
Controls, Start-Up, Operation, Service, and Troubleshooting Supplement

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GENERAL

This publication contains supplementary information to the 30GTN-4T publication for Start-up, Service, Controls, Operation, and Troubleshooting data for the 30GTN,R Comfortlink Reciprocating chillers. The supplementary information covers 30GTN,R040-420 with MBB software version CESR131xxx-04-xx.

OPERATION DATA

Cooler Pump Control — The 30GTN,R chillers can be configured for cooler pump control. Inputs for cooler pump interlock and flow switch are also provided. Proper configuration of the cooler pump control (Configuration/OPT1/CPC) and cooler pump interlock is required to prevent possible cooler freeze-up. The cooler pump interlock is always enabled and cannot be disabled. This prevents the chiller from operating unless chilled water flow is detected. See the Field Wiring section for proper connection of the cooler pump interlock.

The factory default setting for cooler pump control is “OFF”, however it is recommended for all chillers that the cooler pump control be utilized unless the chilled water pump runs continuously or the chilled water system contains a suitable anti-freeze solution. When the cooler pump control is “ON”, the cooler pump relay will be energized when the chiller enters an “ON” mode (i.e. ON LOCAL, ON TIME, etc.). A field supplied cooler pump control relay should be wired to terminals 10 and 12 of TB5.

If cooler pump control is configured to “OFF” and the cooler pump interlock and/or flow switch does not close within 5 minutes after the unit is enabled and in an “ON” mode, alarm A200 will be generated. When the cooler pump control is configured to “ON” and the cooler pump interlock does not close within 5 minutes after the cooler pump is energized, alarm A200 will be generated. An alarm A202 will be generated if the interlock contacts remain closed when the cooler pump relay is off. In either cooler pump control configuration, MODE 23 will be activated whenever the cooler pump interlock is open for at least 10 seconds during operation. Five minutes is allowed for a backup pump to be energized and/or flow reestablished. If flow is reestablished, MODE 23 is removed. If flow is not reestablished, then alarm 200 or 201 occurs (depending on if the original flow loss occurred at startup or while running).

If the chilled water pump/isolation valve is not controlled by the chiller it must remain energized for a minimum of 10 minutes after the chiller is commanded off. This allows time for the chiller to reduce capacity and complete the pumpout cycle.

TROUBLESHOOTING

EXV Troubleshooting Procedure — Follow steps below to diagnose and correct problems with the "15,000" step EXV (actually 12,210 steps) which is supplied with Series 3 units.

Check EXV motor operation first. Switch the Enable/Off/Remote Contact (EOR) switch to the Off position. Press the **ESCAPE** key on the Scrolling Marquee until the display is blank. Use the ▼ or ▲ key to light the LED next to "Service Test". Press the **ENTER** key. The display will alternate between **TEST** and **OFF**.

Press the **ENTER** key (password entry may be required) – 'OFF' will blink, use the ▲ key to change 'OFF' to 'ON', then press **ENTER** again. Switch the EOR switch to Enable. The Service Test mode is now enabled.

Press the **ESCAPE** key once, press ▼ to show "OUTS" (still within Service Test), and press the **ENTER** key. Press ▼ to move to item EXV.A (for circuit A) or EXV.B as needed. Press the **ENTER** key, and the valve position will flash. Use the ▲ key to select 100% valve position (hold for quick movement), and press the **ENTER** key.

You should be able to feel the actuator moving by placing your hand on the EXV. A sight glass is located on the valve body to verify that the sleeve is moving to expose/cover slots in the orifice. A hard knocking should be felt from the actuator when it reaches the top of its stroke (can be heard if surroundings are relatively quiet). Press the **ENTER** key again twice if necessary to confirm this. To close the valve, press the **ENTER** key, select 0% with the ▼ key and press the **ENTER** key. The actuator should knock when it reaches the bottom of its stroke. If it is believed that the valve is not working properly, continue with the checkout procedure below:

Check the EXV output signals at appropriate terminals on the EXV board (See Figure 1). Connect positive test lead to EXV-J6 terminal 3 (with no wire) for Circuit A, EXV-J7 terminal 3 for Circuit B. Set meter to approximately 20 vdc. Using the Service Test procedure, move the valve output under test to 100%. DO NOT short meter leads together or pin 3 to any other pin, as board damage will occur. During the next several seconds, carefully connect the negative test lead to pins 1,2,4 and 5 in succession (plug J6 for Circuit A, plug J7 for Circuit B). Digital voltmeters will average this signal and display approximately 6 vdc. If it remains constant at a voltage other than 6 VDC or shows 0 volts, remove the connector to the valve and recheck.

The EXV motor moves at 300 steps per second. Commanding the valve to either 0% or 100% will add 7500 steps to the move. For example, if the EXV is fully closed, selecting 100% would allow 66 seconds for the dc voltage to be checked ($12,210/300 + 7500/300$).

Press the **ENTER** key and select 0% to close the valve. Check the 4 position DIP switch on the board

(all switches should be set to On). If a problem still exists, replace the EXV module. If the reading is correct, the expansion valve and EXV wiring should be checked. Check the EXV terminal strip and interconnecting wiring.

1. Check color coding and wire connections. Make sure they are connected to the correct terminals at the EXV driver and EXV plug and that the cables are not crossed.
2. Check for continuity and tight connection at all pin terminals.

Check the resistance of the EXV motor windings. Remove the EXV module plug (J6 for Circuit A, J7 for Circuit B), and check the resistance of the two windings between pins 1 and 2 for one winding and pins 4 and 5 for the other winding (see Fig. 1). The resistance should be 75 ohms \pm 7.5 ohms.

Inspecting And Opening Electronic Expansion Valves — To check the physical operation of an EXV, the following steps must be performed.

IMPORTANT: Obtain replacement O-ring (kit 32GB660018) before opening EXV. Do not reuse O-rings.

1. Close the liquid line service valve of the circuit to be checked. Put the Enable/Off/Remote Contact switch in the Off position. Using the Scrolling Marquee, enter the Service Test mode and change the sub-mode TEST from 'OFF' to 'ON'. Switch the EOR switch to the Enable position. Under the COMP sub-mode, enable the compressor (CC.A1 or CC.B1) for the desired circuit. Let compressor run until gage on suction pressure port reads 10 psig. Press **ENTER**, ▼, and **ENTER** to turn the compressor off. The compressor will complete its pumpout routine and turn off. Immediately after the compressor shuts off, close the discharge valve.
2. Remove any remaining refrigerant from the system low side using proper reclaiming techniques. Disconnect the line voltage power supply to the compressors and control circuit power.
3. The expansion valve motor is hermetically sealed inside the top portion of the valve. Disconnect the EXV motor from the EXV cable. Carefully unscrew the motor portion from the body of the valve. The EXV lead screw and sleeve will come off with the motor portion of the device.
4. Reconnect the EXV motor to the EXV cable. Select the appropriate EXV under the OUTS submode in the Service Test mode. Locate the desired item 'EXV.A' or 'EXV.B'. Press the **ENTER** key to make the valve position of 0% flash. Press and hold ▲ until 100% is displayed, and press **ENTER**. Observe the operation of the lead screw and sleeve. The

motor should be turning the lead screw and sleeve counterclockwise, raising the sleeve closer to the motor. Lead screw movement should be smooth and uniform from fully closed to fully open position. Press **ENTER**, use ▼ to select 0%, and press **ENTER** again to check open to closed operation. If the valve is properly connected to the processor and receiving correct signals, yet does not operate as described above, the sealed motor portion of the valve should be replaced.

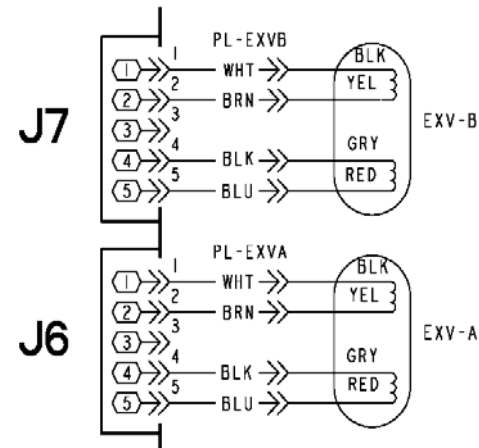
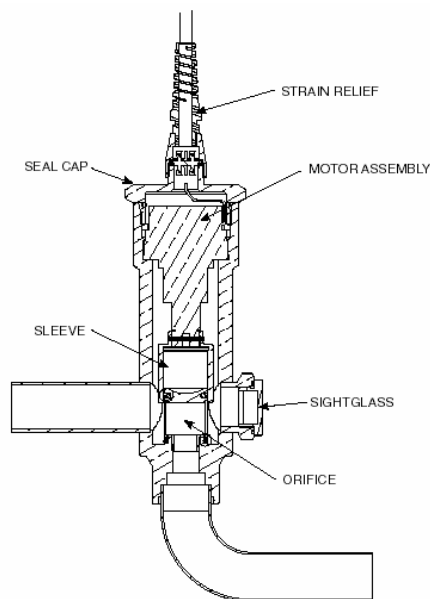


Fig. 1 — EXV Cable Connections to EXV Board



Torque Specifications

ITEM	ft-lb	n-m
Sight Glass	15-25	20-34
Seal Cap	18-22	24-30

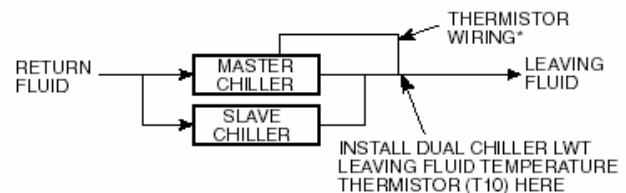
Fig. 2 — 15,000 Step EXV

Configuring and Operating Dual Chiller

Control — The dual chiller routine is available for the control of two units supplying chilled fluid on a common loop. This control is designed for a parallel fluid flow arrangement only. One chiller must be configured as the master chiller, the other as the slave chiller. An additional leaving fluid temperature thermistor (Dual Chiller LWT) must be installed in the common chilled water piping as shown in Fig. 3 and connected to the master chiller. See Field Wiring section for Dual Chiller LWT Accessory sensor control wiring. A chilled water flow switch should be installed for each chiller.

