Positive Sine signal
-Cs	Cosine (-)	Negative Cosine signal
+Cs	Cosine (+)	Positive Cosine signal
Is	Inner Shield	Heidenhain inner shield terminal
Os	Outer Shield	Cable shield terminal
-Xc	Channel X Clock (-)	Negative clock terminal (Channel X)
+Xc	Channel X Clock (+)	Positive clock terminal (Channel X)
-Xd	Channel X Data (-)	Negative data terminal (Channel X)
+Xd	Channel X Data (+)	Positive data terminal (Channel X)
-Hf	Heidenhain Supply Feedback (-)	
+Hf	Heidenhain Supply Feedback (+)	
5c	Common	+5V Common
+5	+5 Volt DC Power	Power supply for encoder 250 mA
12c	Common	+12V Common
+12	+12 Volt DC Power	Power supply for encoder 250 mA
-A	Encoder A (NOT)	Single channel or quadrature A input or encoder output.
A	Encoder A	
-B	Encoder B (NOT)	Quadrature B input or encoder output.
B	Encoder B	
-Z	Encoder Z (NOT)	Pulse, marker or registration input or encoder output.
Z	Encoder Z	

Table E.D Universal Feedback Encoder Option Module TB2 Terminal Designations

Terminal	Name	Description
-Hm	Home Input (-)	Captures the AB edge counter.
+Hm	Home Input (+)	12V to 24V DC
-R0	Registration Input 0 (-)	Positive and negative encoder registration terminals.
+R0	Registration Input 0 (+)	12V DC @ 9 mA to 24V DC @ 40 mA
-R1	Registration Input 1 (-)	
+R1	Registration Input 1 (+)	
-Yc	Channel Y Clock (-)	Negative clock terminal (Channel Y)
+Yc	Channel Y Clock (+)	Positive clock terminal (Channel Y)
-Yd	Channel Y Data (-)	Negative data terminal (Channel Y)
+Yd	Channel Y Data (+)	Positive data terminal (Channel Y)

Important: Only one linear feedback device can be connected to the option module. Wire the device to either Channel X on TB1 or Channel Y on TB2.

Parameter Access

Refer to [Select A Device on page D-5](#) for instructions on how to access parameters on an option module.

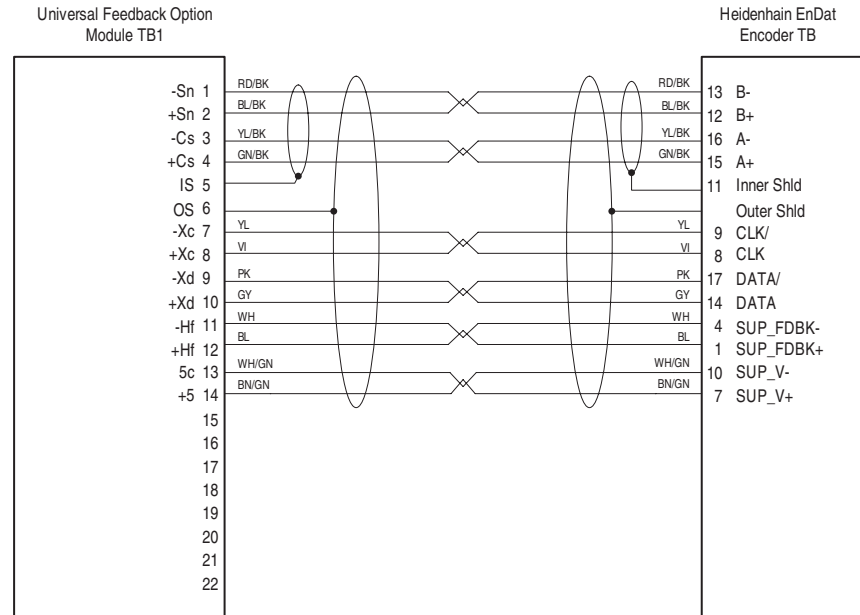
Parameter Descriptions

Universal Feedback option module parameter descriptions begin on [page 3-147](#).

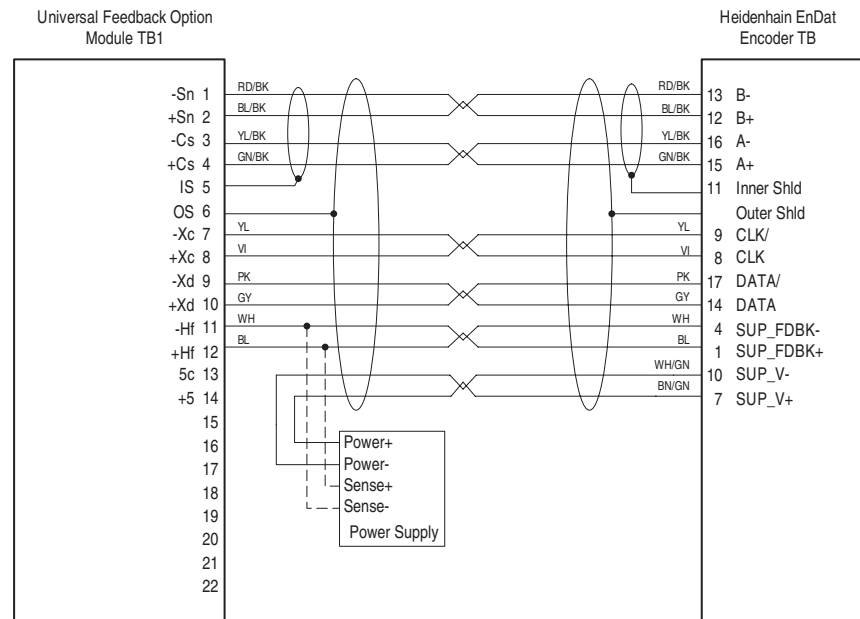
Wiring Examples

The following table includes a list of motor, feedback device and cable wiring examples.

If you are using this motor and/or feedback device...	and this cable...	See this wiring example...
Heidenhain EnDat angle encoder (e.g., RCN729/829) with internal power supply	supplied with encoder	Figure E.1 on page E-5
Heidenhain EnDat angle encoder with external power supply	supplied with encoder	Figure E.2 on page E-5
Heidenhain Non-EnDat rotary encoder with internal power supply	PUR cable supplied with encoder	Figure E.3 on page E-6
Heidenhain EnDat rotary encoder (ECN 412 EnDat01) with internal power supply	supplied with encoder	Figure E.4 on page E-6
Heidenhain EnDat rotary encoder (ECN 412 EnDat01) with internal power supply	PUR cable supplied with encoder	Figure E.5 on page E-7
460V MP series motor and Stegmann rotary encoder	2090-CDNFDMP-SXX	Figure E.6 on page E-7
	2090-XXNFMP-SXX	Figure E.7 on page E-8
Allen-Bradley 1326AB-BXXXX-M2L, -M2KXL, -S2I or -S2KXL motor and Stegmann rotary encoder	2090-CDNFDMP-SXX	Figure E.6 on page E-7
	2090-XXNFMP-SXX	Figure E.7 on page E-8
230V MP series motor and a Stegmann rotary encoder	2090-UXNFDMP-SXX	Figure E.8 on page E-8
	2090-XXNFMP-SXX	Figure E.9 on page E-9
Stegmann rotary encoder	1326-CECU-XXL-XXX	Figure E.10 on page E-9
	Pre-attached, shielded, twisted pair	Figure E.11 on page E-10
	Shielded, twisted pair cable with an 8-pin Berg style connector	Figure E.12 on page E-10
	Shielded, twisted pair cable with a 10-pin MS style connector	Figure E.13 on page E-11
	Shielded, twisted pair cable with a 12-pin DIN style connector	Figure E.14 on page E-11
460V MP series motor and a rotary encoder	2090-CDNFDMP-SXX	Figure E.15 on page E-12
	2090-XXNFMP-SXX	Figure E.15 on page E-12
Allen-Bradley 1326AB-BXXXX-M2L, -S2I or -S2KXL motor and a rotary encoder	2090-XXNFMP-SXX	Figure E.15 on page E-12
230V MP series motor and a rotary encoder	2090-UXNFDMP-SXX	Figure E.16 on page E-12
	2090-XXNFMP-SXX	Figure E.16 on page E-12
Linear sensor	MDI RG Connector	Figure E.17 on page E-13
	P Integral Cable	Figure E.17 on page E-13
Registration sensor	supplied with sensor	Figure E.18 on page E-14
Simulated Incremental encoder output	customer supplied	Figure E.19 on page E-15

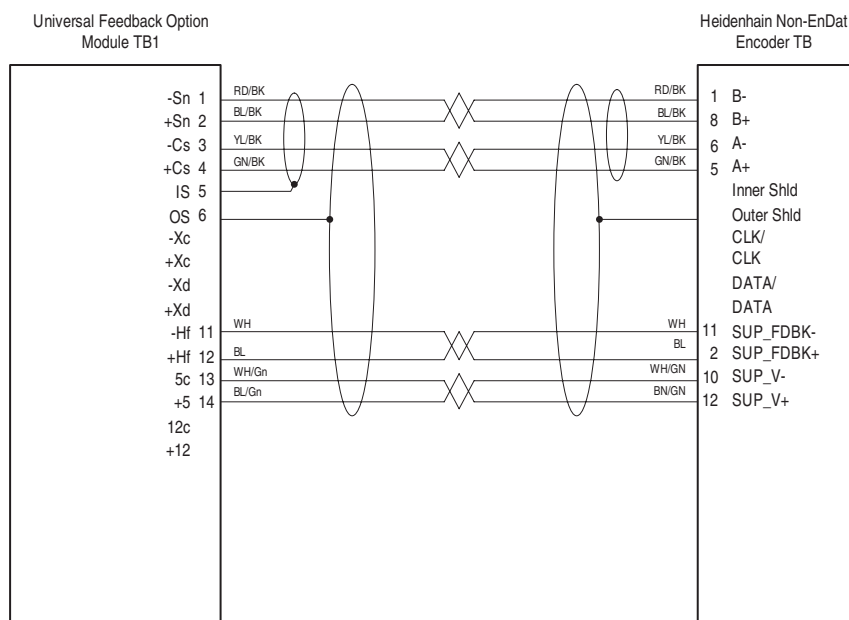
Figure E.1 Heidenhain EnDat Angle Encoder with Internal Power Supply

Note: Refer to Installation Instructions supplied with encoder for additional information.

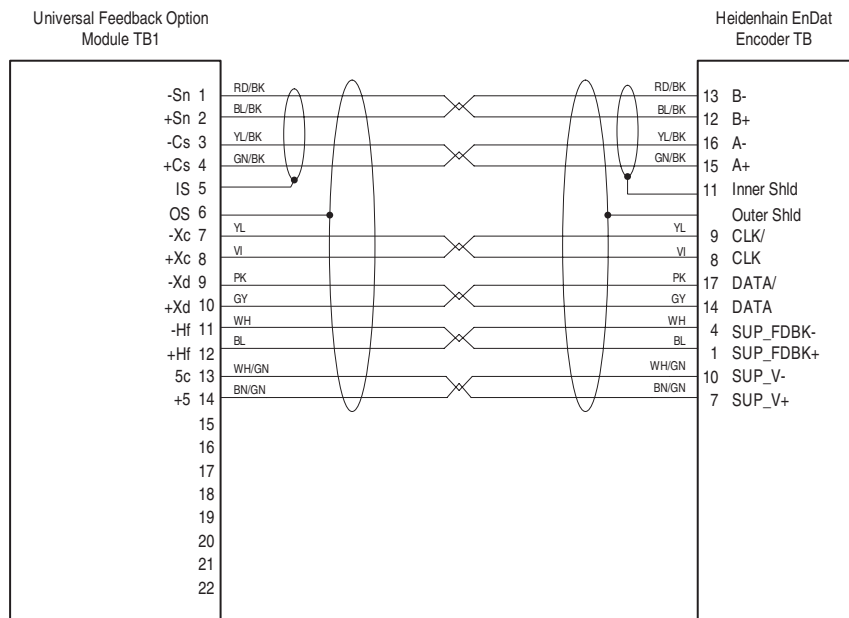
Figure E.2 Heidenhain EnDat Angle Encoder with External Power Supply

Notes: Refer to Installation Instructions supplied with encoder for additional information. The external power supply must be 3.6V to 5.25V, max. 350mA.

TB1-14 (Power+) and TB1-13 (Power-) must not be connected to the encoder. The brown/green and white/green conductors must be connected to the external power supply. If the external power supply does not have sense connections, the supply feedback (sense) connections should still be made from the encoder to the universal board (TB1-11,12).

