YORK®	*Millennium®* **REMOTE CONTROL CENTER** **YCAL CHILLERS AND YCUL CONDENSING UNITS**	
OPERATING INSTRUCTIONS	New Release	Form 150.62-NM3 (100)

MILLENNIUM®
REMOTE CONTROL CENTER
OPERATORS GUIDE

29535A

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INTRODUCTION

The YORK *Millennium* Remote Control Center (RCC) is a microprocessor-based control system capable of remote chiller/condensing unit control. It is capable of controlling cooling setpoints, load limit setpoint, daily/holiday schedule, and the remote start/stop. Most unit operational and history data is available on the RCC. One RCC is needed for each chiller for remote monitoring or control.

A 40 character backlit LCD display (2 lines of 20 characters) allows the operator to display system operating parameters as well as access programmed information already in memory. A keypad for chiller start/stop, programming and accessing setpoints, pressures, temperatures, cutouts, daily schedule, and fault information is provided.

Microprocessor Board

The Microprocessor Board is the controller and decision maker in the control panel. This board has no inputs other than the RS-485 port. All communication with the chiller will occur over the RS-485 port. All printing will occur on the RS-232 port.

The Microprocessor Board does not contain a Real Time Clock integrated circuit chip with an internal battery back up. Thus all values that are modifiable on the RCC must be stored in the chiller's battery backed RAM.

40 Character Display

The 40 Character Display is a liquid-crystal display used for displaying system parameters and operator messages. The display has a lighted background for night viewing as well as a special feature, which intensifies the display for viewing in direct sunlight.

Keypad

An operator keypad allows complete control of the unit from a remote location. The keypad offers commands available to access displays, program setpoints, and initiate unit run commands. There are 5 divisions to the keypad. They are outlined below.

Status – This section consists of the STATUS key and the 40 character display. The STATUS key will be used to display the current operating status of all systems on the unit.

Display/Print – This section contains keys associated with the display and printing of unit and system data. Following is a list of keys in the Display section of the keypad.

- OPER DATA
- PRINT
- HISTORY

Entry – This section contains the keys used for data entry in the various program modes. These keys are as follows.

- ENTER
- UP Arrow
- DOWN Arrow

Setpoints – This section contains keys for programming the setpoint, schedule, and load limiting the unit. These keys are as follows.

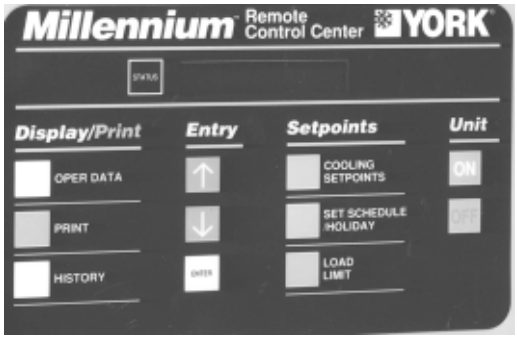
- Cooling Setpoints
- Set Schedule/Holiday
- Load Limit

Unit – This section contains two keys, one for turning the unit on and one for turning the unit off.

Communications

The communications between the RCC and the Middle Market Micropanel will be limited to once every 16 seconds. The Micropanel will ignore communications for 15 seconds after processing a valid transmission. The Micropanel will also ignore communications for 15 seconds after power is applied.

The Chiller Micropanel will use local control, if a valid transmission has not been received for 5 minutes from the RCC. The remote control will be used again once a valid new transmission has been processed. The RCC will display an error message indicating the communications problem when such a condition occur.



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STATUS MESSAGES

Pressing the STATUS key will enable the operator to determine the present operating status of the chiller. The messages displayed will include running status, cooling demand, fault status, external cycling device status, load limiting and anti-recycle timer status. The display will be a single message relating to the highest priority message as determined by the microprocessor. Status messages fall into the categories of General and Fault Status with each of the categories discussed below.