To configure the two chillers for dual chiller operation, follow the example shown in Tables 12 and 13. Both chillers must have the Control Method variable (CTRL, Configuration mode, sub-mode OPT2) set to '3' CCN Control. In the example the master chiller will be configured with a CCN address of '1' and the slave chiller with a CCN address of '2' (CCNA, Configuration mode, sub-mode OPT2). The master and slave chillers can be addressed from 1 to 239. Each device connected to the network must have its own unique address. Both chillers must have the same CCN Bus Address (CCNB, Configuration mode, sub-mode OPT2). Lead/Lag Chiller Enable must be set to ENBL for both chillers (LLEN, Configuration mode, sub-mode RSET). Also in this example, the master chiller will be configured to use Lead/Lag Balance (LLBL, Configuration mode, sub-mode RSET) to rotate the lead chiller after 168 hours of operation. The Lag Start Delay (LLBD, Configuration mode, sub-mode RSET) will be set for 10 minutes. This prevents the Lag chiller from starting until the lead chiller is fully loaded and the delay has elapsed.

If Outdoor Air Temperature reset is desired, it should be connected to the slave chiller. CCN OAT Broadcast will have to be configured for 'Yes' on the slave chiller and CCN Broadcast Ack'er will have to be configured for 'Yes' on the master chiller. Broadcast functions can only be configured with Service Tool, ComfortVIEW™, ComfortWORKS® or the Enhanced Display option.



*Depending on piping sizes, use either:

- HH79NZ014 sensor/10HB50106801 well (3-in. sensor/well)
- HH79NZ029 sensor/10HB50106802 well (4-in. sensor/well)

Fig. 3 — Dual Chiller Thermistor Location

Table 1 - Run Status Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	RANGE	ITEM EXPANSION	COMMENT
VIEW	AUTO VIEW OF RUN STATUS				
	ENTER	EWT	0 – 100F (-18 – 38C)	ENTERING FLUID TEMP	
	<▼>	LWT	0 – 100F (-18 – 38C)	LEAVING FLUID TEMP	
	<▼>	SETP	0 – 100F (-18 – 38C)	ACTIVE SETPOINT	
	<▼>	CTPT	0 – 100F (-18 – 38C)	CONTROL POINT	
	<▼>	STAT	0 - 7	CONTROL MODE	0 = Service Test 1 = Off Local 2 = Off CCN 3 = Off Time Clock 4 = Off Emergency 5 = On Local 6 = On CCN 7 = On Time Clock
	<▼>	OCC	NO-YES	OCCUPIED	
	<▼>	MODE	NO-YES	OVERRIDE MODES IN EFFECT	Refer to Operating Modes
	<▼>	CAP	0 – 100%	PERCENT TOTAL CAPACITY	
	<▼>	LOD.F	-999 - 999	LOAD/UNLOAD FACTOR	
	<▼>	STGE	0 -30	REQUESTED STAGE	
	<▼>	ALRM	0 -25	CURRENT ALARMS AND ALERTS	
	<▼>	TIME	00.00 – 23.59	TIME OF DAY	
	<▼>	MNTH	1 -12	MONTH OF YEAR	
	<▼>	DATE	1 - 31	DAY OF MONTH	1 = Jan., 2 = Feb., etc.
	<▼>	YEAR	0 -9999	YEAR OF CENTURY	
RUN	UNIT RUN HOUR AND START				
	ENTER	HRS.U	0 - 999999	MACHINE OPERATING HOPURS	
	<▼>	STR.U	0 - 999999	MACHINE STARTS	
HOUR	CIRC AND COMP RUN HOURS				
	ENTER	HRS.A	0 – 999999	CIRCUIT A RUN HOURS	
	<▼>	HRS.B	0 – 999999	CIRCUIT B RUN HOURS	
	<▼>	HR.A1	0 – 999999	COMPRESSOR A1 RUN HOURS	
	<▼>	HR.A2	0 – 999999	COMPRESSOR A2 RUN HOURS	
	<▼>	HR.A3	0 – 999999	COMPRESSOR A3 RUN HOURS	
	<▼>	HR.A4	0 – 999999	COMPRESSOR A4 RUN HOURS	
	<▼>	HR.B1	0 – 999999	COMPRESSOR B1 RUN HOURS	
	<▼>	HR.B2	0 – 999999	COMPRESSOR B2 RUN HOURS	
	<▼>	HR.B3	0 – 999999	COMPRESSOR B3 RUN HOURS	
	<▼>	HR.B4	0 - 999999	COMPRESSOR B4 RUN HOURS	
STRT	COMPRESSOR STARTS				
	ENTER	ST.A1	0 – 999999	COMPRESSOR A1 STARTS	
	<▼>	ST.A2	0 – 999999	COMPRESSOR A2 STARTS	
	<▼>	ST.A3	0 – 999999	COMPRESSOR A3 STARTS	
	<▼>	ST.A4	0 – 999999	COMPRESSOR A4 STARTS	
	<▼>	ST.B1	0 – 999999	COMPRESSOR B1 STARTS	
	<▼>	ST.B2	0 – 999999	COMPRESSOR B2 STARTS	
	<▼>	ST.B3	0 – 999999	COMPRESSOR B3 STARTS	
VERS	SOFTWARE VERSION NUMBERS				
	ENTER	MBB		CESR-131170-XX-XX	Press ENTER and ESCAPE simultaneously display version. XX-XX = version
	<▼>	EXV		CESR-131172-XX-XX	
	<▼>	CXB		CESR-131173-XX-XX	
	<▼>	EMM		CESR-131174-XX-XX	
	<▼>	MARQ		CESR-131171-XX-XX	
	<▼>	NAV		CESR-131227-XX-XX	

Table 2 - Service Test Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
TEST	ENTER		OFF/ON	SERVICE TEST MODE	To Enable Service Test Mode, move Enable/Off/Remote Contact switch to OFF. Change TEST to ON. Move switch to ENABLE.
OUTS	OUTPUTS AND PUMPS				
	ENTER	LLS.A	CLSE/OPEN	LIQ LINE SOLENOID VALVE	
	<▼>	EXV.A	XXX %	EXV % OPEN	
	<▼>	LLS.B	CLSE/OPEN	LIQ LINE SOLENOID VALVE	
	<▼>	EXV.B	XXX %	EXV % OPEN	
	<▼>	FAN1	OFF/ON	FAN 1 RELAY	Fan 3 (040-050) Fans 3, 4 (060-110, 230B-315B) Fans 1, 2 (130 [60Hz]) Fan 1 (130 [50Hz], 150, 170, 230A-270A, 330A/B, 360B [50Hz]) Fans 1, 11 (190-210, 290A, 315A, 360A, 360B [60Hz], 390A/B-420A/B)
	<▼>	FAN2	OFF/ON	FAN 2 RELAY	Fan 4 (040-050) Fans 5, 6 (060-090, 230B-245B) Fans 5, 6, 7, 8 (100, 110, 255B-315B) Fans 3, 4, 9, 10 (130 [60Hz]) Fan 2 (130 [50Hz], 150, 170, 230A-270A, 330A/B, 360B [50Hz]) Fan 2, 12 (190-210, 290A, 315A, 360A, 360B [60Hz], 390A/B-420A/B)
	<▼>	FAN3	OFF/ON	FAN 3 RELAY	Fans 3, 9 (130 [50Hz], 150-210, 230A-315A, 330A/B-420A/B)
	<▼>	FAN4	OFF/ON	FAN 4 RELAY	Fans 4, 10 (130 [50Hz], 150-210, 230A-315A, 330A/B-420A/B)
	<▼>	CLR.P	OFF/ON	COOLER PUMP RELAY	
	<▼>	CND.P	OFF/ON	CONDENSER PUMP RELAY	
	<▼>	RMT.A	OFF/ON	REMOTE ALARM RELAY	
COMP	COMPRESSORS – UNLOADERS				
	ENTER	CC.A1	OFF/ON	COMPRESSOR A1 RELAY	
	<▼>	CC.A2	OFF/ON	COMPRESSOR A2 RELAY	
	<▼>	CC.A3	OFF/ON	COMPRESSOR A3 RELAY	
	<▼>	CC.A4	OFF/ON	COMPRESSOR A4 RELAY	
	<▼>	UL.A1	OFF/ON	UNLOADER A1 RELAY	
	<▼>	UL.A2	OFF/ON	UNLOADER A2 RELAY	
	<▼>	HGBP	OFF/ON	HOT GAS BYPASS RELAY	
	<▼>	CC.B1	OFF/ON	COMPRESSOR B1 RELAY	
	<▼>	CC.B2	OFF/ON	COMPRESSOR B2 RELAY	
	<▼>	CC.B3	OFF/ON	COMPRESSOR B3 RELAY	
	<▼>	CC.B4	OFF/ON	COMPRESSOR B4 RELAY	
	<▼>	UL.B1	OFF/ON	UNLOADER B1 RELAY	
	<▼>	UL.B2	OFF/ON	UNLOADER B2 RELAY	