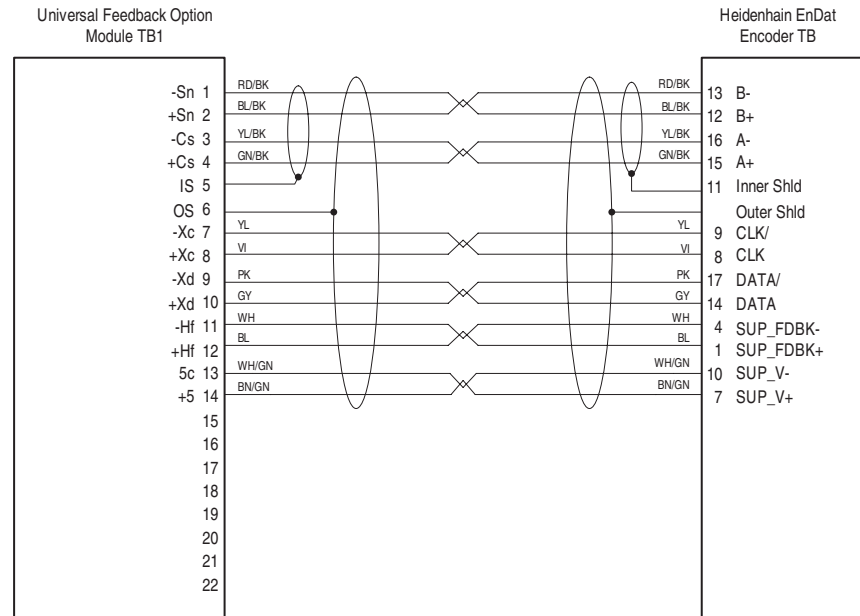
Figure E.3 Heidenhain Non-EnDat Rotary Encoder with Internal Power Supply

Note: Refer to Installation Instructions supplied with encoder for additional information.

Figure E.4 Heidenhain EnDat Rotary Encoder (ECN 412 EnDat01) with Internal Power Supply

Note: Refer to Installation Instructions supplied with encoder for additional information.

Figure E.5 Heidenhain EnDat Rotary Encoder (ECN 412 EnDat01) with Internal Power Supply



Note: Refer to Installation Instructions supplied with encoder for additional information.

Figure E.6 460V MP Series or Allen-Bradley 1326AB-BXXXX-M2L, -M2KXL, -S2I or -S2KXL Motor and a Stegmann Rotary Encoder connected via a 2090-CDNFDMP-SXX Cable

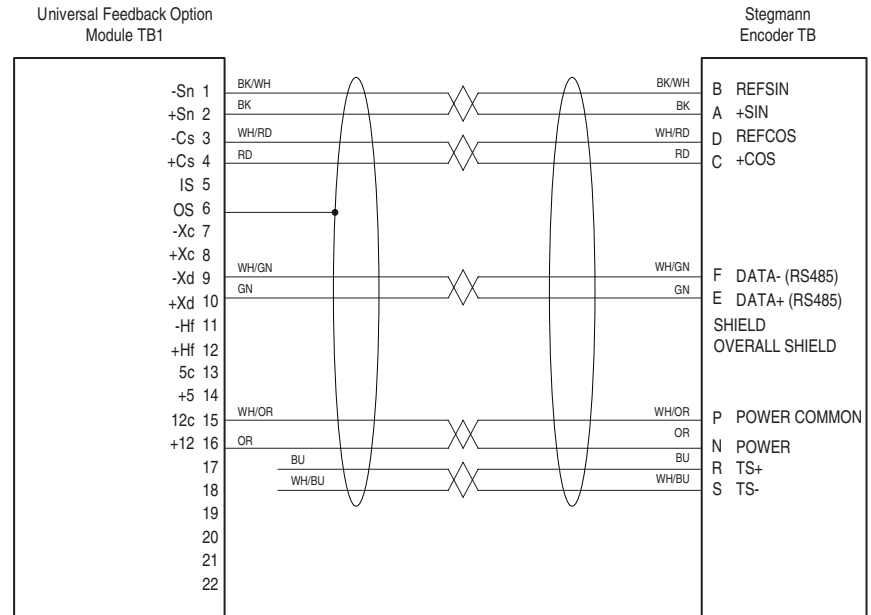
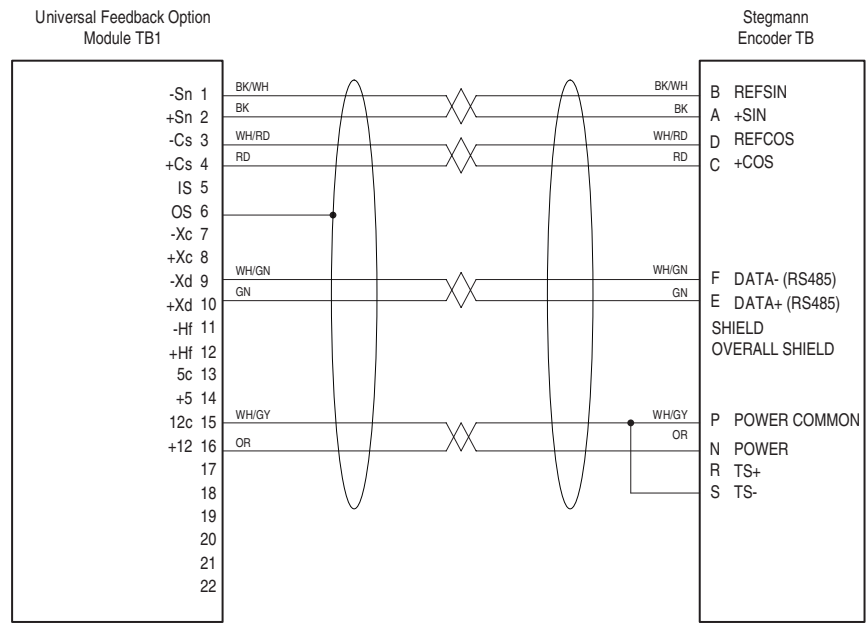


Figure E.7 460V MP Series or Allen-Bradley 1326AB-BXXXX-M2L, -M2KXL, -S2I or -S2KXL Motor and a Stegmann Rotary Encoder connected via a 2090-XXNFMP-SXX Cable



Note: The Thermal Switch cannot be accessed using the 2090-XXNFMP-SXX cable.

Figure E.8 230V MP Series Motor and a Stegmann Rotary Encoder connected via a 2090-UXNFDMP-SXX Cable

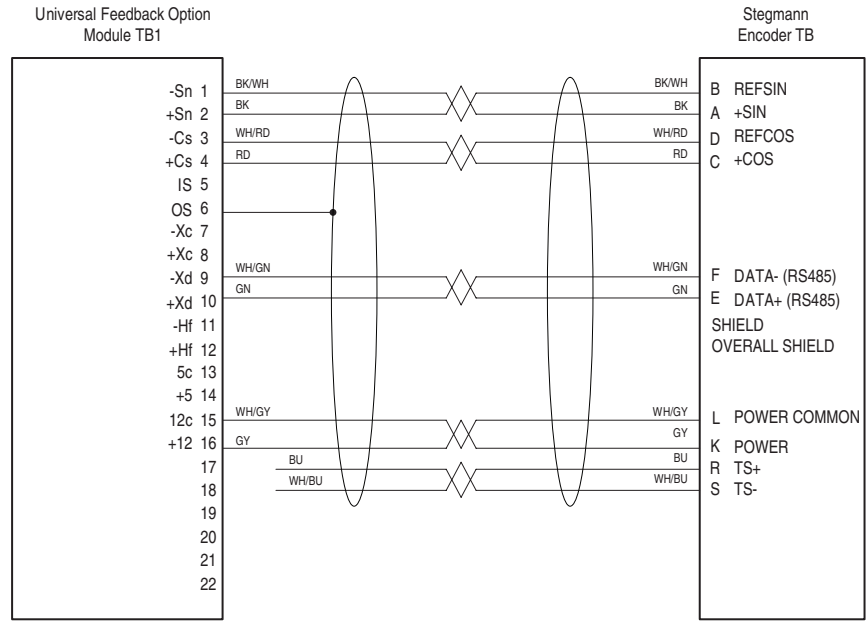
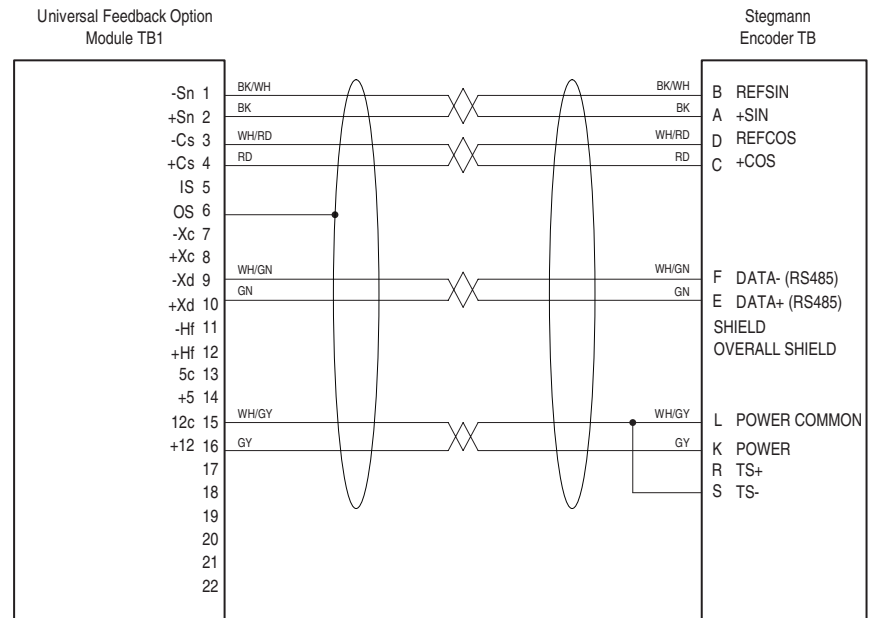


Figure E.9 230V MP Series Motor and a Stegmann Rotary Encoder connected via a 2090-XXNFMP-SXX Cable



Note: The Thermal Switch cannot be accessed using the 2090-XXNFMP-SXX cable.

Figure E.10 Stegmann Rotary Encoder connected via a 1326-CECU-XXL-XXX Cable

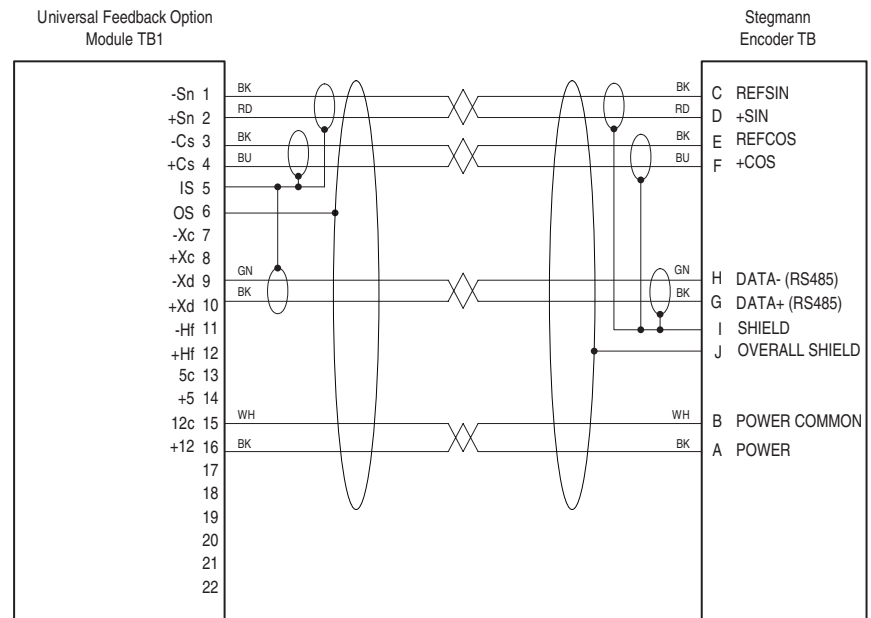


Figure E.11 Stegmann Rotary Encoder connected via a Pre-Attached, Shielded, Twisted Pair Cable

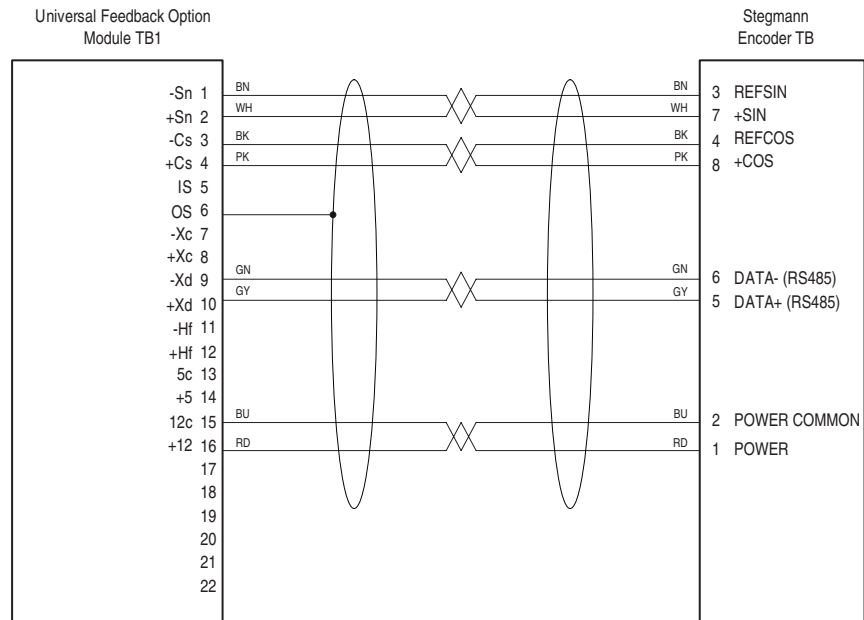


Figure E.12 Stegmann Rotary Encoder Connected via a Shielded, Twisted Pair Cable with an 8-pin Berg Style Connector