General Status Messages

Each of the general status messages with a description of its meaning will follow. In the case of messages which apply to individual systems, SYS 1 and SYS 2 messages will both be displayed and may be different. SYS 2 messages will be blanked out on single system units. For a more detailed explanation of each status message, refer to the Unit Installation, Operation and Maintenance Manual.

```
UNIT SWITCH OFF
SHUTDOWN
```

This message informs the operator that the UNIT switch on the control panel is in the OFF position, which will not allow the unit to run.

```
DAILY SCHEDULE
SHUTDOWN
```

The DAILY SCHEDULE SHUTDOWN message indicates that either the daily/holiday schedule programmed is keeping the unit from running or the time is incorrectly set.

```
REMOTE CONTROLLED
SHUTDOWN
```

The REMOTE CONTROLLED SHUTDOWN message indicates that the RCC has turned the unit off, not allowing it to run.

```
FLOW SWITCH/REM STOP
NO RUN PERM
```

NO RUN PERM shows that either the flow switch (or air proving switch) is open or a remote start/stop contact is open in series with the flow switch.

```
SYS 1 SYS SWITCH OFF
SYS 2 SYS SWITCH OFF
```

SYS SWITCH OFF tells that the system switch on the microboard is turned off. The system will not be allowed to run until the switch is turned back on.

```
SYS 1 NO COOL LOAD
SYS 2 NO COOL LOAD
```

These messages inform the operator that the chilled liquid temperature is below the point (determined by the setpoint and control range) that the micro will bring on a system or that the micro has not loaded the lead system far enough into the loading sequence to be ready to bring the lag system ON. The lag system will display this message until the loading sequence is ready for the lag system to start.

```
SYS 1 COMPS RUN X
SYS 2 COMPS RUN X
```

The COMPS RUNNING message indicates that the respective system is running due to demand. The 'X' will be replaced with the number of compressors in that system that are running.

```
SYS 1 AR TIMER
SYS 2 AR TIMER
```

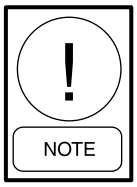
The anti-recycle timer message is displayed when the system is unable to start due the anti-recycle timer being active.

```
SYS 1 AC TIMER
SYS 2 AC TIMER
```

The anti-coincident timer message is displayed when the system is unable to start due the anti-coincident timer being active.

```
SYS 1 DSCH LIMITING
SYS 2 DSCH LIMITING
```

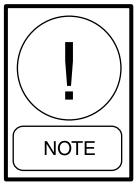
When this message appears, discharge pressure limiting is in effect.



Optional Discharge Pressure Transducers must be installed on the chiller for this function.

```
SYS 1 SUCT LIMITING
SYS 2 SUCT LIMITING
```

When this message appears, suction pressure limiting is in effect.



Suction Pressure Transducers are required for this function.

```
SYS 1 LOAD LIMIT XX%
SYS 2 LOAD LIMIT XX%
```

This message indicates that load limiting is in effect. The percent of the limiting will be displayed as well. This limiting could be due to the load limit input being enabled or the RCC could be sending a load limit command.

```
SYS 1 ZONE THERM OFF
SYS 2 ZONE THERM OFF
```

Condensing Unit Only – These messages indicate that the zone thermostats for system 1 and system 2 are open. These messages will only be displayed when the control mode is programmed for Suction Pressure control.

```
MANUAL
OVERRIDE
```

This message is displayed when the daily schedule has been overridden and the unit is in manual override mode. This will indicate that the Daily Schedule is being ignored and the unit will start-up when demand is present.

```
LOSS OF COMM LINK
TO UNIT PANEL
```

This message is displayed when the Chiller Control Panel has not responded for 5 minutes. This message will also be displayed on RCC power up.

```
PLEASE WAIT.........
INITIALIZING REMOTE
```

This message is displayed when the RCC is loading all history buffer data, current data, and schedule data.

```
FUNCTION NOT ALLOWED
UNDER CONDITIONS
```

This message is displayed when any data key is pressed when the current data is not valid. This will occur before and during the loading of all unit data. It is also displayed for a few seconds when the user tries to change the setpoint, schedule or load limiting when the chiller is in local control mode.