Table 3 - Temperature Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
UNIT	ENT AND LEAVE UNIT TEMPS				
	ENTER	CEWT	-40 – 245F (-40 – 118C)	COOLER ENTERING FLUID	
	<▼>	CLWT	-40 – 245F (-40 – 118C)	COOLER LEAVING FLUID	
	<▼>	OAT	-40 – 245F (-40 – 118C)	OUTSIDE AIR TEMPERATURE	
	<▼>	SPT	-40 – 245F (-40 – 118C)	SPACE TEMPERATURE	
	<▼>	CNDE	-40 – 245F (-40 – 118C)	CONDENSER ENTERING FLUID	
	<▼>	CNDL	-40 – 245F (-40 – 118C)	CONDENSER LEAVING FLUID	
	<▼>	DLWT	-40 – 245F (-40 – 118C)	LEAD/LAG LEAVING FLUID	
CIR.A	TEMPERATURES CIRCUIT A				
	ENTER	SCT.A	-40 – 245F (-40 – 118C)	SATURATED CONDENSING TMP	
	<▼>	SST.A	-40 – 245F (-40 – 118C)	SATURATED SUCTION TEMP	
	<▼>	SGT.A	-40 – 245F (-40 – 118C)	COMPRESSOR SUCTION GAS TEMP	
	<▼>	SUP.A	-40 – 245°F (-40 – 118°C)	SUCTION SUPERHEAT TEMP	
CIR.B	TEMPERATURES CIRCUIT B				
	ENTER	SCT.B	-40 – 245F (-40 – 118C)	SATURATED CONDENSING TMP	
	<▼>	SST.B	-40 – 245F (-40 – 118C)	SATURATED SUCTION TEMP	
	<▼>	SGT.B	-40 – 245F (-40 – 118C)	COMPRESSOR SUCTION GAS TEMP	
	<▼>	SUP.B	-40 – 245°F (-40 – 118°C)	SUCTION SUPERHEAT TEMP	

Table 4 - Pressure Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
PRC.A	PRESSURES CIRCUIT A				
	ENTER	DP.A	XXX	DISCHARGE PRESSURE	Pressure is converted from SCT.A
	<▼>	SP.A	XXX	SUCTION PRESSURE	Pressure is converted from SST.A
PRC.B	PRESSURES CIRCUIT B				
	ENTER	DP.B	XXX	DISCHARGE PRESSURE	Pressure is converted from SCT.B
	<▼>	SP.B	XXX	SUCTION PRESSURE	Pressure is converted from SST.B

Table 5 - Setpoint Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	RANGE	ITEM EXPANSION	COMMENT
COOL	COOLING SETPOINTS				
	ENTER	CSP.1	-20 – 70F (-29 – 21C)	COOLING SETPOINT 1	DEFAULT: 44F
	<▼>	CSP.2	-20 – 70F (-29 – 21C)	COOLING SETPOINT 2	DEFAULT: 44F
	<▼>	CSP.3	-20 – 42F (-29 – 6C)	ICE SETPOINT	DEFAULT: 42F
	<▼>	BR.FZ	-20 – 34F (-29 – 1C)	BRINE FREEZE POINT	DEFAULT: 34F

Table 5 - Setpoint Mode and Sub-Mode Directory (cont'd)

HEAT	HEATING SETPOINTS				
	ENTER	HSP.1	80 – 140F (27 – 60C)	HEATING SETPOINT 1	NOT SUPPORTED
HEAD	<▼>	HSP.2	80 – 140F (27 – 60C)	HEATING SETPOINT 2	NOT SUPPORTED
	HEAD PRESSURE SETPOINTS				
	ENTER	HD.P.A	80 – 140F (27 – 60C)	HEAD PRESSURE SETPOINT A	DEFAULT: 113F
	<▼>	HD.P.B	80 – 140F (27 – 60C)	HEAD PRESSURE SETPOINT B	DEFAULT: 113F
	<▼>	MC.SP	100 – 154F (38 – 68C)	MAX. COND. TEMP SETPOINT	DEFAULT: 152F

Table 6 - Inputs Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
GEN.I	GENERAL INPUTS				
	ENTER	STST	OFF/ON	START/STOP SWITCH	
	<▼>	FLOW	OFF/ON	COOLER FLOW SWITCH	
	<▼>	CND.F	OFF/ON	CONDENSER FLOW SWITCH	
	<▼>	DLS1	OFF/ON	DEMAND LIMIT SWITCH 1	
	<▼>	DLS2	OFF/ON	DEMAND LIMIT SWITCH 2	
	<▼>	ICED	OFF/ON	ICE DONE	
	<▼>	DUAL	OFF/ON	DUAL SETPOINT SWITCH	
CRCT	CIRCUIT INPUTS				
	ENTER	FKA1	OFF/ON	COMPRESSOR A1 FEEDBACK	
	<▼>	FKA2	OFF/ON	COMPRESSOR A2 FEEDBACK	
	<▼>	FKA3	OFF/ON	COMPRESSOR A3 FEEDBACK	
	<▼>	FKA4	OFF/ON	COMPRESSOR A4 FEEDBACK	
	<▼>	OIL.A	OPEN/CLSE	OIL PRESSURE SWITCH A	
	<▼>	LPS.A	OPEN/CLSE	LOW PRESSURE SWITCH A	
	<▼>	FKB1	OFF/ON	COMPRESSOR B1 FEEDBACK	
	<▼>	FKB2	OFF/ON	COMPRESSOR B2 FEEDBACK	
	<▼>	FKB3	OFF/ON	COMPRESSOR B3 FEEDBACK	
	<▼>	FKB4	OFF/ON	COMPRESSOR B4 FEEDBACK	
	<▼>	OIL.B	OPEN/CLSE	OIL PRESSURE SWITCH B	
	<▼>	LPS.B	OPEN/CLSE	LOW PRESSURE SWITCH B	
4-20	4 – 20 MA INPUTS				
	ENTER	DMND	OFF/ON	4-20 MA DEMAND SIGNAL	
	<▼>	RSET	OFF/ON	4-20 MA RESET SIGNAL	
	<▼>	CSP	OFF/ON	4-20 MA COOLING SETPOINT	
	<▼>	HSP	OFF/ON	4-20 MA HEATING SETPOINT	
CS.IN	CURRENT SENSOR INPUTS				
	ENTER	CS.A1	OFF/ON	COMPRESSOR A1 FEEDBACK	
	<▼>	CS.A2	OFF/ON	COMPRESSOR A2 FEEDBACK	
	<▼>	CS.A3	OFF/ON	COMPRESSOR A3 FEEDBACK	
	<▼>	CS.A4	OFF/ON	COMPRESSOR A4 FEEDBACK	
	<▼>	CS.B1	OFF/ON	COMPRESSOR B1 FEEDBACK	
	<▼>	CS.B2	OFF/ON	COMPRESSOR B2 FEEDBACK	
	<▼>	CS.B3	OFF/ON	COMPRESSOR B3 FEEDBACK	
	<▼>	CS.B4	OFF/ON	COMPRESSOR B4 FEEDBACK	

Table 7 - Outputs Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
GEN.O	GENERAL OUTPUTS				
	ENTER	FAN1	OFF/ON	FAN 1 RELAY	
	<▼>	FAN2	OFF/ON	FAN 2 RELAY	
	<▼>	FAN3	OFF/ON	FAN 3 RELAY	
	<▼>	FAN4	OFF/ON	FAN 4 RELAY	
	<▼>	C.PMP	OFF/ON	COOLER PUMP RELAY	
	<▼>	H.GAS	OFF/ON	HOT GAS BYPASS RELAY	
CIR.A	<▼>	CNDP	OFF/ON	CONDENSER PUMP RELAY	
	OUTPUTS CIRCUIT A				
	ENTER	CC.A1	OFF/ON	COMPRESSOR A1 RELAY	
	<▼>	CC.A2	OFF/ON	COMPRESSOR A2 RELAY	
	<▼>	CC.A3	OFF/ON	COMPRESSOR A3 RELAY	
	<▼>	CC.A4	OFF/ON	COMPRESSOR A4 RELAY	
	<▼>	UL.A1	OFF/ON	UNLOADER A1 RELAY	
CIR.B	<▼>	UL.A2	OFF/ON	UNLOADER A2 RELAY	
	<▼>	LLS.A	OFF/ON	LIQ. LINE SOLENOID VALVE	
	<▼>	EXV.A	XXX %	EXV % OPEN	
	OUTPUTS CIRCUIT B				
	ENTER	CC.B1	OFF/ON	COMPRESSOR B1 RELAY	
	<▼>	CC.B2	OFF/ON	COMPRESSOR B2 RELAY	
	<▼>	CC.B3	OFF/ON	COMPRESSOR B3 RELAY	
	<▼>	CC.B4	OFF/ON	COMPRESSOR B4 RELAY	
	<▼>	UL.B1	OFF/ON	UNLOADER B1 RELAY	
	<▼>	UL.B2	OFF/ON	UNLOADER B2 RELAY	
	<▼>	LLS.B	OFF/ON	LIQ. LINE SOLENOID VALVE	
	<▼>	EXV.B	XXX %	EXV % OPEN	

Table 8 — Configuration Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
DISP	DISPLAY CONFIGURATION				
	ENTER	TEST	ON/OFF	TEST DISPLAY LEDs	See Backlight and Contrast adjustment in Tables 21 and 22.
	<▼>	METR	X	METRIC DISPLAY	Off = English On = Metric
	<▼>	LANG	X	LANGUAGE SELECTION	Default: English English Espanol Francais Portuguese