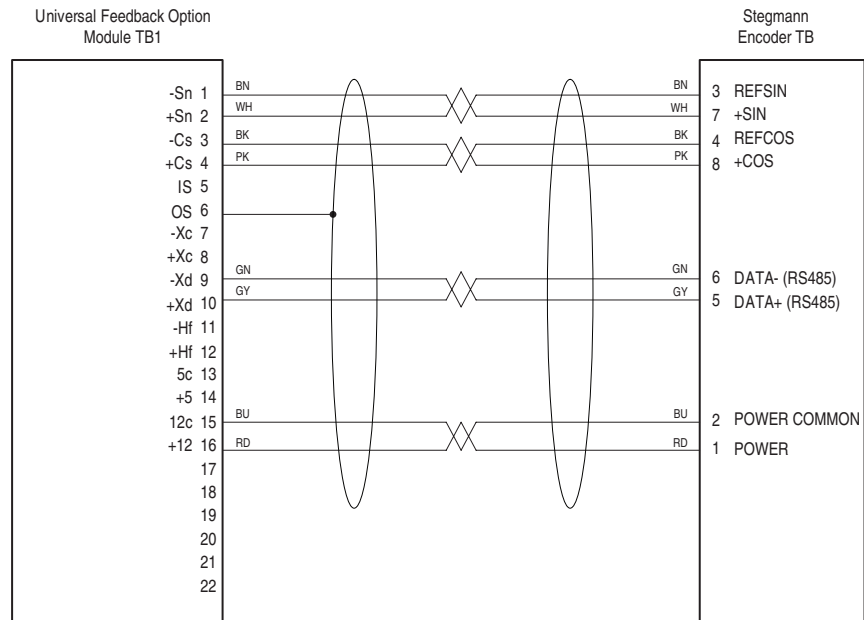


Figure E.13 Stegmann Rotary Encoder Connected via a Shielded, Twisted Pair Cable with a 10-pin MS Style Connector

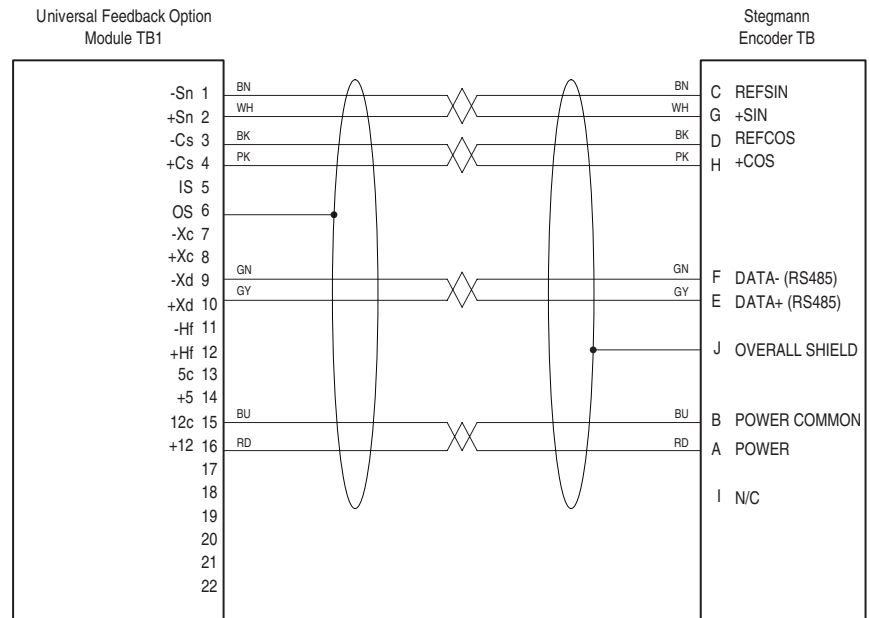


Figure E.14 Stegmann Rotary Encoder Connected via a Shielded, Twisted Pair Cable with a 12-pin DIN Style Connector

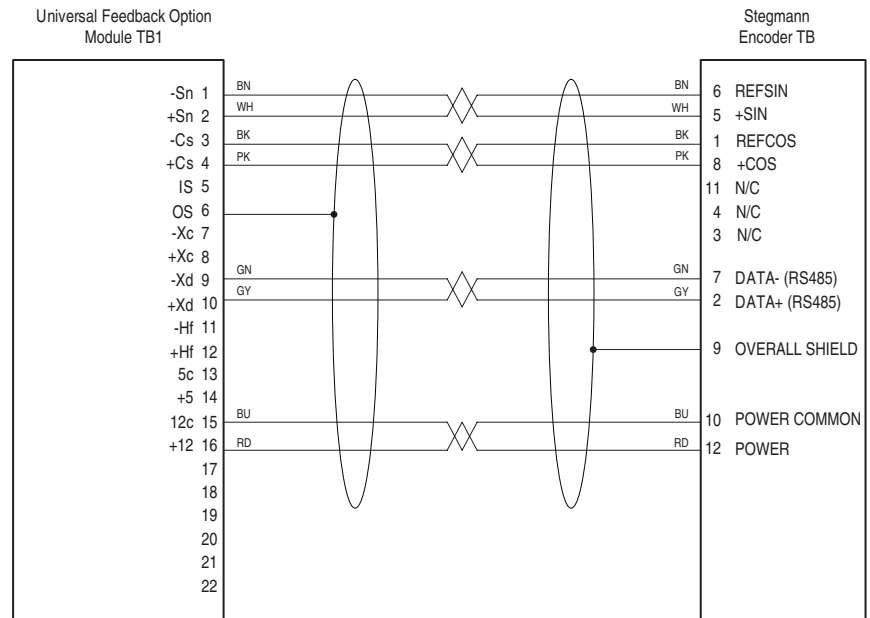


Figure E.15 460V MP Series Motor and a Rotary Encoder Connected via a 2090-CDNFDMP-SXX or 2090-XXNFMP-SXX Cable or Allen-Bradley 1326AB-BXXXX-M2L, -S2I or -S2KXL Motor and a Rotary Encoder Connected via a 2090-XXNFMP-SXX Cable

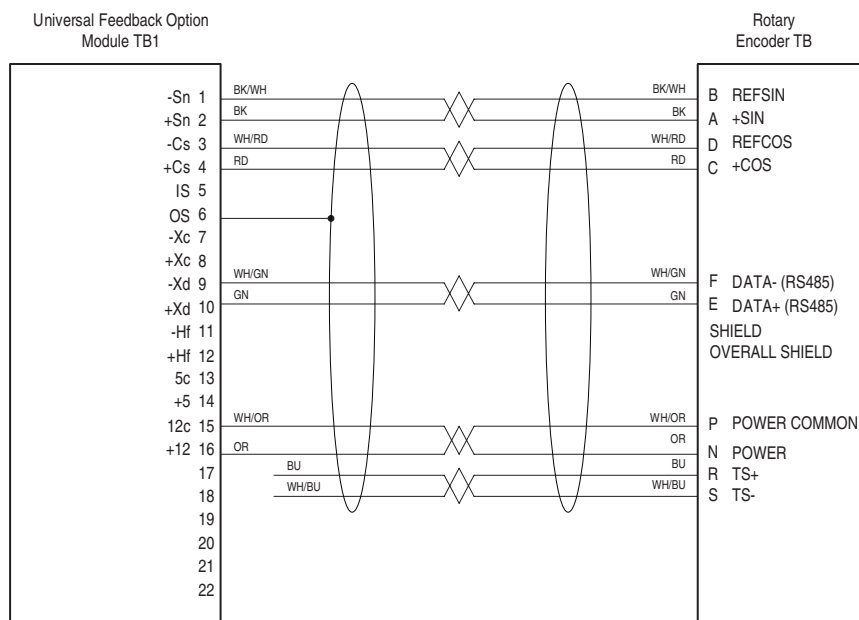
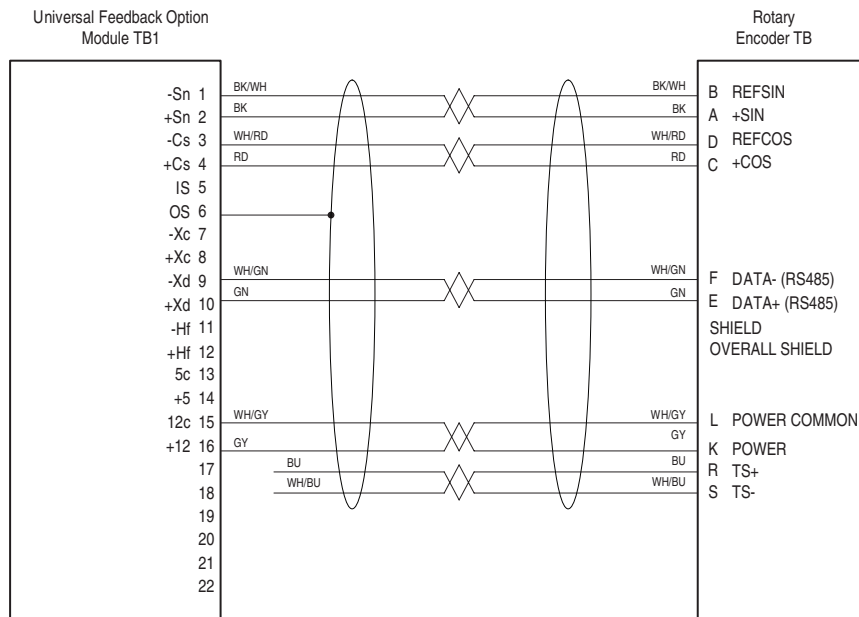


Figure E.16 230V MP Series Motor and a Rotary Encoder Connected via a 2090-UXNFDMP-SXX or 2090-XXNFMP-SXX Cable



**Universal Feedback Option
Module TB2**

-Hm	1
+Hm	2
-R0	3
+R0	4
-R1	5
+R1	6
-Yc	7
+Yc	8
-Yd	9
+Yd	10

**Linear Sensor
TB**

3	(+) Clock
4	(-) Clock
1	(-) Data
2	(+) Data
5	+24V DC
6	DC Ground
7	N/C

**Universal Feedback Option
Module TB1**

-Sn	1
+Sn	2
-Cs	3
+Cs	4
IS	5
OS	6
-Xc	7
+Xc	8
-Xd	9
+Xd	10
-Hf	11
+Hf	12
5c	13
+5	14
12c	15
+12	16
	17
	18
	19
	20
	21
	22

24V DC Power Supply

RD or BN	+ Power
WH	- Common

Figure E.18 Registration Sensor

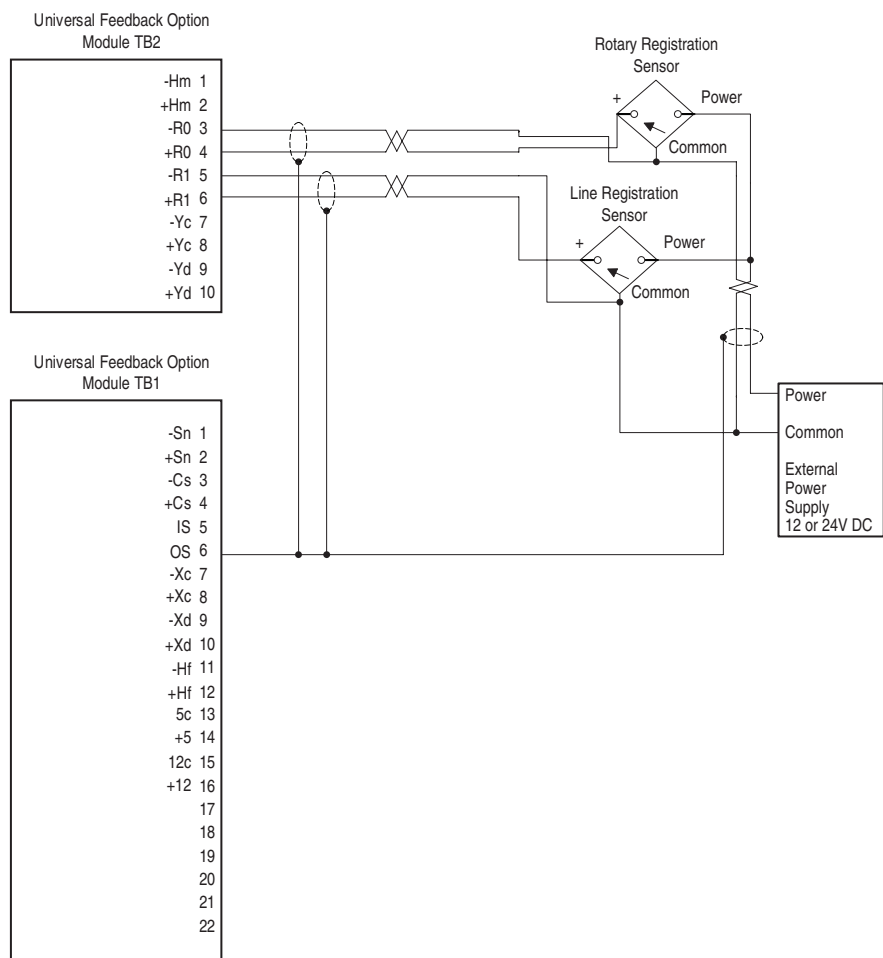
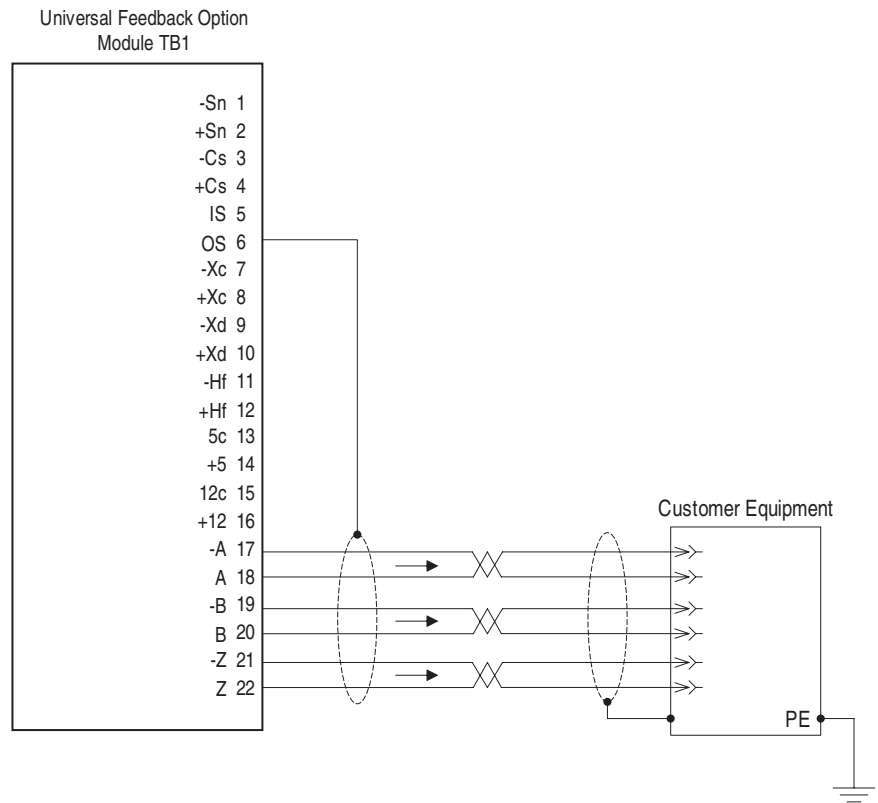