Fault Status Messages

A number of possible fault messages may appear when the STATUS key is pressed. Whenever a fault message appears, the safety thresholds on the unit have been exceeded and the entire unit or a single system will be shut down and in some cases locked out.

• Unit Faults

```
UNIT FAULT:
LOW AMBIENT TEMP
```

The Low Ambient Temp Cutout is a safety shutdown designed to protect the unit from operating in a low ambient condition. If the outdoor ambient temperature falls below the programmable cutout, the chiller will shut down. Restart can occur when temperature rises 2° above the cutoff.

```
UNIT FAULT:
LOW LIQUID TEMP
```

The Leaving Chilled Liquid Temp Cutout protects the chiller from an evaporator freeze-up should the chilled liquid temp drop below the freeze point. The situation could occur under low flow conditions or if the micro panel setpoint values are improperly programmed. Anytime the leaving chilled liquid temperature (water or glycol) drops below the cutout point, the chiller will shutdown. Restart can occur when chilled liquid temperature rises 2°F above the cutout.

```
UNIT FAULT:
115VAC UNDER VOLTAGE
```

The Under Voltage Safety assures that the system is not operated at voltages where malfunction of the microprocessor could result in system damage. When the 115VAC to the micropanel drops below a specific level, a unit fault is initiated to safely shut down the unit. Restart is allowed after the unit is fully powered again and the anti-recycle timers have finished counting down.

```
LOW BATTERY !!
CHECK PROG/SETP/TIME
```

The Low Battery Warning can only occur at unit power-up. When the chiller micropanel is suppled power, the RTC battery is checked on the chiller microboard. If a low battery is found, all programmed setpoints, program values, options, time, schedule, and history buffers will be lost. These values will all be reset to their default values which may not be the desired operating values. Once a faulty battery is detected, the unit will be prevented from running until the PROGRAM key is pressed on the chiller keypad. Once PROGRAM is pressed, the anti-recycle timers will be set to the programmed anti-recycle time to allow the operator time to check setpoints, program values, and options.

• System Faults

Following are all the system fault messages. Note that any message can be displayed for any system. Single system units will blank the second line of the display.

```
SYS 1 HIGH DSCH PRES
SYS 2 HIGH DSCH PRES
```

The Discharge Pressure Cutout is a software cutout in the microprocessor and is backed-up by a mechanical high pressure cutout switch located in the refrigerant circuit. It assures that the system pressure does not exceed safe working limits. The system will shutdown when the programmable cutout is exceeded and will be allowed to restart when the discharge pressure falls below the cutout. ***Optional Discharge transducers must be installed for this function to operate.***

```
SYS 1 LOW SUCT PRES
SYS 2 LOW SUCT PRES
```

The Suction Pressure Cutout is a software cutout that protects the chiller from an evaporator freeze-up should the system attempt to run with a low refrigerant charge or a restriction in the refrigerant circuit. ***This function will not operate unless Suction Pressure Transducers are installed, which are optional on some models.***

```
SYS 1 MP/HPCO FAULT
SYS 2 MP/HPCO FAULT
```

This message is displayed when the system has locked out due to either the compressor motor protector, motor overload or high pressure cutout opening.

```
SYS 1 LOCKED OUT
SYS 2 LOCKED OUT
```

These will be displayed only if a system is locked out and the lockout fault information is not available, or the ON button is pressed on the RCC while a system is locked out on a fault.

UNIT DATA

Operating Data Displays

The OPER DATA key gives the user access to many unit and system operating parameters. Following is a list of displayed operating data screens in the order that they are displayed:

```
LCHLT  =  XXX.X°F
RCHLT  =  XXX.X°F
```

LCHLT = Leaving chilled liquid temperature and RCHLT = Return chilled liquid temperature.

```
DISCHARGE AIR TEMP
      = 57.4°F
```

Condensing Unit Only – This display shows the discharge air temperature of the leaving the evaporator. This display will only be shown when the Control Mode is programmed for Discharge Air.

```
SYSX SUCTION TEMP
      = 73.6°F
```

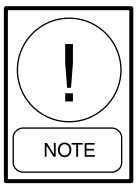
Condensing Unit Only – This message shows the suction line temperature of the respective refrigerant system. The temperature sensors for this function are optional on all models.

```
AMBIENT AIR TEMP
      = XXX.X°F
```

Outside ambient air temperature.

```
SYS X SP = XXXX PSIG
      DP = XXXX PSIG
```

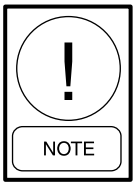
System suction and discharge pressure.