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
UNIT	UNIT CONFIGURATION				
	ENTER	TYPE	X	UNIT TYPE	1 = Air Cooled 2 = Water Cooled 3 = Split 4 = Heat Machine 5 = Heat Reclaim
	<▼>	TONS	XXX	UNIT SIZE	015-300
	<▼>	CAP.A	XXX %	CIRCUIT A % CAPACITY	Unit Size 60Hz 50Hz 040 50 43 045 43 46 050 46 43 060 43 50 070 50 57 080* 56 62 090* 50 54 100* 50 50 110* 54 50 130* 50 52 150* 50 60 170* 50 48 190* 50 50 210* 50 52 * Associated Modular Units
	<▼>	CMP.A	X	NUMBER CIRC A COMPRESSOR	1 – 4
	<▼>	CYL.A	X	COMPRESSOR A1 CYLINDERS	4, 6
	<▼>	CMP.B	X	NUMBER CIRC B COMPRESSOR	1 – 4
	<▼>	CYL.B	X	COMPRESSOR B1 CYLINDERS	4, 6
	<▼>	EXV	NO/YES	EXV MODULE INSTALLED	Default: YES
	<▼>	SH.SP	XX	EXV SUPERHEAT SETPOINT	Default: 29 (30GTN,R) 23 (30GUN,R)
	<▼>	SH.OF	XX	EXV SUPERHEAT OFFSET	Default: 0
	<▼>	REFG	X	REFRIGERANT	1 = R22 (30GTN,R) 2 = R134a (30GUN,R)
	<▼>	FAN.S	X	FAN STAGING SELECT	1 = 2 Stage Independent (190-210, 290A,315A, 360B[60Hz], 390A/B-420A/B) 2 = 3 Stage Independent (130[50Hz], 150, 170, 230A-270A, 330A/B, 360B[50Hz]) 3 = 2 Stage Common (040-090,230B,245B) 4 = 3 Stage Common (100-110,130 [60Hz], 225B-315B)
OPT1	UNIT OPTIONS 1 HARDWARE				
	ENTER	FLUD	X	COOLER FLUID	Default: Water 1 = Water 2 = Medium Temp Brine 3 = Low Temp Brine (Not Supported)
	<▼>	HGB.S	NO/YES	HOT GAS BYPASS SELECT	Default: No
	<▼>	HPCM	X	HEAD PRESS CONT METHOD	Default: 2 1 = EXV Control 2 = Setpoint Control 3 = Setpoint Circuit A, EXV Circuit B 4 = Setpoint Circuit B, EXV Circuit A
	<▼>	HPCT	X	HEAD PRESS CONTROL TYPE	Default: 1 0 = No Control 1 = Air Cooled 2 = Water Cooled
	<▼>	MMR.S	NO/YES	MOTORMASTER SELECT	Default: No
	<▼>	PRTS	NO/YES	PRESSURE TRANSDUCERS	Default: No
	<▼>	PMP.I	OFF/ON	COOLER PUMP INTERLOCK	Default: On
	<▼>	CPC	OFF/ON	COOLER PUMP CONTROL	Default: Off
	<▼>	CNP.I	OFF/ON	CONDENSER PUMP INTERLOCK	Default: Off (Does not require condenser pump control)
	<▼>	CNPC	X	CONDENSER PUMP CONTROL	Default: No Control 0 = No Control 1 = On with mode 2 = On with compressor(s)

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
	<▼>	CWT.S	NO/YES	CONDENSER FLUID SENSORS	Default: No
	<▼>	CA.UN	X	NO. CIRCUIT A UNLOADERS	0-2
	<▼>	CB.UN	X	NO. CIRCUIT B UNLOADERD	0-2
	<▼>	EMM	NO/YES	EMM MODULE INSTALLED	Default: No
	<▼>	EXV.T	X	EXV TYPE	0 = 1500 Step (Series 2 Units) 1 = 15000 Step (Series 3 Units)
OPT2	UNIT OPTIONS 2 CONTROLS				
	ENTER	CTRL	X	CONTROL METHOD	Default: Switch 0 - Switch = Enable/Off/Remote Switch 1 - 7 Day Occ = 7 Day Schedule 2 - Occupancy = CCN Occupancy 3 - CCN = CCN Control
	<▼>	CCNA	XXX	CCN ADDRESS	Default: 1 Range: 1 to 239
	<▼>	CCNB	XXX	CCN BUS NUMBER	Default: 0 Range: 0 to 239
	<▼>	BAUD	X	CCN BAUD RATE	Default: 9600 1 = 2400 2 = 4800 3 = 9600 4 = 19,200 5 = 38,400
	<▼>	LOAD	X	LOADING SEQUENCE SELECT	Default: Equal 1 = Equal 2 = Staged
	<▼>	LLCS	X	LEAD/LAG SEQUENCE SELECT	Default: 1 (Size 080-210) 2 (Size 060-070) 1 = Automatic 2 = Circuit A Leads 3 = Circuit B Leads
	<▼>	LCWT	XX.X ΔF	HIGH LCW ALERT LIMIT	Default: 60 Range: 2 to 60 F
	<▼>	DELY	XX	MINUTES OFF TIME	Default: 0 Minutes Range: 0 to 15 Minutes
	<▼>	ICE.M	ENBL/DSBL	ICE MODE ENABLE	Default: Disable
COMP	COMPRESSOR CONFIGURATION				
	<▼>	A1.EN	DSBL/ENBL	ENABLE COMPRESSOR A1	
	<▼>	A2.EN	DSBL/ENBL	ENABLE COMPRESSOR A2	
	<▼>	A3.EN	DSBL/ENBL	ENABLE COMPRESSOR A3	
	<▼>	A4.EN	DSBL/ENBL	ENABLE COMPRESSOR A4	
	<▼>	B1.EN	DSBL/ENBL	ENABLE COMPRESSOR B1	
	<▼>	B2.EN	DSBL/ENBL	ENABLE COMPRESSOR B2	
	<▼>	B3.EN	DSBL/ENBL	ENABLE COMPRESSOR B3	
	<▼>	B4.EN	DSBL/ENBL	ENABLE COMPRESSOR B4	
	<▼>	A1.C.E	DSBL/ENBL	CSB A1 FEEDBACK ALARM	ENBL = Current sensing board installed
	<▼>	A2.C.E	DSBL/ENBL	CSB A2 FEEDBACK ALARM	ENBL = Current sensing board installed
	<▼>	A3.C.E	DSBL/ENBL	CSB A3 FEEDBACK ALARM	ENBL = Current sensing board installed
	<▼>	A4.C.E	DSBL/ENBL	CSB A4 FEEDBACK ALARM	ENBL = Current sensing board installed
	<▼>	B1.C.E	DSBL/ENBL	CSB B1 FEEDBACK ALARM	ENBL = Current sensing board installed
	<▼>	B2.C.E	DSBL/ENBL	CSB B2 FEEDBACK ALARM	ENBL = Current sensing board installed
	<▼>	B3.C.E	DSBL/ENBL	CSB B3 FEEDBACK ALARM	ENBL = Current sensing board installed
	<▼>	B4.C.E	DSBL/ENBL	CSB B4 FEEDBACK ALARM	ENBL = Current sensing board installed
RSET	RESET COOL AND HEAT TEMP				
	ENTER	CRST	X	COOLING RESET TYPE	Default: No Reset 0 = No Reset 1 = 4 to 20 mA Input 2 = Outdoor Air Temperature 3 = Return Fluid 4 = Space Temperature
	<▼>	CRT1	XXX.X °F	NO COOL RESET TEMP	Default: 125 °F Range: 0 to 125 °F For return fluid reset use cooler ΔT
	<▼>	CRT2	XXX.X °F	FULL COOL RESET TEMP	Default: 0 °F Range: 0 to 125 °F For return fluid reset use cooler ΔT