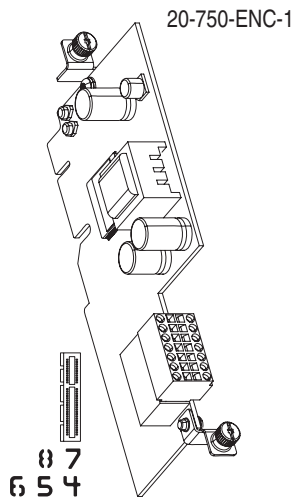
Figure E.19 Simulated Incremental Encoder Output

Notes:

Incremental Encoder Option Modules

For information on . .	See page . .
Specifications	E-1
Wiring Examples	E-3

Specifications



Single Encoder

Table F.A Single Incremental Encoder Specifications

Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA
Encoder Voltage Supply	5V DC minimum to 15V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length:	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

Table F.B TB1 Terminal Designations

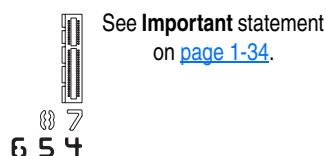
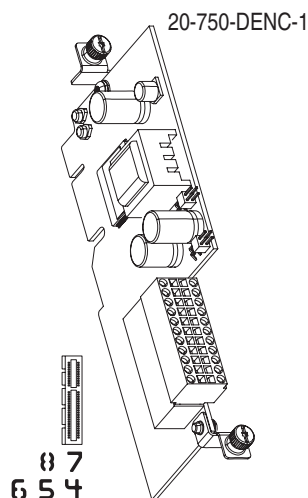
Terminal	Name	Description
Sd	Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.
12	+12 Volt DC Power	Power supply for encoder 250 mA.
Com	Common	+12V and +5V Common
5	+5 Volt DC Power	Power supply for encoder 250 mA.
A	Encoder A	Single channel or quadrature A input.
A-	Encoder A (NOT)	
B	Encoder B	Quadrature B input.
B-	Encoder B (NOT)	
Z	Encoder Z	Pulse, marker or registration input.
Z-	Encoder X (NOT)	
+24	+24 Volt	Power source for homing input.
24C	Common	
HmC	Homing Input Common	
Hm	Homing Input	Captures the AB edge counter.

Parameter Access

Refer to [Select A Device on page D-5](#) for instructions on how to access parameters on an option module.

Parameter Descriptions

Single Incremental Encoder option module parameter descriptions begin on page [page 3-131](#).



Dual Encoder

Table F.C Dual Incremental Encoder Jumper Settings

Jumper	Enabled Position	Storage Position
P3 - Safety Jumper Enables use with speed monitoring safety option (20-750-S1).		
P4 - 12V Jumper Enables use with 12 volt supply.		

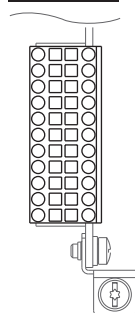
Table F.D Dual Incremental Encoder Specifications

Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA
Encoder Voltage Supply	5V DC minimum to 15V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length:	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

Table F.E Dual Incremental Encoder Terminal Designations

Terminal	Name	Description
EC	Common	+12V and +5V Encoder 0, common
ES	+12 or +5 Volt DC Power	Power supply for Encoder 0, 10 mA.
0A-	Encoder 0: A (NOT)	Single channel or quadrature A input.
0A	Encoder 0: A	
0B-	Encoder 0: B (NOT)	Quadrature B input.
0B	Encoder 0: B	
0Z-	Encoder 0: Z (NOT)	Pulse, marker or registration input.
0Z	Encoder 0: Z	
Sd	Encoder Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.
Sd	Encoder Shield	
EC	Common	+12V and +5V Encoder 1, common
ES	+12 or +5 Volt DC Power	Power supply for Encoder 1
1A-	Encoder 1: A (NOT)	Single channel or quadrature A input.
1A	Encoder 1: A	
1B-	Encoder 1: B (NOT)	Quadrature B input.
1B	Encoder 1: B	
1Z-	Encoder 1: Z (NOT)	Pulse, marker or registration input.
1Z	Encoder 1: Z	
24C	Common	Power source for homing input.
24	+24 Volt	
HmC	Homing Input Common	Captures the AB edge counter.
Hm	Homing Input	

EC	ES
0A-	0A
0B-	0B
0Z-	0Z
Sd	Sd
EC	ES
1A-	1A
1B-	1B
1Z-	1Z
24C	24
HmC	Hm



Parameter Access

Refer to [Select A Device on page D-5](#) for instructions on how to access parameters on an option module.

Parameter Descriptions

Dual Incremental Encoder option module parameter descriptions begin on page [page 3-133](#).

Wiring Examples

Single Incremental Encoder Option Module Connections

Figure F.1 Differential Dual Channel with Z Channel I

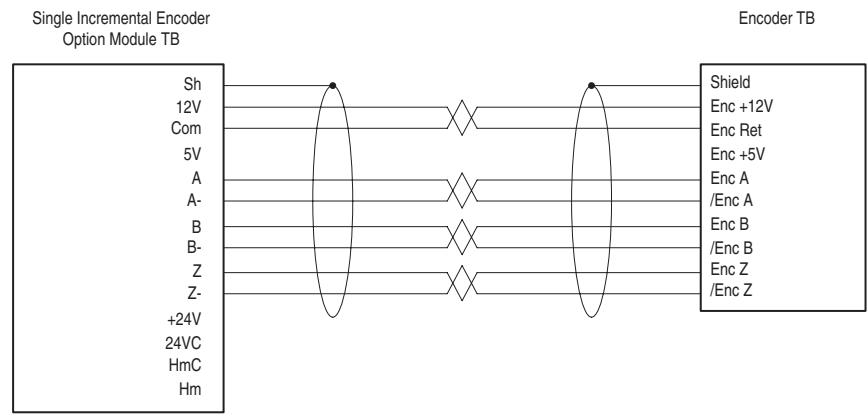


Figure F.2 Differential Dual Channel without Z Channel

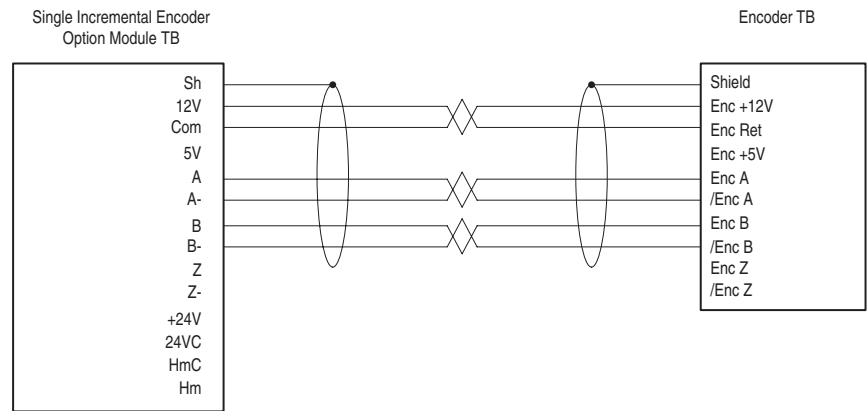


Figure F.3 Differential Dual Channel with Z Channel with External Power Supply

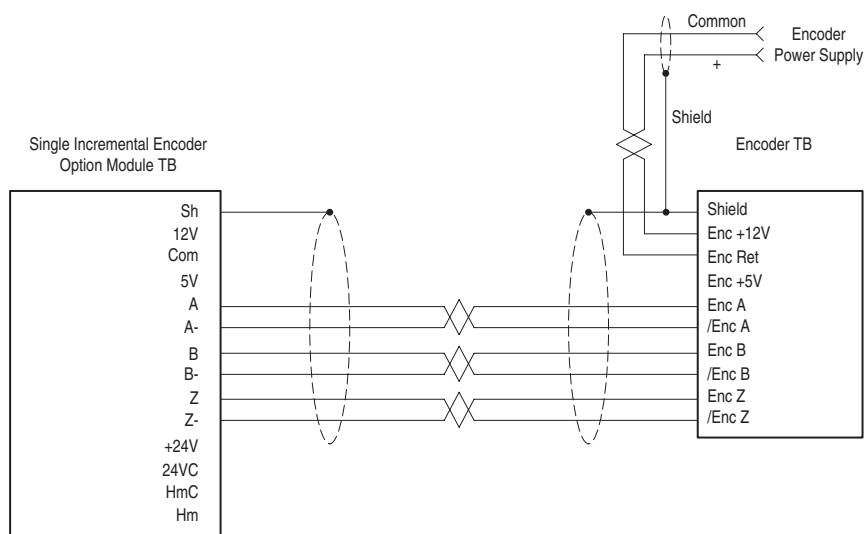
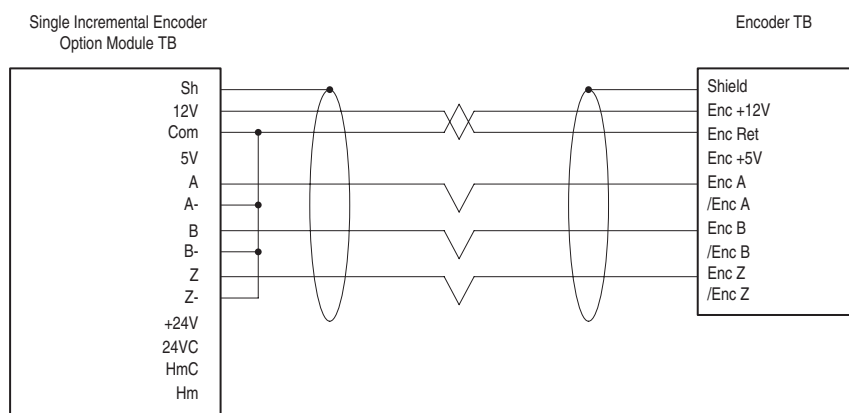
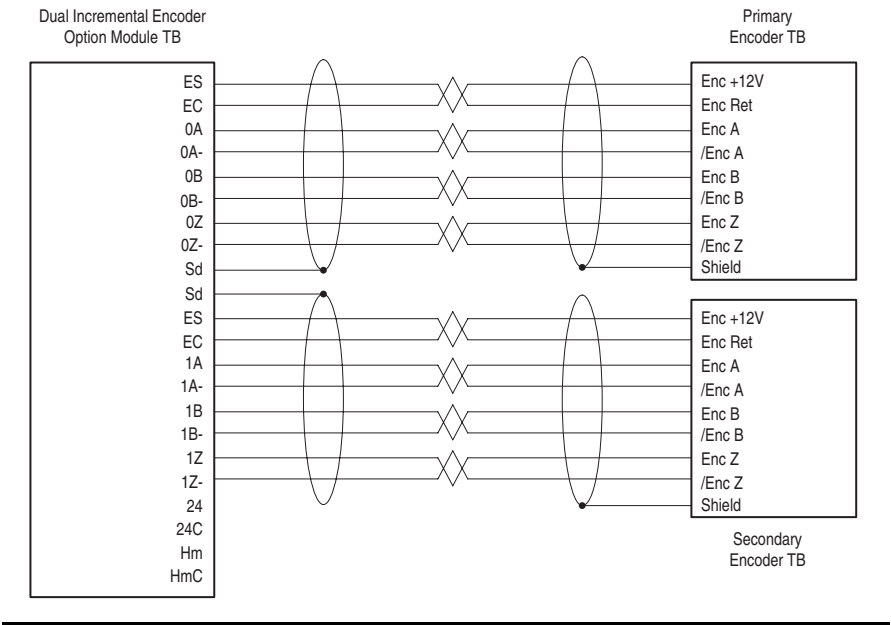


Figure F.4 Single-Ended, Dual Channel



Dual Incremental Encoder Option Module Connections

Figure F.5 Differential Dual Channel with Z Channel



Notes:

Using DeviceLogix

Introduction

DeviceLogix (DLX) is an embedded component located in Port 14 of the PowerFlex 750-Series drive. It is used to control outputs and manage status information locally within the drive. It can function stand-alone or complimentary to supervisory control.