These parameters are only available when the optional Discharge Pressure Transducers and Optional Suction Transducers (some models) are installed on the chiller.

```
SYS X HOURS 1=XXXXX
      2=XXXXX 3=XXXXX
```

System accumulated run times for each system compressor.



Some systems only have two compressors and will only display such.

```
  LOAD TIMER XXX SEC
UNLOAD TIMER XXX SEC
```

Unit load and unload timers. Refer to unit manual for detailed loading and unloading scheme.

```
COOLING DEMAND
        X OF X STEPS
```

The cooling demand indicates the "step" of capacity control the chiller control panel is controlling at. See the chiller manual for details.

```
LEAD SYSTEM IS
SYSTEM NUMBER    X
```

On two system units, this message indicates which system is the lead.

```
EVAP PUMP IS     XXX
EVAP HEATER IS   XXX
```

Chiller evaporator pump contacts and evaporator heater status.

```
SYS X NUMBER OF
COMPS RUNNING    X
```

The number of compressors commanded to run for a particular system.

```
SYS X RUN TIME
XX-XX-XX-XX  D-H-M-S
```

System run time in days, hours, minutes, seconds for the current cycle.

```
SYS X LLSV IS    XXX
HOT GAS SOL IS   XXX
```

System status of liquid line solenoid and hot gas solenoid (optional).

Condenser fan stage for the system.

```
SYS X FAN STAGE XXX
```

Standard control:

Stage 1 = one fan forward
Stage 2 = two fans forward
Stage 3 = N/A

Low Ambient (optional)

Stage 1 = one fan reverse
stage 2 = one fan forward
stage 3 = two fans forward

See unit manual for details.

History Data

The HISTORY key gives the user access to many unit and system operating parameters at the time of a unit of system safety shutdown. When the HISTORY key is pressed the following screen is displayed.

```
DISPLAY SAFETY SHUT-
DOWN NO. X (1 TO 6)
```

The user can use the arrow keys to choose a number from 1 to 6 and ENTER to view any of the 6 history buffers. Buffer number 1 is the most recent and buffer number 6 is the oldest safety shutdown saved. The UP and DOWN arrows can be used to scroll forwards and backwards through the history buffers to view unit data, unit status, and setpoints at the time of shutdown.

Data Printing

The PRINT key is used to initiate either an operating data print or a history print if the optional printer is attached to the RS-232 port in the RCC. When the print key is pressed, the following message will appear.

```
PRESS OPER DATA OR
HISTORY KEY TO PRINT
```

When the OPER DATA key is pressed after the PRINT key, an operating data printout is initiated and the following message will be displayed for a few seconds.

```
PRINTING
OPERATING DATA
```

When the HISTORY key is pressed after the PRINT key, a history printout is initiated and the following message will be displayed for a few seconds.

```
PRINTING
HISTORY DATA
```

If the PRINT key is pressed while a print is currently being performed, the following message is displayed for a few seconds and then unit status is displayed.

```
PRINTER
CURRENTLY ACTIVE
```