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
RSET (cont'd)	<▼>	DGRC	XX.X ΔF	DEGREES COOL RESET	Default: 0 °F Range: -30 to 30 °F
	<▼>	HRST	X	HEATING RESET TYPE	Default: No Reset 0 = No Reset 1 = 4 to 20 mA Input 2 = Outdoor Air Temperature 3 = Return Fluid 4 = Space Temperature
	<▼>	HRT1	XXX.X °F	NO HEAT RESET TEMP	Default: 0 °F Range: 0 to 125 °F
	<▼>	HRT2	XXX.X °F	FULL HEAT RESET TEMP	Default: 125 °F Range: 0 to 125 °F
	<▼>	DGRH	XX.X ΔF	DEGREES HEAT RESET	Default: 0 °F Range: -30 to 30 °F
	<▼>	DMDC	X	DEMAND LIMIT SELECT	Default: None 0 = None 1 = Switch 2 = 4 to 20 mA Input 3 = CCN Loadshed
	<▼>	DM20	XXX %	DEMAND LIMIT AT 20 MA	Default: 100% Range: 0 to 100%
	<▼>	SHNM	XXX	LOADSHED GROUP NUMBER	Default: 0 Range: 0 to 99
	<▼>	SHDL	XXX %	LOADSHED DEMAND DELTA	Default: 0% Range: 0 to 60%
	<▼>	SHTM	XXX	MAXIMUM LOADSHED TIME	Default: 60 Minutes Range: 0 to 120 Minutes
	<▼>	DLS1	XXX %	DEMAND LIMIT SWITCH 1	Default: 80% Range: 0 to 100%
	<▼>	DLS2	XXX %	DEMAND LIMIT SWITCH 2	Default: 50% Range: 0 to 100%
D.CHL	DUAL CHILLER CONFIGURATION				
	ENTER	LLEN	ENBL/DSBL	LEAD/LAG CHILLER ENABLE	Default: Disable
	<▼>	MSSL	SLVE/MAST	MASTER/SLAVE SELECT	Default: Master
	<▼>	SLVA	XXX	SLAVE ADDRESS	Default: 0 Range: 0 to 239
	<▼>	LLBL	X	LEAD/LAG BALANCE SELECT	Default: Master Leads 0 = Master Leads 1 = Slave Leads 2 = Automatic
	<▼>	LBD	XXX	LEAD/LAG BALANCE DELTA	Default: 168 hours Range: 40 to 400 hours
	<▼>	LLDY	XXX	LAG START DELAY	Default: 5 minutes Range: 0 to 30 minutes
SLCT	<▼>	PARA	NO/YES	PARALLEL CONFIGURATION	Default: No (Series Flow)
	SETPOINT AND RAMP LOAD				
	ENTER	CLSP	X	COOLING SETPOINT SELECT	Default: Single 0 = Single 1 = Dual Switch 2 = Dual 7 day 3 = Dual CCN Occupied 4 = 4 to 20 mA Input (requires EMM)
	<▼>	HTSP	X	HEATING SETPOINT SELECT	Default: Single 0 = Single 1 = Dual Switch 2 = Dual 7 day 3 = Dual CCN Occupied 4 = 4 to 20 mA Input (requires EMM)
	<▼>	RL.S	ENBL/DSBL	RAMP LOAD SELECT	Default: Enable
	<▼>	CRMP	X.X	COOLING RAMP LOADING	Default: 1.0 Range: 0.2 to 2.0
	<▼>	HRMP	X.X	HEATING RAMP LOADING	Default: 1.0 Range: 0.2 to 2.0
	<▼>	HCSW	COOL/HEAT	HEAT COOL SELECT	Default: Cool
BCST	<▼>	Z.GN	X.X	DEADBAND MULTIPLIER	Default: 1.0 Range: 1.0 to 4.0
	BROADCAST CONFIGURATION				
	ENTER	T.D.BC	OFF/ON	CCN TIME/DATE BROADCAST	Default: Off
	<▼>	OAT.B	OFF/ON	CCN OAT BROADCAST	Default: Off

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
	<▼>	G.S.BC	OFF/ON	GLOBAL SCHEDULE BROADCAST	Default: Off
	<▼>	BC.AK	OFF/ON	CCN BROADCAST ACK'ER	Default: Off

Table 9 - Time Clock Mode and Sub-Mode Directory

SUB-MODE	KEYPAD ENTRY	ITEM	RANGE	ITEM EXPANSION	COMMENT
TIME	TIME OF DAY				
	ENTER	HH.MM	0 - 65535	HOUR AND MINUTE	
DATE	MONTH, DAY, DATE AND YEAR				
	ENTER	MNTH	1 - 12	MONTH OF YEAR	1 = January 2 = February 3 = March
	<▼>	DOM	1 - 31	DAY OF MONTH	
	<▼>	DAY	1 - 7	DAY OF WEEK	1 = Monday 2 = Tuesday 3 = Wednesday
	<▼>	YEAR	1999 - 2098	YEAR OF CENTURY	
SCHD	OCC. AND UNOCC. SCHEDULE				
	ENTER	MON.O	0 - 65535	MONDAY OCCUPIED TIME	
	<▼>	MON.U	0 - 65535	MONDAY UNOCCUPIED TIME	
	<▼>	TUE.O	0 - 65535	TUESDAY OCCUPIED TIME	
	<▼>	TUE.U	0 - 65535	TUESDAY UNOCCUPIED TIME	
	<▼>	WED.O	0 - 65535	WEDNESDAY OCCUPIED TIME	
	<▼>	WED.U	0 - 65535	WEDNESDAY UNOCCUPIED TIME	
	<▼>	THU.O	0 - 65535	THURSDAY OCCUPIED TIME	
	<▼>	THU.U	0 - 65535	THURSDAY UNOCCUPIED TIME	
	<▼>	FRI.O	0 - 65535	FRIDAY OCCUPIED TIME	
	<▼>	FRI.U	0 - 65535	FRIDAY UNOCCUPIED TIME	
	<▼>	SAT.O	0 - 65535	SATURDAY OCCUPIED TIME	
	<▼>	SAT.U	0 - 65535	SATURDAY UNOCCUPIED TIME	
	<▼>	SUN.O	0 - 65535	SUNDAY OCCUPIED TIME	
	<▼>	SUN.U	0 - 65535	SUNDAY UNOCCUPIED TIME	

Table 10 - Operating Modes Directory

SUB-MODE	KEYPAD ENTRY	ITEM	DISPLAY	ITEM EXPANSION	COMMENT
MODE	MODES CONTROLLING UNIT				
	ENTER	MD01	OFF/ON	FSM CONTROLLING CHILLER	
	<▼>	MD02	OFF/ON	WSM CONTROLLING CHILLER	
	<▼>	MD03	OFF/ON	MASTER/SLAVE CONTROL	
	<▼>	MD04	OFF/ON	LOW SOURCE PROTECTION	
	<▼>	MD05	OFF/ON	RAMP LOAD LIMITED	
	<▼>	MD06	OFF/ON	TIMED OVERRIDE IN EFFECT	
	<▼>	MD07	OFF/ON	LOW COOLER SUCTION TEMPA	
	<▼>	MD08	OFF/ON	LOW COOLER SUCTION TEMPB	
	<▼>	MD09	OFF/ON	SLOW CHANGE OVERRRIDE	
	<▼>	MD10	OFF/ON	MINIMUM OFF TIME ACTIVE	
	<▼>	MD11	OFF/ON	LOW SUCTION SUPERHEAT A	
	<▼>	MD12	OFF/ON	LOW SUCTION SUPERHEAT B	
	<▼>	MD13	OFF/ON	DUAL SETPOINT	
	<▼>	MD14	OFF/ON	TEMPERATURE RESET	
	<▼>	MD15	OFF/ON	DEMAND LIMIT IN EFFECT	
	<▼>	MD16	OFF/ON	COOLER FREEZE PROTECTION	
	<▼>	MD17	OFF/ON	LO TMP COOL/HI TMP HEAT	
	<▼>	MD18	OFF/ON	HI TMP COOL/LO TMP HEAT	
	<▼>	MD19	OFF/ON	MAKING ICE	
	<▼>	MD20	OFF/ON	STORING ICE	

<▼>	MD21	OFF/ON	HIGH SCT CIRCUIT A	
<▼>	MD22	OFF/ON	HIGH SCT CIRCUIT B	
<▼>	MD23	OFF/ON	UNIT OFF: NO WATER FLOW	See Note

Note: Recycle restart pending 5 minute delay to prove chilled water flow.

Alarms and Alerts —Note that, in general, a "T" prefix refers to an "alert" fault which can shut down one refrigerant circuit of a multicircuit unit, and an "A"

prefix refers to an "alarm" fault which result in a shutdown of the entire unit.

Table 11 — Alarm and Alert Codes

ALARM/ALERT CODE	ALARM OR ALERT	DESCRIPTION	WHY WAS THIS ALARM GENERATED?	ACTION TAKEN BY CONTROL	RESET METHOD	PROBABLE CAUSE
T051	Alert	Circuit A, Compressor 1 Failure	Compressor feedback signal does not match compressor state	Circuit A shut down	Manual	High pressure or loss-of-charge switch open, circuit breaker tripped, loss of main power, faulty CSB or CPCS board, loss of condenser air, service valve closed.
A051	Alarm	Circuit A, Compressor 1 Current Detected After Shutdown	Compressor current was detected after compressor output was turned off.	Turn off all unit compressors	Manual	Compressor contactor contacts welded together or contactor is energized when compressor output is off.
T052	Alert	Circuit A, Compressor 2 Failure	Compressor feedback signal does not match compressor state	Circuit A shut down. Circuit restarts in 1 minute. Compressor A2 deactivated until alarm is reset.	Manual	High pressure switch open, circuit breaker tripped, loss of main power, faulty CSB or CPCS board, loss of condenser air, service valve closed.
A052	Alarm	Circuit A, Compressor 2 Current Detected After Shutdown	Compressor current was detected after compressor output was turned off.	Turn off all unit compressors	Manual	Compressor contactor contacts welded together or contactor is energized when compressor output is off.
T053	Alert	Circuit A, Compressor 3 Failure	Compressor feedback signal does not match compressor state	Circuit A shut down. Circuit restarts in 1 minute. Compressor A3 deactivated until alarm is reset.	Manual	High pressure switch open, circuit breaker tripped, loss of main power, faulty CSB or CPCS board, loss of condenser air, service valve closed.
A053	Alarm	Circuit A, Compressor 3 Current Detected After Shutdown	Compressor current was detected after compressor output was turned off.	Turn off all unit compressors	Manual	Compressor contactor contacts welded together or contactor is energized when compressor output is off.
T054	Alert	Circuit A, Compressor 4 Failure	Compressor feedback signal does not match compressor state	Circuit A shut down. Circuit restarts in 1 minute. Compressor A4 deactivated until alarm is reset.	Manual	High pressure switch open, circuit breaker tripped, loss of main power, faulty CSB or CPCS board, loss of condenser air, service valve closed.
A054	Alarm	Circuit A, Compressor 4 Current Detected After Shutdown	Compressor current was detected after compressor output was turned off.	Turn off all unit compressors	Manual	Compressor contactor contacts welded together or contactor is energized when compressor output is off.
T055	Alert	Circuit B, Compressor 1 Failure	Compressor feedback signal does not match compressor state	Circuit B shut down	Manual	High pressure or loss-of-charge switch open, circuit breaker tripped, loss of main power, faulty CSB or CPCS board, loss of condenser air, service valve closed.
A055	Alarm	Circuit B, Compressor 1 Current Detected After Shutdown	Compressor current was detected after compressor output was turned off.	Turn off all unit compressors	Manual	Compressor contactor contacts welded together or contactor is energized when compressor output is off.
T056	Alert	Circuit B, Compressor 2 Failure	Compressor feedback signal does not match compressor state	Circuit B shut down. Circuit restarts in 1 minute. Compressor B2 deactivated until alarm is reset.	Manual	High pressure switch open, circuit breaker tripped, loss of main power, faulty CSB or CPCS board, loss of condenser air, service valve closed.