DeviceLogix programming for the PowerFlex 750-Series drive is accomplished through a DeviceLogix Editor component ( icon), which is incorporated in the following versions of drive software:

- DriveExplorer v6.01 (and higher)
- DriveTools SP v5.01 (and higher)
- RSLogix 5000 Drive Add-On Profiles v2.01 (and higher)

Only the drive software tools listed above can be used to program the DeviceLogix component in the PowerFlex 750-Series drive. Other DeviceLogix Editors, such as RSNetWorx for DeviceNet, cannot be used.

The following DeviceLogix features are available with the PowerFlex 750-Series drive:

- Version 3 release of the DeviceLogix library
 - Analog instructions (compute, math, compare, etc.)
 - Multiple I/O enable line object support
 - Cut and Paste capability
 - Screen format retention
 - Online Help / Bit tool tip
- IEC 1131-3 Function block programming
- Program up to 90 function blocks
- 5ms update time (fixed) for the first 45 function blocks / 10ms total update time if 46 or more function blocks are used

The PowerFlex 750-Series DeviceLogix can provide basic logic capability for applications that can allow a 5...10 ms scan time plus the time it takes to update the I/O. It can be used in both networked and stand-alone environments. It can also operate autonomous of the drive. For example, it can continue executing if the drive is faulted, or disconnected from AC input power (requires PowerFlex 750-Series 24 VDC auxiliary power supply option).

Parameters

The following are the DeviceLogix parameters (located in Port 14).

File	Group	No.	Name Description	Values	Read-Write	Data Type
HOST GROUPS	Analog Outputs	1 Thru 16	DLX Out 01 DLX Out 16 Sixteen unsigned 32-bit integer outputs that can be controlled by the DeviceLogix program. These are typically mapped to a parameter to write its value. It can also be mapped to the Reference Command.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer
	Analog Inputs	17 Thru 32	DLX In 01 DLX In 16 Sixteen unsigned 32-bit integer inputs that can be read by the DeviceLogix program. These are typically mapped to a parameter to read its value. It can also be mapped to Common Feedback and Real Time Clock values.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer
	Digital Inputs	33 Thru 48	DLX DIP 01 DLX DIP 16 Sixteen digital inputs that can be read by the DeviceLogix program. These are typically mapped to an input point in an I/O option module or to Logic Status bits.	Default: 0.00 Min/Max: 0 / 159999.15	RW	32-bit Integer
	Status & Cntl	49	DLX DigIn Sts Provides the individual on/off status of the 16 DLX DIP's. Options DLX DIPVal16 DLX DIPVal15 DLX DIPVal14 DLX DIPVal13 DLX DIPVal12 DLX DIPVal11 DLX DIPVal10 DLX DIPVal9 DLX DIPVal8 DLX DIPVal7 DLX DIPVal6 DLX DIPVal5 DLX DIPVal4 DLX DIPVal3 DLX DIPVal2 DLX DIPVal1 Default 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition Off 1 = Condition On			
		50	DLX DigOut Sts Provides the individual on/off status of the DLX Logic Command word bits. Options DLX CmdSts16 DLX CmdSts15 DLX CmdSts14 DLX CmdSts13 DLX CmdSts12 DLX CmdSts11 DLX CmdSts10 DLX CmdSts9 DLX CmdSts8 DLX CmdSts7 DLX CmdSts6 DLX CmdSts5 DLX CmdSts4 DLX CmdSts3 DLX CmdSts2 DLX CmdSts1 Default 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition Off 1 = Condition On			
		51	DLX DigOut Sts2 Provides the individual on/off status of the 16 DLX DOPs. Options DLX DOPSts16 DLX DOPSts15 DLX DOPSts14 DLX DOPSts13 DLX DOPSts12 DLX DOPSts11 DLX DOPSts10 DLX DOPSts9 DLX DOPSts8 DLX DOPSts7 DLX DOPSts6 DLX DOPSts5 DLX DOPSts4 DLX DOPSts3 DLX DOPSts2 DLX DOPSts1 Default 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition Off 1 = Condition On			

File	Group	No.	Name Description	Values	Read-Write	Data Type
Host Groups	Status & Cntl	52	DLX Prog Cond Defines the action that will be taken when the DLX logic is disabled. “Fault” (0) – Drive is faulted and stopped. “Stop” (1) – Drive is stopped, but not faulted. “Zero Data” (2) – Output data sent to the drive from DLX is zero'd (does not command a stop). “Hold Last” (3) – Drive continues in its present state.	Default: 0 = “Fault” Options: 0 = “Fault” 1 = “Stop” 2 = “Zero Data” 3 = “Hold Last”	RW	Real
		53	DLX Operation Contains both operation commands as well as status information.	Default: 5 = “Logic Disabled” Options: 0 = “Enable Logic” 1 = “Disable Logic” 2 = “Reset Program” 3 = “Save Program” 4 = “Load Program” 5 = “Logic Disabled” 6 = “Logic Enabled”	RW	Real
	Internal Regs	54 Thru 69	DLX Real SP1 DLX Real SP16 Sixteen 32-bit Real scratchpad registers for DLX program use.	Default: 0 Min/Max: –/+220000000	RW	32-bit Integer
		70 Thru 77	DLX DDINT SP1 DLX DDINT SP8 Eight 32-bit Integer scratchpad registers for DLX program use.	Default: 0 Min/Max: –2147483648 / 2147483647	RW	32-bit Integer
		78 Thru 81	DLX Bool SP1 DLX Bool SP4 Four 32-bit Boolean scratchpad registers (128 bits total) for DLX program use.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer

Function Block Elements

The following function block elements are available:

Bit and Analog I/O ⁽¹⁾	   
Process	 
Filter	
Select/Limit	 
Statistical	
Timer/Counter	    
Compare	      
Compute/Math	        
Move/Logical	        

⁽¹⁾ Bit and Analog I/O do not count against the Function Block total (90 max.). All other elements count, with each instance counting as one Function Block.

The DeviceLogix Editor provides a graphical interface for configuring Function Blocks to provide local control within the drive. DeviceLogix Editor navigation and programming basics is not covered in this manual. Refer to the DeviceLogix User Manual, publication RA-UM300A for additional information. It can be found on the RA Literature Library web site at: <http://www.rockwellautomation.com/literature>.

Bit and Analog I/O Points



The DeviceLogix controller in Port 14 uses (48) bit inputs, (48) bit outputs, (24) analog inputs, and (17) analog outputs to interact with the other ports in the drive (both drive and peripheral parameters).

Bit Inputs

Available bit inputs to the DeviceLogix program include:

Bit Inputs	Description
(16) Hardware Boolean Inputs DIP1 to DIP 16	These correlate with DeviceLogix Port 14 parameters P33 [DLX DIP 01] to P48 [DLX DIP 16]
(32) Network Boolean Inputs Ready, Active, Alarm, Faulted, etc.	These correlate with the DeviceLogix Logic Status word for the drive. Refer to page A-8 for details on the Logic Status word bits.

Bit inputs are used to connect to real-world input devices (pushbuttons, photoeyes, etc.) that are wired to an I/O option module in the drive, monitor drive status, or to read a bit in a bit-enumerated parameter.

Bit Outputs

Available bit outputs from the DeviceLogix program include:

Bit Outputs	Description
(16) Hardware Boolean Outputs • DOP1 to DOP 16	These correlate with the bits in DeviceLogix Port 14 parameter Pr. 51 [DLX DigOut Sts2]
(32) Network Boolean Outputs • Stop, Start, Jog1, Clear Faults, etc.	These correlate with the DeviceLogix Logic Command word for the drive. Refer to page A-7 for details on the Logic Command word bits. These bits can also be monitored in DeviceLogix Port 14 parameter Pr. 50 [DLX DigOut Sts].

Bit Outputs are used to connect to real-world output devices (pilot lights, relays, etc.) that are wired to an I/O option module in the drive, to directly control the drive via Logic Command bits, or to write a bit in a bit-enumerated parameter.

Analog Inputs

Available analog inputs to the DeviceLogix program include:

Analog Inputs	Description
(17) Network Analog Inputs • Common Feedback (Real) • DLX In 01 to DLX In 14 (Real) • DLX In 15 to DLX In 16 (DINT)	The Common Feedback correlates with the Feedback word for the drive. The DLX In's correlate with DeviceLogix Port 14 parameters Pr. 17 [DLX In 01] to Pr.32 [DLX In 16]
(7) Miscellaneous Analog Inputs • Real Time Clock data	Year, Month, Day, DayofWeek, Hour, Minute, and Second from the Real Time Clock in the drive

Analog Inputs are used to connect to real-world input devices (sensor, potentiometer, etc.) that are wired to an I/O option module in the drive, monitor drive Feedback, read the real Time Clock, or to read a drive / peripheral parameter.

Analog Outputs

Available analog outputs from the DeviceLogix program include:

Analog Outputs	Description
(17) Network Analog Outputs • Reference Command (Real) • DLX Out 01 to DLX Out 14 (Real) • DLX Out 15 to DLX Out 16 (DINT)	The Reference Command correlates with the Reference word for the drive. The DLX Out's correlate with DeviceLogix Port 14 parameters Pr. 1 [DLX Out 01] to Pr.16 [DLX Out 16]

Analog Outputs are used to connect to real-world output devices (meter panel, valve, etc.) that are wired to an I/O option module in the drive, control the Reference to the drive, or to write a drive / peripheral parameter.

Tips

Data types

Note that different data types are supported by the DeviceLogix Analog In/ Out parameters. For example, P17 [DLX In 01] is a Real whereas P32 [DLX In 16] is a DINT. Be sure to assign a DLX In / Out to a parameter that has the same data type.

Function Block elements also support different data types. Click on the Properties Button  in the upper right-hand corner of each element to display the Function Block's properties. The Function Data Type field displays the supported data types. Note that if Real DLX Ins are used with a Function Block element configured for DINT (typical default), the fraction will be truncated.

Datalinks and internal DeviceLogix scratchpad registers (P54 – P81)

DLX In's and DLX Out's are Datalinks and can not be directly mapped to each other or another Datalink, such as a Datalink in the Port 13 Embedded Ethernet. Use the DeviceLogix internal scratchpad registers to pass data between the Datalinks.

Example 1 – Reading data from the network

A value from the network is input to DLX Real SP 1.

N:P.P.#	Name	Value
[11: 13.1]	DL From Net 01	Port 14: DLX Real SP1

DLX Real SP1 is read by DLX In 01 and can now be used as an Analog Input in the DeviceLogix program.

N:P.P.#	Name	Value
[11: 14.17]	DLX In 01	Port 14: DLX Real SP1

DLX Real SP1 is the intermediary register that allows the two Datalinks to work together.

Example 2 – Writing data to the network

The DeviceLogix program controls an Analog Output value in DLX Out 01 which is written to DLX Real SP2.

N:P.P.#	Name	Value
[11: 14.1]	DLX Out 01	Port 14: DLX Real SP2

The DLX Real SP2 value is output to the network.

N:P.P.#	Name	Value
[11: 13.17]	DL To Net 01	Port 14: DLX Real SP2

DLX Real SP2 is the intermediary register that allows the two Datalinks to work together.

Program Examples

Example 1: Selector Switch Operation

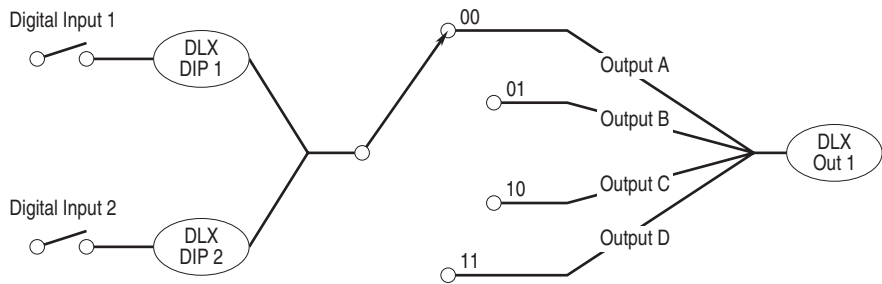
This example demonstrates how a selector switch operation similar to the feature in the PowerFlex 700S can be achieved through the embedded DeviceLogix in the PowerFlex 750-Series drive. A Selector switch is simulated in the drive using a combination of inputs to produce multiple outputs. Digital inputs in the drive are used to output configurable multiple preset speeds (75 Hz, 85Hz, 95Hz, and 105Hz) to Pr. 571 [Preset Speed 1]. It is assumed that the 750-Series drive has an I/O module installed in Port 4.