Sample Printout:

```
      YORK INTERNATIONAL CORPORATION
        MILLENNIUM LIQUID CHILLER

           UNIT STATUS
          2:04PM 18 JUN 98

      SYS 1      NO COOLING LOAD
      SYS 2   COMPRESSORS RUNNING 2

                    OPTIONS
      CHILLED LIQUID       WATER
      AMBIENT CONTROL     STANDARD
      LOCAL/REMOTE MODE     REMOTE
      CONTROL MODE   LEAVING LIQUID
      LEAD/LAG CONTROL    AUTOMATIC
      FAN CONTROL   AMB & DSCH PRESS

                   UNIT DATA
      RETURN LIQUID TEMP   58.2 DEGF
      LEAVING LIQUID TEMP  53.0 DEGF
      COOLING RANGE 42.0 +/- 2.0 DEGF
      AMBIENT AIR TEMP    74.8 DEGF
      LEAD SYSTEM         SYS 2
      EVAPORATOR PUMP        ON
      EVAPORATOR HEATER      OFF
      UNIT SOFTWARE VER  C.MMC.01.00
      RCC SOFTWARE VER   C.MMC.02.00

                SYSTEM 1 DATA
      COMPRESSORS STATUS      OFF
      RUN TIME   0- 0- 0- 0 D-H-M-S
      SUCTION PRESSURE     66 PSIG
      DISCHARGE PRESSURE   219 PSIG
      LIQUID LINE SOLENOID     OFF
      HOT GAS BYPASS VALVE     OFF
      CONDENSER FAN STAGES     OFF

                SYSTEM 2 DATA
      COMPRESSORS STATUS       2
      RUN TIME   0- 0- 1-46 D-H-M-S
      SUCTION PRESSURE     51 PSIG
      DISCHARGE PRESSURE   157 PSIG
      LIQUID LINE SOLENOID     ON
      CONDENSER FAN STAGES      3

                DAILY SCHEDULE
      S M T W T F S  *=HOLIDAY
      MON START=00:00AM  STOP=00:00AM
      TUE START=00:00AM  STOP=00:00AM
      WED START=00:00AM  STOP=00:00AM
      THU START=00:00AM  STOP=00:00AM
      FRI START=00:00AM  STOP=00:00AM
      SAT START=00:00AM  STOP=00:00AM
      HOL START=00:00AM  STOP=00:00AM
```

OPTIONAL PRINTER INSTALLATION

The optional printer combined with the RCC option allows the operator to obtain a remote printout through the RCC device. The printer to RCC distance should be limited to 25 ft.

YORK recommends the field tested WEIGH-TRONIX model 1220 printer (or former IMP 24). This is a compact low cost printer that is ideal for service work and data logging.

The WEIGH-TRONIX printer can be obtained by contacting WEIGH-TRONIX for purchase information at:

WEIGH-TRONIX
2320 Airport Blvd.
Santa Rosa, CA 95402
Phone: 1-800-982-6622 or 1-707-527-5555
(International Orders Only)

The part number for the printer that is packaged specifically for YORK is P/N 950915576. The cable to connect the printer can either be locally assembled from the parts listed, or ordered directly from WEIGH-TRONIX under part number 287-040018.

PARTS

The following parts are required:

1. WEIGH - TRONIX model 1220 printer.
2. 2.25" (5.7cm) wide desk top calculator paper.
3. 25 ft. (7.62m) maximum length of Twisted Pair Shielded Cable (minimum 3 conductor), #18 AWG stranded, 300V minimum insulation.
4. One 25 pin Cannon connector and shell.
   Connector: Cannon P/N DB-25P or equivalent.
   Shell: Cannon P/N DB-C2-J9.

Assembly and Wiring

All components should be assembled and wired as shown in Figure 1. Strip the outside insulation back several inches and individual wires about 3/8" (9.5 mm) to connect the cable at the Microboard. Do not connect the shield at the printer-end of the cable.