Table 11 — Alarm and Alert Codes (cont'd)

ALARM/ALERT CODE	ALARM OR ALERT	DESCRIPTION	WHY WAS THIS ALARM GENERATED?	ACTION TAKEN BY CONTROL	RESET METHOD	PROBABLE CAUSE
A056	Alarm	Circuit B, Compressor 2 Current Detected After Shutdown	Compressor current was detected after compressor output was turned off.	Turn off all unit compressors	Manual	Compressor contactor contacts welded together or contactor is energized when compressor output is off.
T057	Alert	Circuit B, Compressor 3 Failure	Compressor feedback signal does not match compressor state	Circuit B shut down. Circuit restarts in 1 minute. Compressor B3 deactivated until alarm is reset.	Manual	High pressure switch open, circuit breaker tripped, loss of main power, faulty CSB or CPCS board, loss of condenser air, service valve closed.
A057	Alarm	Circuit B, Compressor 3 Current Detected After Shutdown	Compressor current was detected after compressor output was turned off.	Turn off all unit compressors	Manual	Compressor contactor contacts welded together or contactor is energized when compressor output is off.
T058	Alert	Circuit B, Compressor 4 Failure	Compressor feedback signal does not match compressor state	Circuit B shut down. Circuit restarts in 1 minute. Compressor B4 deactivated until alarm is reset.	Manual	High pressure switch open, circuit breaker tripped, loss of main power, faulty CSB or CPCS board, loss of condenser air, service valve closed.
A058	Alarm	Circuit B, Compressor 4 Current Detected After Shutdown	Compressor current was detected after compressor output was turned off.	Turn off all unit compressors	Manual	Compressor contactor contacts welded together or contactor is energized when compressor output is off.
A060	Alarm	Cooler Leaving Fluid Thermistor Failure (T1)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Chiller shut down after pumpdown is complete.	Automatic	Thermistor failure, damaged cable/wire or wiring error.
A061	Alarm	Cooler Entering Fluid Thermistor Failure (T2)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Chiller shut down after pumpdown is complete.	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T064	Alert	Circuit A Saturated Condensing Temp Thermistor Failure (T3)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Circuit A shut down after pumpdown is complete.	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T065	Alert	Circuit B Saturated Condensing Temp Thermistor Failure (T4)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Circuit B shut down after pumpdown is complete.	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T066	Alert	Circuit A Saturated Suction Temperature Thermistor Failure (T5)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Circuit A shut down after pumpdown is complete. (EXV equipped units only)	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T067	Alert	Circuit B Saturated Suction Temperature Thermistor Failure (T6)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Circuit B shut down after pumpdown is complete. (EXV equipped units only)	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T068	Alert	Circuit A Compressor Suction Temperature Thermistor Failure (T7)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Circuit A shut down after pumpdown is complete. (EXV equipped units only)	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T069	Alert	Circuit B Compressor Suction Temperature Thermistor Failure (T8)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Circuit B shut down after pumpdown is complete. (EXV equipped units only)	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T073	Alert	Outside Air Temperature Thermistor Failure (T9)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Temperature reset disabled. Chiller continues to operate under normal control setpoints.	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T074	Alert	Space Temperature Thermistor Failure (T10)	Thermistor outside range of -40 to 245°F (-40 to 118°C)	Temperature reset disabled. Chiller continues to operate under normal control setpoints.	Automatic	Thermistor failure, damaged cable/wire or wiring error.
T077	Alert	Circ. A Sat. Suction Temp Exceeds Cooler Leaving Fluid Temp	Saturated suction temperature is greater than leaving fluid temperature for more than 5 minutes.	Circuit A shut down after pumpdown is complete.	Automatic	Faulty expansion valve or EXV board, faulty cooler suction thermistor (T5) or leaving fluid thermistor (T1). Cooler suction thermistor (T5) not fully inserted into well.

Table 11 — Alarm and Alert Codes (cont'd)

ALARM/ALERT CODE	ALARM OR ALERT	DESCRIPTION	WHY WAS THIS ALARM GENERATED?	ACTION TAKEN BY CONTROL	RESET METHOD	PROBABLE CAUSE
T078	Alert	Circ. B Sat. Suction Temp Exceeds Cooler Leaving Fluid Temp	Saturated suction temperature is greater than leaving fluid temperature for more than 5 minutes.	Circuit B shut down after pumpdown is complete.	Automatic	Faulty expansion valve or EXV board, faulty cooler suction thermistor (T6) or leaving fluid thermistor (T1). Cooler suction thermistor (T6) not fully inserted into well.
T079	Alert	Lead/Lag Leaving Fluid Thermistor Failure	Saturated suction temperature is greater than leaving fluid temperature for more than 5 minutes.	Dual chiller algorithm continues to operate using Master chiller LWT sensor. Master is lead chiller.	Automatic	Dual chiller LWT thermistor (T9) faulty. Damaged cable/wire or wiring error. LL.EN (Configuration Mode, Sub-mode D.CHIL) ENBL without thermistor installed.
T090	Alert	Circuit A Discharge Pressure Transducer Failure (For units with transducers only)	Voltage ratio more than 99.9%, or less than 0.5%.	Circuit A shut down after pumpdown is complete.	Automatic	Transducer failure, poor connection to transducer or MBB, wiring damage/error.
T091	Alert	Circuit B Discharge Pressure Transducer Failure (For units with transducers only)	Voltage ratio more than 99.9%, or less than 0.5%.	Circuit B shut down after pumpdown is complete.	Automatic	Transducer failure, poor connection to transducer or MBB, wiring damage/error.
T092	Alert	Circuit A Suction Pressure Transducer Failure (For units with transducers only)	Voltage ratio more than 99.9%, or less than 0.5%.	Circuit A shut down	Automatic	Transducer failure, poor connection to transducer or MBB, wiring damage/error.
T093	Alert	Circuit B Suction Pressure Transducer Failure (For units with transducers only)	Voltage ratio more than 99.9%, or less than 0.5%.	Circuit B shut down	Automatic	Transducer failure, poor connection to transducer or MBB, wiring damage/error.
T110	Alert	Circuit A Loss of Charge (for units with transducers only)	Circuit is off, and the discharge pressure is less than 10 psig for 30 sec.	Circuit A is prevented from starting	Automatic when discharge pressure is greater than 15 psig	Refrigerant leak or transducer failure.
T111	Alert	Circuit B Loss of Charge (for units with transducers only)	Circuit is off, and the discharge pressure is less than 10 psig for 30 sec.	Circuit B is prevented from starting	Automatic when discharge pressure is greater than 15 psig	Refrigerant leak or transducer failure.
T112	Alert	Circuit A High Suction Superheat	If EXV is open greater than 98%, suction superheat is greater than 75 F (41.7 C) and saturated suction temperature is less than MOP for 5 minutes.*	Circuit A shut down after pumpdown is complete.	Manual	Faulty expansion valve or EXV board, low refrigerant charge, plugged filter drier, faulty suction gas thermistor (T7) or cooler thermistor (T5). Faulty Ckt. A suction pressure transducer or wiring if equipped.
T113	Alert	Circuit B High Suction Superheat	If EXV is open greater than 98%, suction superheat is greater than 75° F (41.7° C) and saturated suction temperature is less than MOP for 5 minutes.*	Circuit B shut down after pumpdown is complete.	Manual	Faulty expansion valve or EXV board, low refrigerant charge, plugged filter drier, faulty suction gas thermistor (T8) or cooler thermistor (T6). Faulty Ckt. B suction pressure transducer or wiring if equipped.
T114	Alert	Circuit A Low Suction Superheat	If EXV is open less than 10% and either suction superheat is less than superheat setpoint minus 10°F (5.6° C), or saturated suction temperature is greater than MOP for 5 minutes.*	Circuit A shut down after pumpdown is complete.	Automatic restart if first daily occurrence. Manual reset thereafter.	Faulty expansion valve or EXV board, faulty suction gas thermistor (T7) or cooler thermistor (T5). Faulty Ckt. A suction pressure transducer or wiring if equipped.
T115	Alert	Circuit B Low Suction Superheat	If EXV is open less than 10% and either suction superheat is less than superheat setpoint minus 10°F (5.6° C), or saturated suction temperature is greater than MOP for 5 minutes.*	Circuit B shut down after pumpdown is complete.	Automatic restart if first daily occurrence. Manual reset thereafter.	Faulty expansion valve or EXV board, faulty suction gas thermistor (T8) or cooler thermistor (T6). Faulty Ckt. B suction pressure transducer or wiring if equipped.
T116	Alert	Circuit A Low Cooler Suction Temperature	1. If the saturated suction temperature is 24 to 29° F (13.3 to 16.1°C) below cooler LWT and also 2°F (1.1°C) less than Brine Freeze Setpoint. 2. If the suction temperature is 30°F (16.7°C) below cooler LWT and also 2°F (1.1°C) less than Brine Freeze Setpoint for 10 minutes.	1. Mode 7 initiated. No additional capacity steps added. Alert not generated. 2. Circuit shut down without going through pumpout. Alert is generated.	1. Automatic if condition is corrected. 2. Manual	Faulty expansion valve or EXV board, low refrigerant charge, plugged filter drier, faulty suction gas thermistor (T7) or cooler thermistor (T5), low cooler flow. Faulty Ckt. A suction pressure transducer or wiring if equipped.