The truth table below represents the inputs and outputs for a 4 position selector switch.

Inputs		Outputs	
Input 1	Input 2	Binary Output	Selector Switch Output
0	0	0	Output A
0	1	1	Output B
1	0	2	Output C
1	1	3	Output D

The Logic Map below offers a high level explanation of how the above outputs are achieved.

Figure G.1 Two Input Four Position Selector Switch Logic Map



Discrete Inputs in the Drive are used for Inputs 1 and Input 2. Output A, B, C, and D are linked to DeviceLogix Scratchpad Registers. This allows further flexibility to modify the values of these outputs.

The resulting output can be linked to a parameter and used in supporting drive applications, such as configuring multiple preset speeds, point to point positioning, etc. In this example, it controls Preset Speed 1.

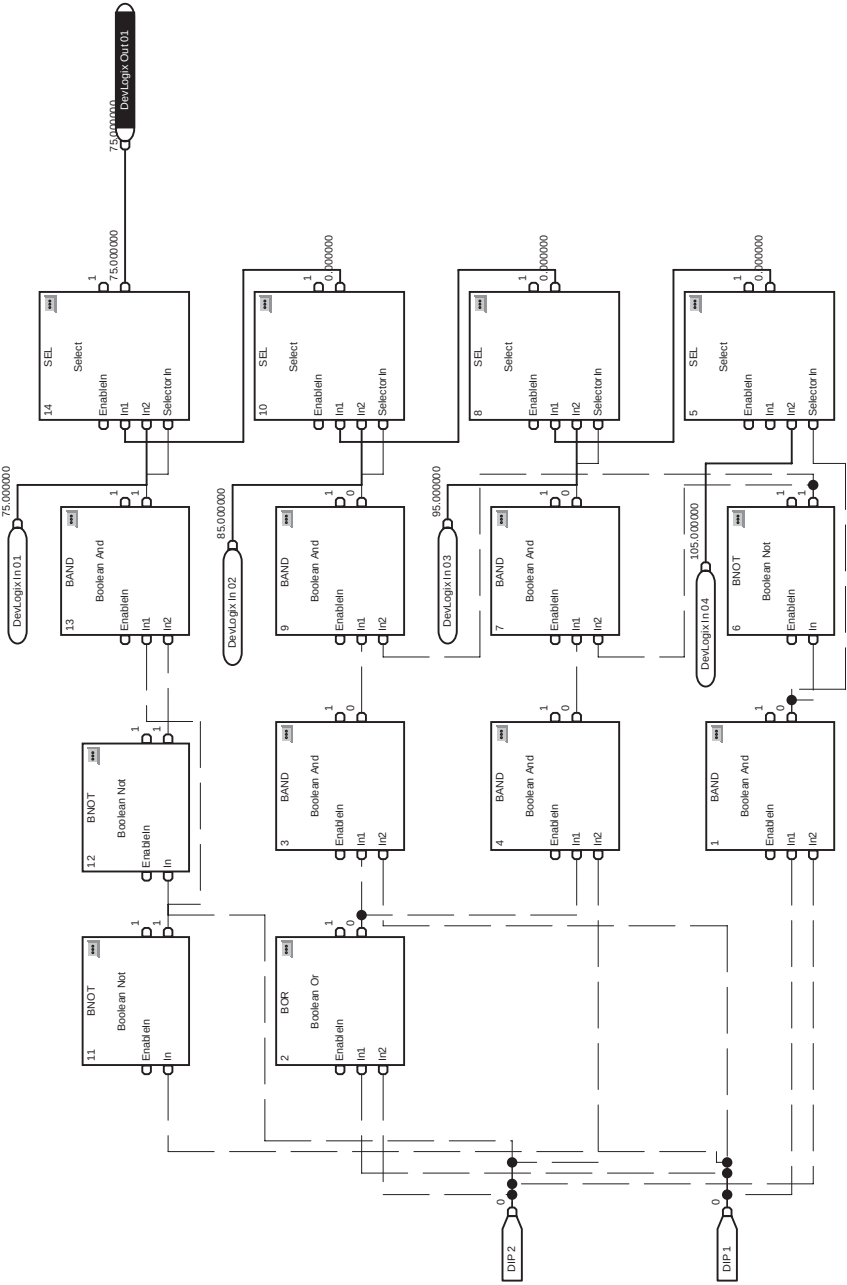
Parameter Configuration

The following parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
14.1	DLX Out 01	Port 0:Preset Speed 1	
14.33	DLX DIP 1	Port 4: Dig In Status.Input 1	Digital input 1 from Selector Switch
14.34	DLX DIP 2	Port 4: Dig In Status.Input 2	Digital input 2 from Selector Switch
14.17	DLX In 01	Port 14: DLX Real SP1	Output A
14.18	DLX In 02	Port 14: DLX Real SP2	Output B
14.19	DLX In 03	Port 14: DLX Real SP3	Output C
14.20	DLX In 04	Port 14: DLX Real SP4	Output D
14.54	DLX Real SP1	75.00	Output A Preset Speed
14.55	DLX Real SP2	85.00	Output B Preset Speed
14.56	DLX Real SP3	95.00	Output C Preset Speed
14.57	DLX Real SP4	105.00	Output D Preset Speed
0.571	Preset Speed 1	varies	Resulting output from Selector Switch

Functional Block Programming

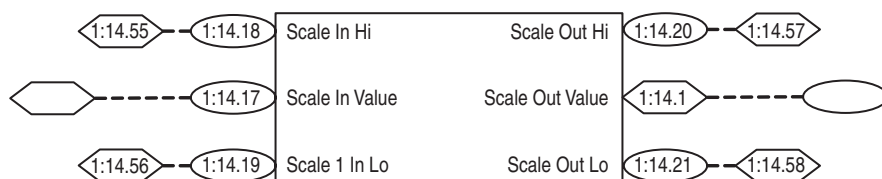
The Selector Switch Operation example consists of 14 blocks that are shown below.



Example 2: Scale Block Operation

This example demonstrates how a scale block operation similar to the feature in the PowerFlex 700VC can be achieved through the embedded DeviceLogix in the PowerFlex 750-Series drive. A Scale Block scales a parameter value and the input of the block is linked to a parameter that is desired to be scaled. The scale block also has both input and output high limits and low limit parameters.

Figure G.2 Scale Block High Level View



Scale In Hi determines the high value for the input to the scale block.

Scale Out Hi determines the corresponding high value for the output of the scale block.

Scale In Low determines the low value for the input to the scale block.

Scale Out Lo determines the corresponding low value for the output of the scale block.

Scale Out Value of the block is then available for user to link to any parameter that accepts links.

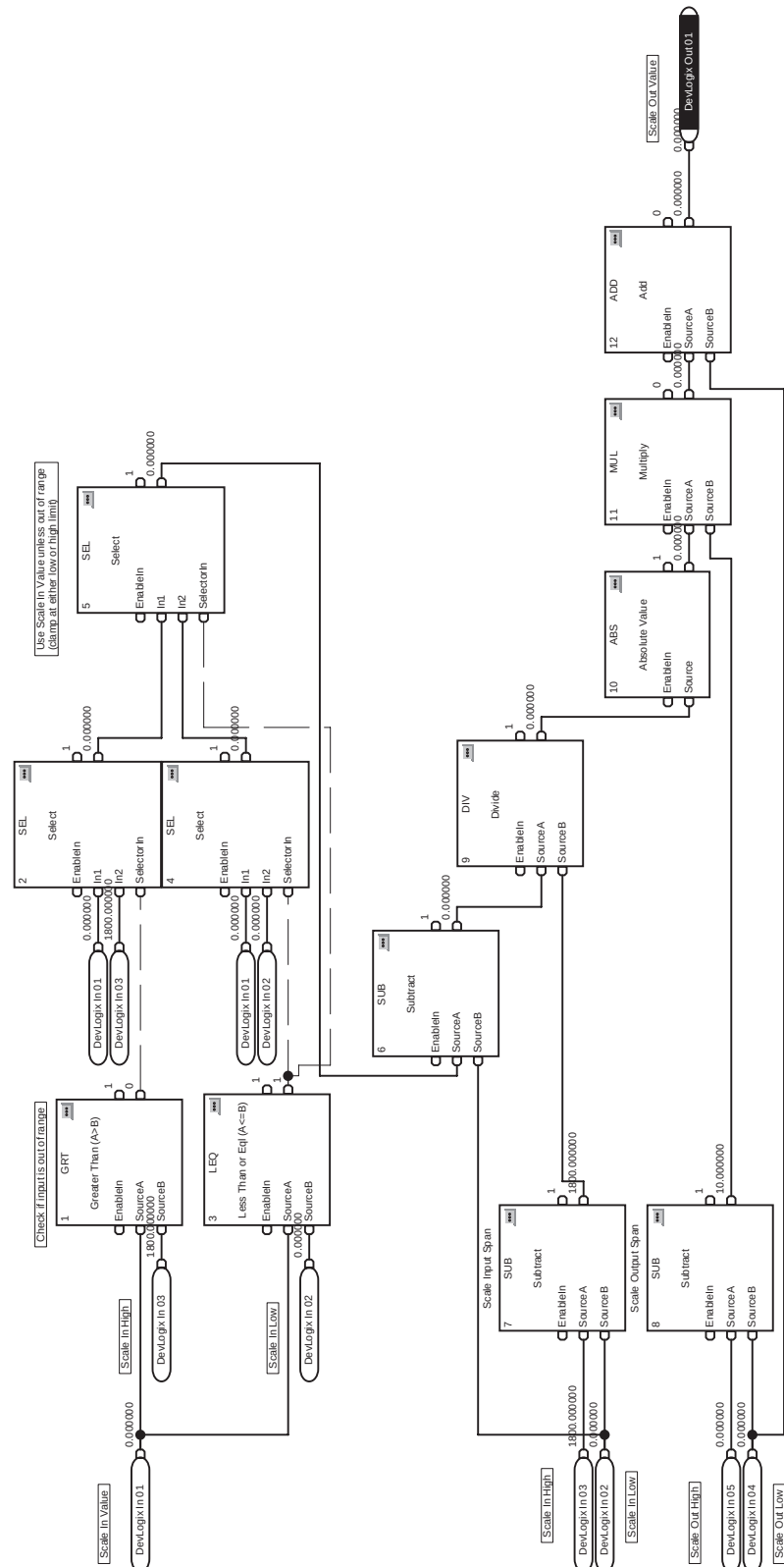
Parameter Configuration

The following DeviceLogix parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
14.1	DLX Out 01	* Set this to where the Scale Output value should go *	
14.17	DLX In 01	* Set this to your Scale Input value source *	
14.18	DLX In 02	Port 14: DLX Real SP2	Scale In Low
14.19	DLX In 03	Port 14: DLX Real SP3	Scale In High
14.20	DLX In 04	Port 14: DLX Real SP4	Scale Out Low
14.21	DLX In 05	Port 14: DLX Real SP5	Scale Out High
14.55	DLX Real SP2	0.0	Scale In Low value
14.56	DLX Real SP3	1800.00	Scale In High value
14.57	DLX Real SP4	0.000	Scale Out Low value
14.58	DLX Real SP5	10.00	Scale Out High value

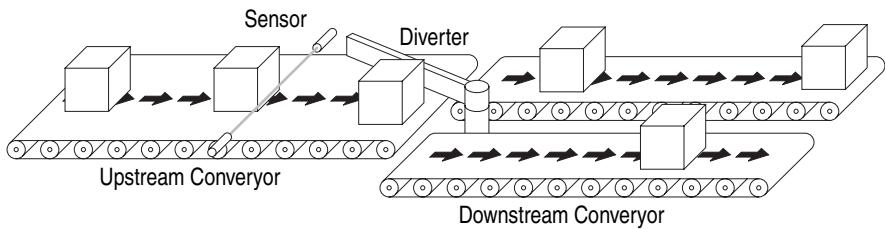
Functional Block Programming

The Selector Switch Operation example consists of 12 blocks that are shown below.



Example 3: Diverter Operation

This example demonstrates basic control logic to operate a diverter in a conveyor system. The diverter directs parts from an upstream conveyor to one of two downstream conveyors. It alternately sends ‘x’ parts down each downstream conveyor.