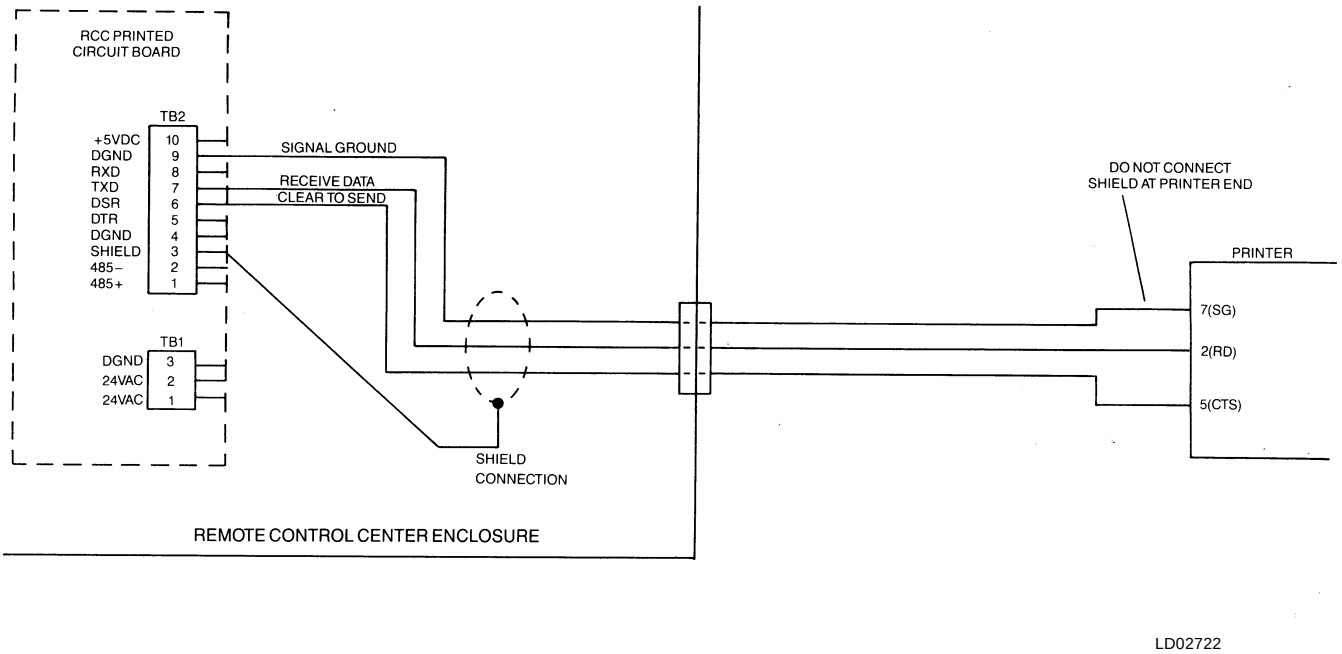


FIG. 1 – PRINTER TO MICROBOARD ELECTRICAL CONNECTIONS

PROGRAMMABLE VALUES

Cooling Setpoints
Cooling setpoints and ranges can be programmed by pressing the COOLING SETPOINTS key. For chillers, the cooling mode will be displayed for a few seconds and then the setpoint entry screen will be displayed. Depending on whether the unit is a chiller or condensing unit will determine the cooling modes displayed (leaving or return chilled liquid, discharge air temperature, or suction pressure control). Refer to the chiller or condensing unit Installation, Operation, and Maintenance manual for a detailed explanation of these functions.

The table below contains the allowable ranges for the cooling setpoints and control ranges. Note that the English units are exact values while the Metric units are approximate.

If the chiller is programmed for REMOTE control, the following setpoints can be changed by pressing the COOLING SETPOINTS key. The values can be changed by using the Up Arrow and Down Arrow keys and then entering the new setpoint by pressing the ENTER key. If the chiller control panel is programmed for LOCAL control, the setpoints cannot be changed from the RCC and an attempt to do so will result in the following message:

```
FUNCTION NOT ALLOWED
UNDER CONDITIONS
```

Following are the messages for the programming of the setpoint and range for leaving and return chilled liquid control respectively. These are for chillers only.

```
SETPOINT = XXX.X°F
RANGE    = +/- X.X°F
```

```
SETPOINT = XXX.X°F
RANGE    = +XX.X°F
```

Following are the messages for the programming of the setpoint and range for discharge air temp and suction pressure control respectively. These are for condensing units only.

```
SETPOINT = XXX.X°F
RANGE    = +/- X.X°F
```

```
SYS 1SP= XXXX PSIG
RANGE = +/-XXX PSIG
```

```
SYS 2SP= XXXX PSIG
RANGE = +/-XXX PSIG
```