Table 11 — Alarm and Alert Codes (cont'd)

ALARM/ALERT CODE	ALARM OR ALERT	DESCRIPTION	WHY WAS THIS ALARM GENERATED?	ACTION TAKEN BY CONTROL	RESET METHOD	PROBABLE CAUSE
T117	Alert	Circuit B Low Cooler Suction Temperature	1. If the saturated suction temperature is 24 to 29° F (13.3 to 16.1°C) below cooler LWT and also 2°F (1.1°C) less than Brine Freeze Setpoint. 2. If the suction temperature is 30°F (16.7°C) below cooler LWT and also 2°F (1.1°C) less than Brine Freeze Setpoint for 10 minutes.	1. Mode 7 initiated. No additional capacity steps added. Alert not generated. 2. Circuit shut down without going through pumpout. Alert is generated.	1. Automatic if condition is corrected. 2. Manual	Faulty expansion valve or EXV board, low refrigerant charge, plugged filter drier, faulty suction gas thermistor (T8) or cooler thermistor (T6), low cooler flow. Faulty Ckt. B suction pressure transducer or wiring if equipped.
T118	Alert	Circuit A Low Oil Pressure	Oil pressure switch opens after 2 minutes of operation at startup or 1 minute during normal operation.	Circuit shut down without going through pumpdown.	Manual	Oil Pump Failure, low oil level, switch failure, compressor circuit breaker trip, low suction superheat operation.
T119	Alert	Circuit B Low Oil Pressure	Oil pressure switch opens after 2 minutes of operation at startup or 1 minute during normal operation.	Circuit shut down without going through pumpdown.	Manual	Oil Pump Failure, low oil level, switch failure, compressor circuit breaker trip, low suction superheat operation.
T133	Alert	Circuit A Low Refrigerant Pressure (for units with transducers only)	Suction pressure is below the low pressure setpoint for more than 3 minutes while the circuit is running.	Circuit shut down without going through pumpdown.	Automatic when suction pressure rises 10 psig above low pressure setpoint if first daily occurrence. Manual reset thereafter.	Low refrigerant charge, faulty EXV, plugged filter drier, or faulty transducer. Unit configured for pressure transducers when not equipped. Refer to Configuration, OPT1, PRTS.
T134	Alert	Circuit B Low Refrigerant Pressure (for units with transducers only)	Suction pressure is below the low pressure setpoint for more than 3 minutes while the circuit is running.	Circuit shut down without going through pumpdown.	Automatic when suction pressure rises 10 psig above low pressure setpoint if first daily occurrence. Manual reset thereafter.	Low refrigerant charge, faulty EXV, plugged filter drier, or faulty transducer. Unit configured for pressure transducers when not equipped. Refer to Configuration, OPT1, PRTS.
T135	Alert	Circuit A Failure to Pump Down (for units with transducers only)	With EXV closed, SST did not drop 10°F (5.6°C) , or SST is not 10°F (5.6°C) below LWT, or SST is not less than -15°F (-26°C) within 3 minutes.	Circuit shut down without going through pumpdown.	Manual	Faulty EXV or faulty transducer. Unit configured for pressure transducers when not equipped. Refer to Configuration, OPT1, PRTS.
T136	Alert	Circuit B Failure to Pump Down (for units with transducers only)	With EXV closed, SST did not drop 10°F (5.6°C) , or SST is not 10°F (5.6°C) below LWT, or SST is not less than -15°F (-26°C) within 3 minutes.	Circuit shut down without going through pumpdown.	Manual	Faulty EXV or faulty transducer. Unit configured for pressure transducers when not equipped. Refer to Configuration, OPT1, PRTS.
A150	Alarm	Unit is in Emergency Stop	CCN emergency stop command received.	Circuit shut down without going through pumpdown.	Automatic once CCN command for EMSTOP returns to normal.	Emergency Stop set to Enable by CCN Network command.
A151	Alarm	Illegal Configuration	One or more illegal configurations exist.	Chiller is not allowed to run.	Manual once configuration errors are corrected.	Configuration error. See note on page ____.
A152	Alarm	Unit down due to Failure	Both circuits are down due to alarms or alerts.	Chiller is unable to run.	Automatic once alarms/alerts are cleared that prevent the unit from starting.	Alarm notifies user that both circuits are down, and immediate service is required.

Table 11 — Alarm and Alert Codes (cont'd)

ALARM/ALERT CODE	ALARM OR ALERT	DESCRIPTION	WHY WAS THIS ALARM GENERATED?	ACTION TAKEN BY CONTROL	RESET METHOD	PROBABLE CAUSE
A153	Alarm	Real Time Clock Hardware Failure	Real time clock on MBB failed.	Occupancy schedule will not be used. Chiller defaults to Local-On.	Automatic when correct clock control restarts.	Time/Date/Month/Day/Year not properly set. Replace MBB if error occurs again.
A154	Alarm	Serial EEPROM Hardware Failure	MBB hardware failure	Chiller is unable to run.	Manual	Main Base Board failure.
T155	Alert	Serial EEPROM Storage Failure Error	MBB configuration/storage failure	No action taken	Manual	Potential MBB failure. Download current software. Replace MBB if error occurs again.
A156	Alarm	Critical Serial EEPROM Storage Failure Error	MBB configuration/storage failure	Chiller is not allowed to run.	Manual	Main Base Board failure.
A157	Alarm	A/D Hardware Failure	Hardware failure with peripheral device	Chiller is not allowed to run.	Manual	Main Base Board failure.
T170	Alert	Loss of communication with the Compressor Expansion Module	MBB cannot communicate with CXB	Compressors A3, A4, and B3, and unloaders A2, B2 unable to operate.	Automatic	Wiring error, faulty wiring or failed CXB. Incorrect configuration. Verify (Configuration, UNIT, CMP.A, CMP.B) and (Configuration, OPT1, CA.UN, CB.UN).
A172	Alarm	Loss of Communication with the EXV module	MBB cannot communicate with EXV Board	Circuit shut down without going through pumpdown	Automatic	Wiring error, faulty wiring, EXV motor shorted to ground, or failed EXV board.
A173	Alarm	Loss of Communication with the Energy Management module	MBB cannot communicate with EMM	4 to 20mA temperature reset disabled. Demand limit set to 100%. 4 to 20mA setpoint control disabled.	Automatic	Wiring error, faulty wiring or failed EMM board. Configuration error if EMM is not installed. Verify (Configuration, OPT2, ICE.M) and (Configuration, RSET, CRST, HRST, DMDC).
T174	Alert	4-20 mA Cooling Setpoint Input Failure	If configured for EMM, and input is less than 2 mA or greater than 22 mA.	4 to 20 mA setpoint control is disabled. Chiller controls to CSP.1.	Automatic	Loss of 4 to 20 mA control signal, faulty wiring, or faulty EMM.
T176	Alert	4-20 mA Reset Input Failure	If configured for EMM, and input is less than 2 mA or greater than 22 mA.	4 to 20 mA reset is disabled. Chiller returns to normal setpoint control.	Automatic	Loss of 4 to 20 mA control signal, faulty wiring, or faulty EMM.
T177	Alert	4-20 mA Demand Limit Input Failure	If configured for EMM, and input is less than 2 mA or greater than 22 mA.	4 to 20 mA demand limit is disabled. Demand limit is set to 100%.	Automatic	Loss of 4 to 20 mA control signal, faulty wiring, or faulty EMM.
A200	Alarm	Cooler Pump Interlock Contacts Failed to Close at Startup	Chilled water flow switch or interlock not closed within 5 minutes after unit is started.	Cooler pump output turned off. Chiller shut down without going through pumpdown.	Manual	Failure of cooler pump, flow switch, or interlock.
A201	Alarm	Cooler Pump Interlock Contacts Opened During Normal Operation	Chilled water flow switch or interlock opened during operation	Cooler pump output turned off. Chiller shut down without going through pumpdown.	Manual	Failure of cooler pump, flow switch, or interlock.
A202	Alarm	Cooler Pump Interlock Contacts Closed While Pump Relay OFF	If configured for cooler pump control and chilled water flow switch or interlock closed while cooler pump output is off.	Chiller not allowed to start	Manual	Failure of cooler pump relay or interlock. Chilled water flow switch or interlock stuck closed. Welded contacts.
T203	Alert	Loss of Communication with Slave Chiller	Master MBB cannot communicate with Slave MBB.	Dual chiller control algorithm disabled. Chiller runs in stand-alone mode.	Automatic	CCN bus wiring error, loss of power to Slave MBB, incorrect Slave address. Slave MBB failure.
T204	Alert	Loss of Communication with Master Chiller	Slave MBB cannot communicate with Master MBB.	Dual chiller control algorithm disabled. Chiller runs in stand-alone mode.	Automatic	CCN bus wiring error, loss of power to Master MBB. Master MBB failure.
T205	Alert	Master and Slave Chiller with same address	Master and Slave chiller have the same CCN address (CCN.A).	Dual chiller control algorithm disabled. Master and Slave chillers run in Stand Alone Mode.	Automatic	CCN address for both chillers is the same. Each chiller must have a unique address. Check Configuration, OPT2, CCN.A.