The application consists of the following discrete I/O:

Type	Name	Description
Inputs	Part Present Sensor	Identifies that a part is present
Outputs	Diverter Actuator	Controls the diverter actuator to direct the flow of parts

Example logic requirements:

- If Part Present Sensor is ON, then increment the parts counter
- If parts counter preset is reached, reset the counter and alternately set or reset the Diverter Actuator

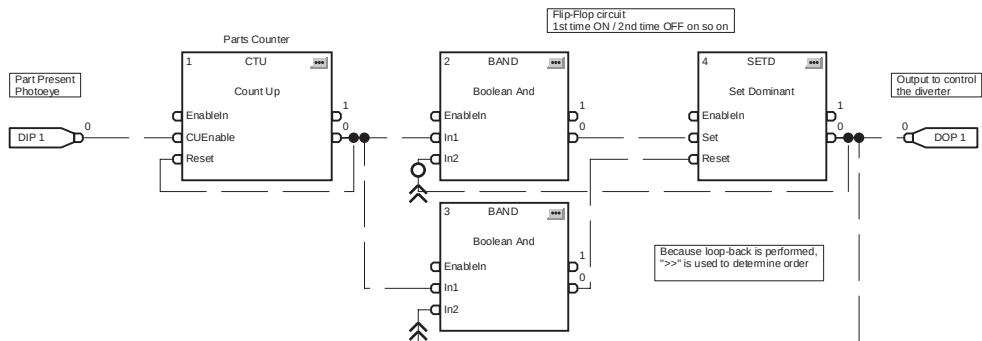
Parameter Configuration

The following parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
4.20	TO0 Select	Port 14: DLX DigOut Sts2.DLX DOPSts0	Output on I/O module in Port 4
14.33	DLX DIP 1	Port 4: Dig In Status.Input 1	Part Present Sensor input (I/O module in Port 4)
14.51	DLX DigOut Sts2		Diverter Actuator output

Functional Block Programming

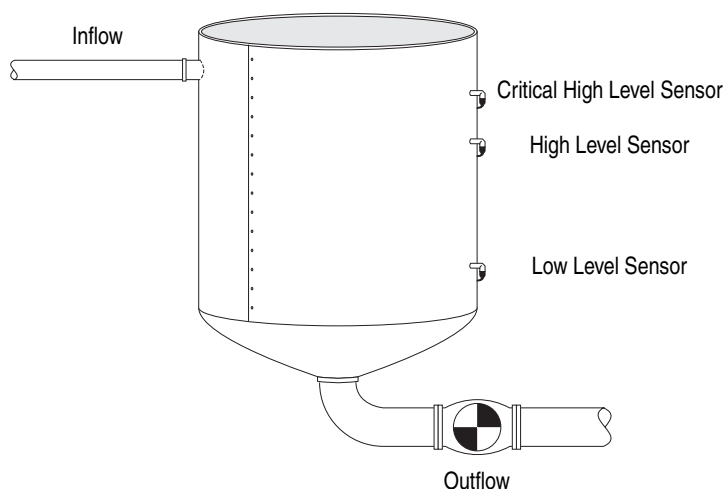
This example consists of 4 blocks that are shown below.



Example 4: Wet Well Operation

This example demonstrates how basic control logic can be used for simple applications. It is assumed that the PowerFlex 755 has an I/O module installed in Port 4.

Figure G.3 Wet Well



The application consists of the following discrete I/O:

Type	Name	Description
Inputs	Fault Reset pushbutton	Used to reset any faults or alarms
	Critical High Level sensor	Indicates a critically high level. It is normally a backup to the High Level sensor and is also used to detect if the High Level sensor is faulty. When ON, the drive will operate at an even higher output frequency in case it is due to a high inflow.
	High Level sensor	Indicates the well is at a high level and it is time to start pumping (normal operation). The drive operates at a 'normal' rate unless the Critical High Level was reached.
	Low Level sensor	When OFF, it is used to indicate that the well is empty (as long as the High and Critical High Level sensors are also OFF). The drive stops operating (end of pumping cycle).
Outputs	Sensor Fault pilot light	Indicates that there is a problem with either the High Level or Low Level sensors
	Too Much Time Alarm pilot light	If the drive operates for more than the normal amount of time it takes to empty the well, there may be increased inflow or perhaps the Low Level sensor is stuck ON. An alarm indication is made and the drive continues to operate.
	Critical High Fault flashing light / alarm horn	Indicates a critically high level that requires immediate attention.

Example logic requirements:

- If Critical High Level or High Level sensor is ON, then start the drive.
 - If Critical High Level sensor is ON, then switch to higher rate (90Hz) for the rest of the pumping cycle. Else run at the normal rate (60Hz)
 - Run until all three level sensors are OFF
 - Pump should run at least ‘x’ minutes at a minimum. If the Low Level sensor fails, this prevents the High Level sensor from cycling the pump On/Off too quickly.
- Annunciate a Sensor Fault condition
 - The Low Level sensor should never be OFF when either the High Level or Critical High Level sensors are ON
 - The High Level sensor should never be OFF when the Critical High Level sensor is ON
 - The Critical High Level sensor should never be ON when either the High Level or Low Level sensors are OFF
- Annunciate a Critical High Level condition
 - The Critical High Level output should never be ON
- Annunciate if pumping cycle time is longer than normal (‘y’ minutes)
 - Monitor the amount of time a pump cycle takes by timing how long the drive is operating.
 - If greater than ‘y’ minutes, energize the Too Much Time Alarm output
- Reset alarms / faults with a Reset pushbutton input

Parameter Configuration

The following parameters are configured for this example.

The following DeviceLogix parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
0.520	Max Fwd Speed	90.00	
0.545	Speed Ref A Sel	Port 0: Preset Speed 1	
0.571	Preset Speed 1	60.00	Normal pumping rate (60Hz)
0.573	Preset Speed 3	90.00	High speed pumping rate (90Hz)
4.10	RO0 Select	Port 14: DLX DigOut Sts2.DLX DOPSts0	Sensor Fault output
4.20	TO0 Select	Port 14: DLX DigOut Sts2.DLX DOPSts1	Critical High Level Fault output
4.30	TO1 Select	Port 14: DLX DigOut Sts2.DLX DOPSts2	Too Much Time Alarm output
14.33	DLX DIP 1	Port 4: Dig In Status.Input 1	Critical High Level Sensor input
14.34	DLX DIP 2	Port 4: Dig In Status.Input 2	High Level Sensor input
14.35	DLX DIP 3	Port 4: Dig In Status.Input 3	Low Level Sensor input
14.36	DLX DIP 4	Port 4: Dig In Status.Input 4	Alarm / Fault Reset pushbutton input

Functional Block Programming

This example consists of 16 blocks that are shown below.

Figure G.4 Control Circuit

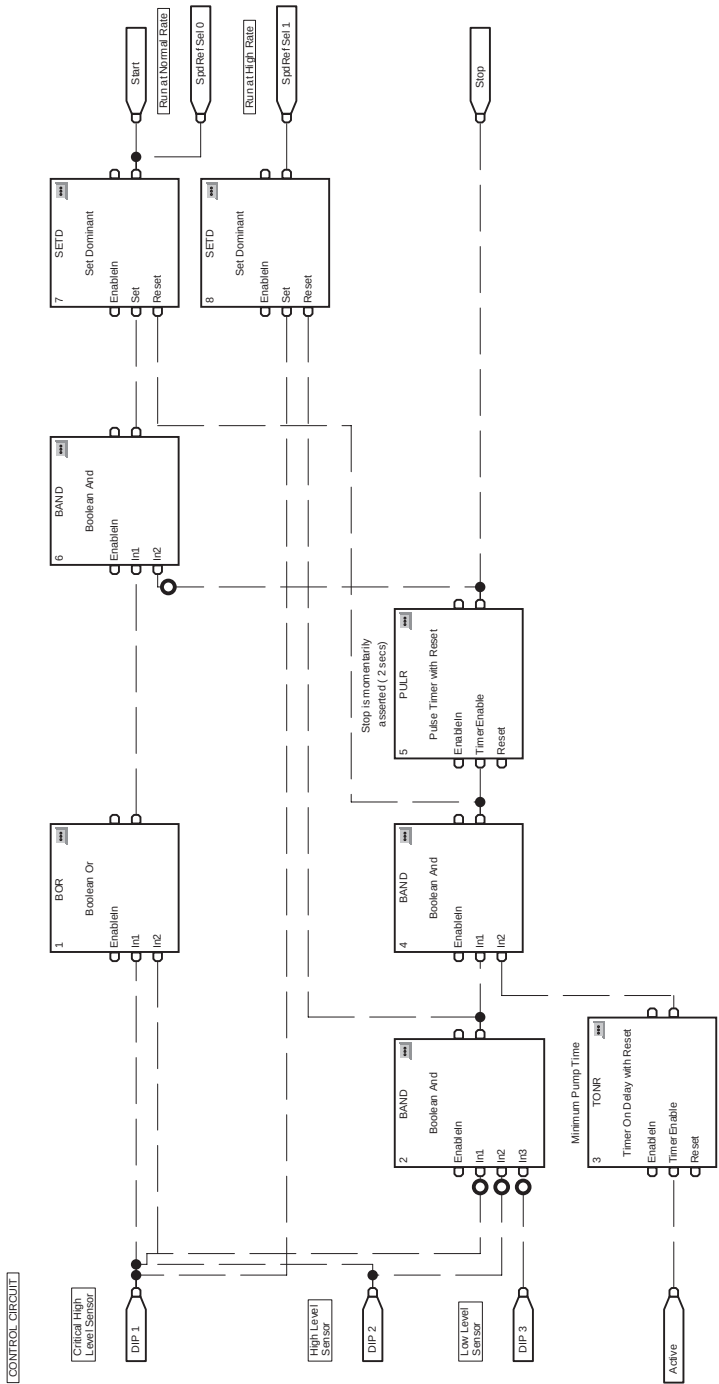
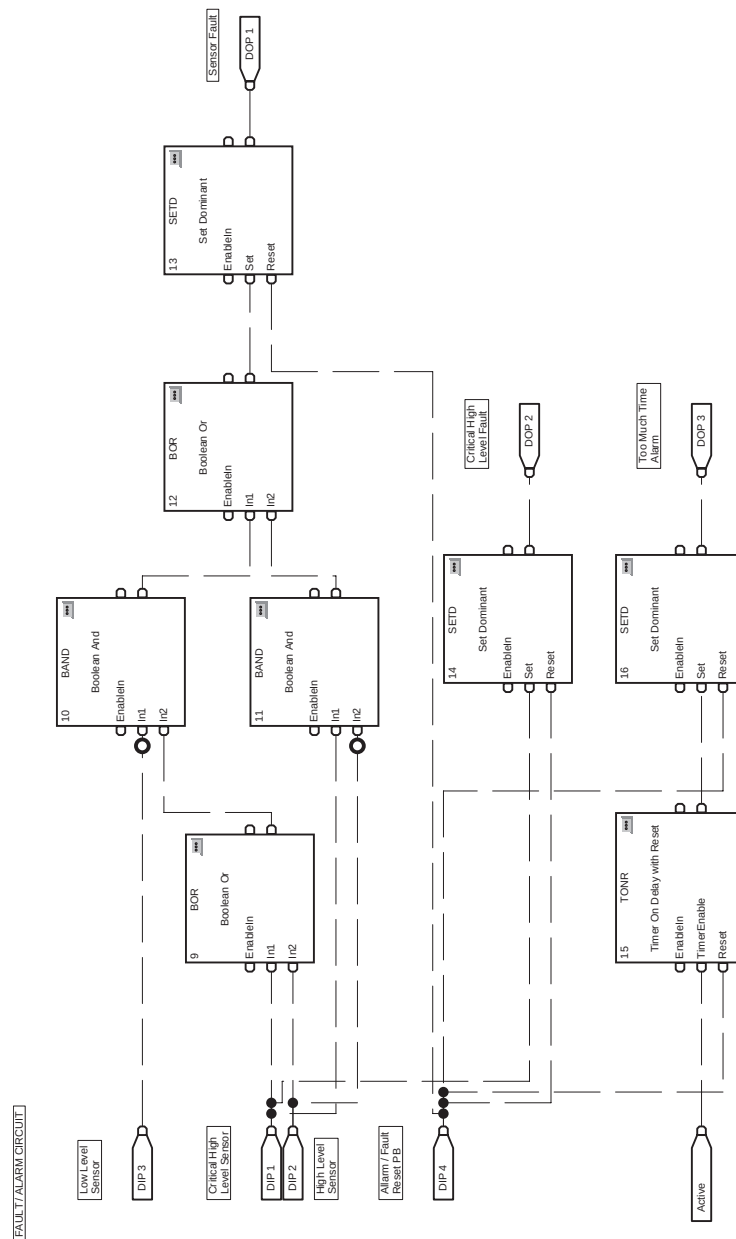


Figure G.5 Fault/Alarm Circuit



Example 5: Utilizing the Real Time Clock

This example demonstrates how to utilize the PowerFlex 750-Series drive Real Time Clock in a DeviceLogix program.