TABLE 1 – ALLOWABLE RANGES FOR COOLING SETPOINTS AND CONTROL RANGES

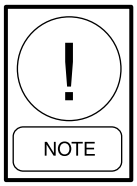
SETPOINT KEY	MODE	LOW LIMIT	HIGH LIMIT	DEFAULT
LEAVING CHILLED LIQUID SETPOINT	WATER COOLING	40.0°F	**70.0°F	40.0°F
		4.4°C	21.1°C	6.7°C
	GLYCOL COOLING	10.0°F	70.0°F	44.0°F
		-12.2°C	21.1°C	6.7°C
LEAVING CHILLED LIQUID CONTROL RANGE	—	1.5°F	2.5°F	2.0°F
		0.8°C	1.4°C	1.1°C
RETURN CHILLED LIQUID SETPOINT	WATER COOLING	40.0°F	70.0°F	44.0°F
		4.4°C	21.1°C	6.7°C
	GLYCOL COOLING	10.0°F	70.0°F	44.0°F
		-12.2°C	21.1°C	6.7°C
RETURN CHILLED LIQUID CONTROL RANGE	—	4.0°F	20.0°F	10.0°F
		2.2°C	11.1°C	5.6°C
DISCHARGE AIR TEMP SETPOINT	—	45.0°F	70.0°F	55.0°F
		7.2°C	21.1°C	12.7°C
DISCHARGE AIR TEMP CONTROL RANGE	—	3.0°F	10.0°F	5.0°F
		1.7°C	5.6°C	2.8°C
SUCTION PRESSURE SETPOINTS	—	60 PSIG	90 PSIG	70 PSIG
		4.14 BARS	6.21 BARS	4.83 BARS
SUCTION PRESSURE CONTROL RANGES	—	1.5 PSIG	10 BARS	2.5 BARS
		0.10 BARS	0.69 BARS	0.17 BARS

Daily Schedule / Holiday

The Daily Schedule can be programmed to control the start and stop time of the chiller. To set the schedule, proceed as follows: press the SET SCHEDULE / HOLIDAY key. The display will show the following message:

```
MON  START  =  06:00  AM
       STOP  =  10:00  PM
```

The line under the 0 is the cursor. If the start time is wrong, it may changed by using the UP and DOWN arrow keys. Once the correct hour is shown, press the ENTER key. The cursor will then move to the minute selection. Once the correct minute is shown, press the ENTER key. The cursor will then move to the AM/PM selection. This value may be chosen by the UP and DOWN arrow keys and entered by pressing ENTER. This process may be followed until the hour, minutes, and meridian of both the START and STOP points are set. Once a schedule is entered, the schedule for the next day will appear. The start and stop time of each day may beprogrammed differently. If you want to view the schedule without making a change, simply press the SET SCHEDULE / HOLIDAY key until the day you wish to view appears.



If the time is ever changed for Monday, all the other days will change to the new Monday schedule. This means if the Monday times are not applicable for the whole week then the exceptional days would need to be reprogrammed to the desired schedule.

After SUN (Sunday) schedule appears on the display a subsequent press of the SET SCHEDULE / HOLIDAY key will display the Holiday schedule. This is a two part display. The first reads:

```
HOL  START  =  06:00  AM
       STOP  =  10:00  PM
```

The times may be set using the same procedure as described above for the days of the week. Pressing the SET SCHEDULE / HOLIDAY key a second time, the display will read:

```
S_  M  T  W  T  F  S
HOLIDAY  NOTED  BY  *
```

The line below the empty space next to the S is the cursor and will move to the next empty space when the ENTER/ADV key is pressed. To set the Holiday, the cursor is moved to the space following the day of the week of the holiday and the UP arrow key is pressed. An * will appear in the space signifying that day as a holiday. The * can be removed by pressing the DOWN arrow key.

The Holiday schedule must be programmed weekly – once the holiday schedule runs, it will revert to the normal daily schedule.