Table 11 — Alarm and Alert Codes (cont'd)

ALARM/ALERT CODE	ALARM OR ALERT	DESCRIPTION	WHY WAS THIS ALARM GENERATED?	ACTION TAKEN BY CONTROL	RESET METHOD	PROBABLE CAUSE
T206	Alert	High Leaving Chilled Water Temperature	LWT is greater than LCW alert limit plus control point, and total capacity is 100%, and LWT is rising.	No action taken.	Automatic	Load is greater than unit capacity, low cooler flow, or compressor fault. Check for other alarms/alerts.
A207	Alarm	Cooler Freeze Protection	Cooler EWT or LWT is less than brine freeze setpoint.	Chiller shut down without going through pumpdown. Cooler pump output remains energized if cooler pump control (CPC) is ON.	Automatic restart if first daily occurrence. Manual reset thereafter.	Low water flow, sudden loss of load, faulty thermistor (T1 or T2).
A208	Alarm	Low Cooler Fluid Flow	Cooler EWT is less than LWT by 3°F (1.7°C) for 1 minute after a circuit is started..	Chiller shut down without going through pumpdown. Cooler pump output remains energized if cooler pump control (CPC) is ON.	Manual	Faulty cooler pump, low water flow, plugged fluid strainer. Cooler water flow backwards.
T500	Alert	Current Sensor Board Failure – A1	Output of the CSB is a constant high value.	Stop compressor A1.	Automatic	Faulty CSB or wiring. CSB enabled without being connected.
T501	Alert	Current Sensor Board Failure – A2	Output of the CSB is a constant high value.	Stop compressor A2.	Automatic	Faulty CSB or wiring. CSB enabled without being connected.
T502	Alert	Current Sensor Board Failure – A3	Output of the CSB is a constant high value.	Stop compressor A3.	Automatic	Faulty CSB or wiring. CSB enabled without being connected.
T503	Alert	Current Sensor Board Failure – A4	Output of the CSB is a constant high value.	Stop compressor A4.	Automatic	Faulty CSB or wiring. CSB enabled without being connected.
T504	Alert	Current Sensor Board Failure – B1	Output of the CSB is a constant high value.	Stop compressor B1.	Automatic	Faulty CSB or wiring. CSB enabled without being connected.
T505	Alert	Current Sensor Board Failure – B2	Output of the CSB is a constant high value.	Stop compressor B2.	Automatic	Faulty CSB or wiring. CSB enabled without being connected.
T506	Alert	Current Sensor Board Failure – B3	Output of the CSB is a constant high value.	Stop compressor B3.	Automatic	Faulty CSB or wiring. CSB enabled without being connected.
T507	Alert	Current Sensor Board Failure – B4	Output of the CSB is a constant high value.	Stop compressor B4.	Automatic	Faulty CSB or wiring. CSB enabled without being connected.
T950	Alert	Loss of Communication with Water System Mana	No communications have been received by MBB for 5 minutes.	WSM forces are removed. Chiller runs under its own control.	Automatic	WSM failed, wiring error, loss of power, loose connector, wrong address.
A951	Alarm	Loss of Communication with Flotronic System Manager.	No communications have been received by MBB for 5 minutes.	FSM/CSM forces are removed. Chiller runs under its own control.	Automatic	FSM/CSM failed, wiring error, loss of power, loose connector, wrong address.

LEGEND

CCN	—	Carrier Comfort Network
CSM	—	Chillervisor System Manager
DGT	—	Discharge Gas Temperature
EWT	—	Entering Water Temperature
EXV	—	Electronic Expansion Valve
FSM	—	Flotronic™ System Manager
HPS	—	High-Pressure Switch
LCW	—	Leaving Chilled Water
LWT	—	Leaving Water Temperature
MBB	—	Main Base Board
MCT_SP	—	Maximum Condensing Temperature Set Point
SCT	—	Saturated Condensing Temperature
SST	—	Saturated Suction Temperature
W/C	—	Water-Cooled
WSM	—	Water-System Manager

Table 12 - Master Chiller Configuration

SUBMODE	ITEM	KEYPAD ENTRY	DISPLAY	ITEM EXPANSION	COMMENTS
OPT2		ENTER	CTRL	CONTROL METHOD	(SEE NOTE 1)
	CTRL	ENTER	0	SWITCH	SCROLLING STOPS
		ENTER	0		VALUE FLASHES
		▼	3		SELECT 3
	CTRL	ENTER	3	CCN	CHANGE ACCEPTED
		ESCAPE	CTRL		
		▼	CCNA		
	CCNA	ENTER	1	CCN ADDRESS	DEFAULT 1
		ESCAPE	CCNA		
		▼	CCNB		
	CCNB	ENTER	0	CCN BUS NUMBER	DEFAULT 0
		ESCAPE	CCNB		
		ESCAPE	OPT2		
		▼	RSET		PROCEED TO SUBMODE D.CHL
D.CHL		ENTER	LL.EN	LEAD/LAG CHILLER ENABLE	
	LL.EN	ENTER	DSBL		SCROLLING STOPS
		ENTER	DSBL		VALUE FLASHES
		▼	ENBL		SELECT ENBL
	LLEN	ENTER	ENBL	LEAD/LAG CHILLER ENABLE	CHANGE ACCEPTED
		ESCAPE	LLEN		
		▼	MS.SL	MASTER /SLAVE SELECT	
	MS.SL	ENTER	MAST	MASTER /SLAVE SELECT	DEFAULT MAST
		ESCAPE	MS.SL		
		▼	SLV.A	SLAVE ADDRESS	
	SLV.A	ENTER	0		SCROLLING STOPS
		ENTER	0		VALUE FLASHES
		▼	2		SELECT 2
	SLV.A	ENTER	2	SLAVE ADDRESS	CHANGE ACCEPTED
		ENTER	SLV.A		
		▼	LL.BL	LEAD/LAG BALANCE SELECT	

Table 12 - Master Chiller Configuration (cont'd)

D.CHL (Cont'd)	LL.BL	ENTER	0	LEAD/LAG BALANCE SELECT	DEFAULT 0
		ESCAPE	LL.BL		
		▼	LL.B.D	LEAD/LAG BALANCE DELTA	
	LL.B.D	ENTER	168	LEAD/LAG BALANCE DELTA	DEFAULT 168
		ESCAPE	LL.B.D		
		▼	LL.DY	LAG START DELAY	
	LL.DY	ENTER	5		SCROLLING STOPS
		ENTER	5		VALUE FLASHES
		▼	10		SELECT 10
	LL.DY	ENTER	10	LAG START DELAY	CHANGE ACCEPTED
		ESCAPE	LL.DY		
		▼			
	PARA	ENTER	YES	PARALLEL CONFIGURATION	PARALLEL PIPING (SEE NOTE 2)
		ESCAPE	PARA		
		ESCAPE	D.CHL		MASTER COMPLETE

Notes:

1. The desired control method should be configured for the Master only. Options are 0 = Switch, 1 = 7 Day Schedule, 2 = Occupancy, 3 = CCN. The Slave is always configured for "0" - SWITCH control.
2. Yes = Parallel piping configuration. No = Series piping configuration. Master and Slave chillers must both be configured for the same piping configuration.

Table 13 - Slave Chiller Configuration

SUBMODE	ITEM	KEYPAD ENTRY	DISPLAY	ITEM EXPANSION	COMMENTS
OPT2	OPT2	ENTER			
	CTRL	ENTER	0	CONTROL METHOD	SEE NOTE
		ESCAPE	0	SWITCH	
		ESCAPE	CTRL		
	CTRL	▼	CCNA		
	CCNA	ENTER	1	CCN ADDRESS	SCROLLING STOPS
		ENTER	1		VALUE FLASHES
		▼	2		SELECT 2 (SEE NOTE 1)
	CCNA	ENTER	2	CCN ADDRESS	CHANGE ACCEPTED
		ESCAPE	CCNA		
		▼	CCNB		
	CCNB	ENTER	0	CCN BUS NUMBER	DEFAULT 0 (SEE NOTE 2)
		ESCAPE	CCNB		
		ESCAPE	OPT2		
		▼	RSET		PROCEED TO SUBMODE D.CHL
D.CHL	D.CHL	ENTER			
		ENTER	LL.EN	LEAD/LAG CHILLER ENABLE	
	LL.EN	ENTER	DSBL		SCROLLING STOPS
		ENTER	DSBL		VALUE FLASHES
		▼	ENBL		SELECT ENBL
	LL.EN	ENTER	ENBL	LEAD/LAG CHILLER ENABLE	CHANGE ACCEPTED
		ESCAPE	LL.EN		
		▼	MS.SL	MASTER /SLAVE SELECT	
	MS.SL	ENTER	MAST		SCROLLING STOPS
		ENTER	MAST		VALUE FLASHES
		▼	SLVE		SELECT SLVE
	MS.SL	ENTER	SLVE	MASTER /SLAVE SELECT	CHANGE ACCEPTED
		ESCAPE	MS.SL		
		▼			▼ 5 ITEMS
	PARA	ENTER	YES	PARALLEL CONFIGURATION	DEFAULT YES SEE NOTE 4
		ESCAPE	D.CHL		SLAVE COMPLETE

Notes:

1. Slave CCN Address must be different than Master.
2. Slave CCN Bus Number must be the same as Master.
3. Slave does not require SLV.A, LL.BL, LL.B.D or LL.DY to be configured.
4. Yes = Parallel piping configuration. No = Series piping configuration. Master and Slave chillers must both be configured for the same piping configuration.