Example logic requirements:

- Run the drive Monday through Friday between 7:45AM and 5:15PM

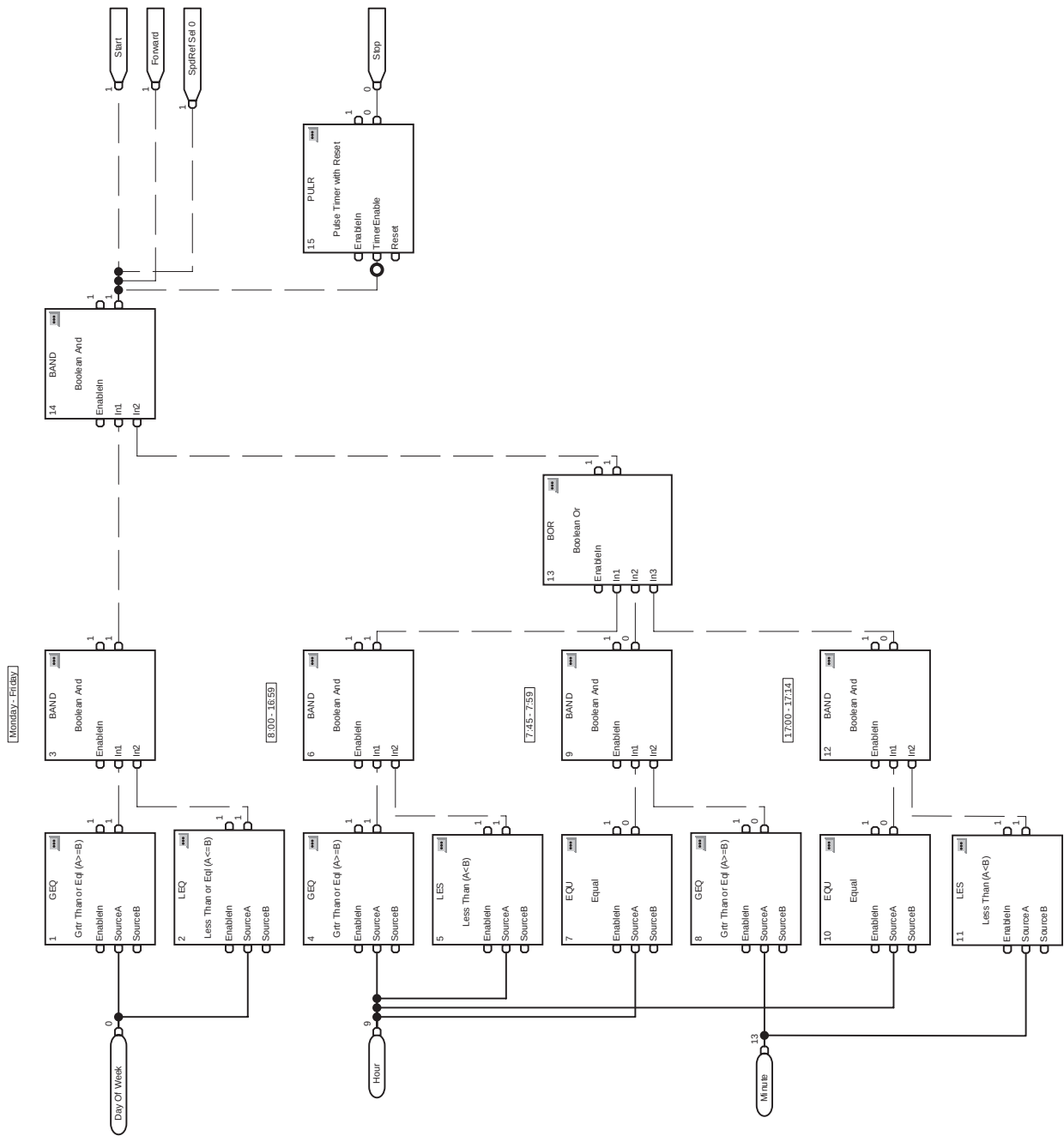
Parameter Configuration

The following parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
0.545	Speed Ref A Sel	Port 0: Preset Speed 1	
0.571	Preset Speed 1	60.00	Operating speed of drive

Functional Block Programming

This example consists of 15 blocks that are shown below.



Notes:

PowerFlex 750-Series Permanent Magnet Motor Specifications

Compatible Permanent Magnet Motors

The following table contains a list of specifications for the permanent magnet motors compatible with PowerFlex 750-Series drives. Note that you must have a high resolution Stegmann or compatible resolver.

Table H.A Motor Name Plate and Rating Specifications

Model Number	Motor NP Volts (line to line V rms)	Motor NP Amps (A rms)	Motor NP Hertz (Hz)	Motor NP RPM (oper. rpm)	Motor NP Power (kW)	Motor Poles	Current peak (A rms)	System Cont. Stall Torque (N•m)	Motor Max RPM (rpm)
Parameter #	25	26	27	28	30	31			
MPL-A310P	230	3.4	294.0	4410	0.73	8	9.9,	1.58	5000
MPL-A310F	230	2.1	185.3	2780	0.46	8	6.6	1.58	3000
MPL-A320P	230	6.4	271.3	4070	1.30	8	20.9	3.05	5000
MPL-A320H	230	4.6	208.7	3130	1.00	8	13.6	3.05	3500
MPL-A330P	230	8.5	280.7	4210	1.80	8	26.9	4.08	5000
MPL-A420P	230	9.0	268.7	4030	2.00	8	32.5	4.74	5000
MPL-A430P	230	11.9	234.0	3510	2.20	8	47.4	5.99	5000
MPL-A430H	230	8.6	184.7	2770	1.80	8	31.8	6.21	3500
MPL-A4520P	230	12.4	234.0	3510	2.20	8	35.4	5.99	5000
MPL-A4520K	230	10.6	223.3	3350	2.10	8	30.4	5.99	4000
MPL-A4530F	230	9.5	144.7	2170	1.90	8	29.7	8.36	2800
MPL-A4530K	230	14.4	196.0	2940	2.50	8	43.8	8.13	4000
MPL-A4540C	230	6.6	93.3	1400	1.50	8	20.5	10.20	1500
MPL-A4540F	230	13.0	162.0	2430	2.60	8	38.2	10.20	3000
MPL-A520K	230	16.3	208.0	3120	3.50	8	46.0	10.70	4000
MPL-A540K	230	29.3	180.7	2710	5.50	8	84.9	19.40	4000
MPL-A560F	230	29.3	125.3	1880	5.50	8	84.9	27.90	3000
MPL-B310P	460	1.7	310.0	4650	0.77	8	3.0	1.58	5000
MPL-B320P	460	3.2	313.3	4700	1.50	8	5.0	3.05	5000
MPL-B330P	460	4.3	274.0	4110	1.80	8	7.0	4.18	5000
MPL-B420P	460	4.5	255.3	3830	1.90	8	9.2	4.74	5000
MPL-B430P	460	6.5	214.0	3210	2.20	8	12.0	6.55	5000
MPL-B4520P	460	6.0	236.7	3550	2.10	8	17.0	5.65	5000
MPL-B4530F	460	5.0	162.0	2430	2.10	8	13.4	8.25	3000
MPL-B4530K	460	7.8	200.7	3010	2.60	8	19.1	8.25	4000
MPL-B4540F	460	6.4	162.0	2430	2.60	8	16.3	10.20	3000
MPL-B4560F	460	8.3	144.7	2170	3.20	8	25.5	14.10	3000
MPL-B520K	460	8.1	208.0	3120	3.50	8	23.3	10.70	4000
MPL-B540K	460	14.5	177.3	2660	5.40	8	42.4	19.40	4000
MPL-B560F	460	14.5	130.7	1960	5.50	8	42.4	26.80	3000
MPL-B580F	460	18.4	132.7	1990	7.10	8	66.5	34.00	3000
MPL-B580J	460	22.6	148.0	2220	7.90	8	66.5	34.00	3800
MPL-B640F	460	22.7	106.0	1590	6.11	8	46.0	36.70	3000
MPL-B660F	460	27.2	81.3	1220	6.15	8	67.9	48.00	3000
MPL-B680D	460	24.0	94.0	1410	9.30	8	66.5	62.80	2000
MPL-B680F	460	33.9	79.3	1190	7.50	8	67.9	60.00	3000
MPL-B860D	460	33.6	96.0	1440	12.50	8	67.5	83.10	2000
MPL-B880C	460	33.6	72.7	1090	12.60	8	69.0	110.00	1500
MPL-B880D	460	40.3	86.7	1300	15.00	8	113.2	110.00	2000
MPL-B960B	460	29.7	62.0	930	12.70	8	63.6	130.00	1200
MPL-B960C	460	38.9	76.0	1140	14.80	8	88.4	124.30	1500
MPL-B960D	460	50.2	76.7	1150	15.00	8	102.5	124.30	2000
MPL-B980B	460	31.8	59.3	890	15.02	8	70.7	162.70	1000

Model Number	Motor NP Volts (line to line V rms)	Motor NP Amps (A rms)	Motor NP Hertz (Hz)	Motor NP RPM (oper. rpm)	Motor NP Power (kW)	Motor Poles	Current peak (A rms)	System Cont. Stall Torque (N•m)	Motor Max RPM (rpm)
MPL-B980C	460	48.2	67.3	1010	16.80	8	99.0	158.20	1500
MPL-B980D	460	63.6	74.7	1120	18.60	8	141.4	158.20	2000
MPG-A004-031	230	1.8	222.7	3340	0.21	8	4.0	0.60	6000
MPG-A010-031	230	2.1	189.3	2840	0.36	8	6.0	1.21	4875
MPG-A010-091	230	0.9	295.3	4430	0.19	8	2.3	0.41	5900
MPG-A025-031	230	9.9	181.0	1810	0.88	12	19.8	4.65	5200
MPG-A025-091	230	3.0	168.0	1680	0.52	12	8.5	2.95	5625
MPG-A050-031	230	24.7	120.0	1200	1.50	12	53.0	11.90	2510
MPG-A050-091	230	5.0	275.0	2750	0.75	12	15.6	2.60	3775
MPG-A110-031	230	20.2	122.0	1220	2.20	12	53.0	17.20	2875
MPG-A110-091	230	17.0	184.0	1840	1.60	12	33.2	8.30	3500
MPG-B010-031	460	1.6	162.7	2440	0.34	8	4.4	1.33	6450
MPG-B010-091	460	0.7	357.3	5360	0.23	8	1.5	0.41	6450
MPG-B025-031	460	4.0	219.0	2190	0.92	12	11.3	4.02	4838
MPG-B025-091	460	1.9	175.0	1750	0.54	12	5.2	2.95	5900
MPG-B050-031	460	16.3	92.0	920	1.20	12	32.5	12.40	2510
MPG-B050-091	460	3.4	290.0	2900	0.79	12	9.9	2.60	4560
MPG-B110-031	460	12.9	112.0	1120	2.00	12	31.1	17.00	2420
MPG-B110-091	460	10.6	184.0	1840	1.60	12	20.5	8.30	3500
1326AB-B410G	460	2.5	118.0	3540	1.00	4	7.4	2.70	5000
1326AB-B410J	460	3.5	165.0	4950	1.40	4	10.4	2.70	7250
1326AB-B420E	460	2.8	70.0	2100	1.10	4	8.5	5.00	3000
1326AB-B420H	460	5.5	137.3	4120	2.20	4	15.6	5.10	6000
1326AB-B430E	460	3.9	67.7	2030	1.40	4	11.7	6.60	3000
1326AB-B430G	460	5.6	114.3	3430	2.30	4	16.8	6.40	5000
1326AB-B515E	460	6.1	70.3	2110	2.30	4	18.3	10.40	3000
1326AB-B515G	460	9.5	88.7	2660	2.90	4	28.5	10.40	5000
1326AB-B520E	460	6.7	71.0	2130	2.90	4	20.1	13.00	3000
1326AB-B520F	460	8.8	70.3	2110	2.90	4	26.4	13.10	3500
1326AB-B530E	460	9.5	74.3	2230	4.20	4	28.5	18.00	3000
1326AB-B720E	460	17.5	70.0	2100	6.80	4	52.5	30.90	3500
1326AB-B720F	460	27.5	117.0	3510	11.70	4	66.5	31.80	5000
1326AB-B730E	460	22.8	78.3	2350	9.60	4	66.5	39.00	3350
1326AB-B740C	460	20.9	52.3	1570	8.70	4	62.7	53.00	2200
1326AB-B740E	460	32.0	79.7	2390	12.70	4	66.5	50.80	3400
1326AS-B310H	460	0.8	204.5	4090	0.30	6	2.4	0.70	6200
1326AS-B330H	460	2.1	204.5	4090	0.90	6	6.0	2.10	6500
1326AS-B420G	460	2.6	179.0	3580	1.20	6	7.8	3.20	5250
1326AS-B440G	460	5.4	149.0	2980	2.00	6	16.2	6.40	5250
1326AS-B460F	460	6.2	148.5	2970	2.80	6	18.6	9.00	4300
1326AS-B630F	460	7.8	142.7	2140	2.40	8	18.5	10.70	4500
1326AS-B660E	460	11.8	100.7	1510	3.40	8	29.8	21.50	3000
1326AS-B690E	460	19.0	87.3	1310	5.00	8	41.3	36.40	3000
1326AS-B840E	460	21.2	79.3	1190	4.70	8	39.5	37.60	3000
1326AS-B860C	460	17.6	77.3	1160	6.00	8	44.4	49.30	2000
1326AH-B330F	460	2.1	0.0	3000	0.75	-	9.0	-	3000
1326AH-B440F	460	3.3	0.0	2500	1.22	-	13.8	-	2500
1326AH-B540F	460	11.1	0.0	2500	2.60	-	47.2	-	2500
3050R-7	390	66.0	50.0	500	30.00	12	132.0	-	500
11050R-7	390	218.0	50.0	500	110.00	12	436.0	-	500

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