Load Limiting

The LOAD LIMIT key is used to load limit the unit. This function modifies Load Limit setpoint found on the unit. The message displayed when the LOAD LIMIT key is pressed follows.

```
LOAD  LIMIT  STAGE
          X
```

Load Limiting can be programmed from 0 to 2 using the arrow keys. The unit will operate on either this load limit setpoint or its local value, whichever is lower.

Load Limit 0 = no load limit
Load Limit 1 = 50% load limit - 2/4 compressor units.
Load Limit 1 = 66% load limit - 3/6 compressor units.
Load Limit 2 = 33 % - 3/6 compressor units only.

Refer to chiller unit manual for a detailed explanation on Load Limiting.

Remote Unit Run

• ON Key

When the ON key is pressed, the unit will be given a remote run permissive from the RCC. Assuming all other run permissives are met, the unit will be allowed to run. The following message will be displayed for a few seconds after the ON key is pressed. The chiller must be programmed for Remote mode to use this function.

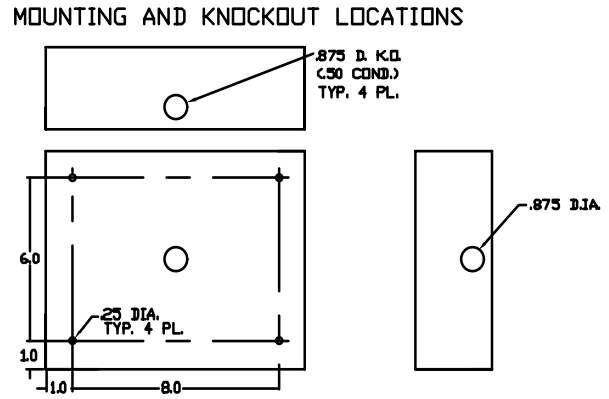
```
REMOTE  UNIT  RUN
     IS  ON
```

When the OFF key is pressed, the unit remote run permissive from the RCC will be turned off. The unit will not be allowed to run in this state. The following message will be displayed for a few seconds after the OFF key is pressed.

```
REMOTE  UNIT  RUN
     IS  OFF
```

INSTALLATION INSTRUCTIONS:

1. CHOOSE THE LOCATION FOR THE REMOTE CONTROL CENTER AND ATTACH IT SECURELY.
2. INTERCONNECT THE RS485 PORT BETWEEN THE MICROPANEL TB1 AND THE REMOTE CONTROL CENTER TB2 AS SHOWN.
3. IF PRINTER (OPTIONAL) IS USED, CONNECT AS SHOWN.
4. CONNECT A 24VAC POWER SOURCE TO TB1 AS SHOWN. IF OPTIONAL WALL MOUNT TRANSFORMER IS NOT USED, SUPPLY MUST BE WITHIN 20VAC AND 30VAC AT 0.9A MINIMUM.
5. ALL WIRING SHALL COMPLY WITH N.E.C. CLASS 2 REQUIREMENTS AND APPLICABLE LOCAL CODES.
6. INSTALL THE LAN TRANSIENT PROTECTION (LTP) MODULE (INCLUDED WITH 371-02485 REMOTE CONTROL BOX) ON THE 031-01314 OR 031-01793 OR 031-02050 MICRO BOARD AND RCC AS SHOWN AND DESCRIBED BELOW.
   - STEP 1 - CAREFULLY LOOSEN EACH TERMINAL OF J1 ON LTP MODULE.
   - STEP 2 - CONNECT WIRES PER DETAIL A.
   - STEP 3 - CAREFULLY TIGHTEN ALL SCREWS ON THE MODULE TERMINAL STRIP J1.
   - STEP 4 - ORIENT THE MODULE AS SHOWN AND INSERT ALL 4 P1 MODULE PINS INTO TB1 AS SHOWN.
   - STEP 5 - CAREFULLY TIGHTEN EACH TERMINAL OF TB1. DOUBLE CHECK ALL WIRING TO THE MODULE BEFORE CLOSING UP.



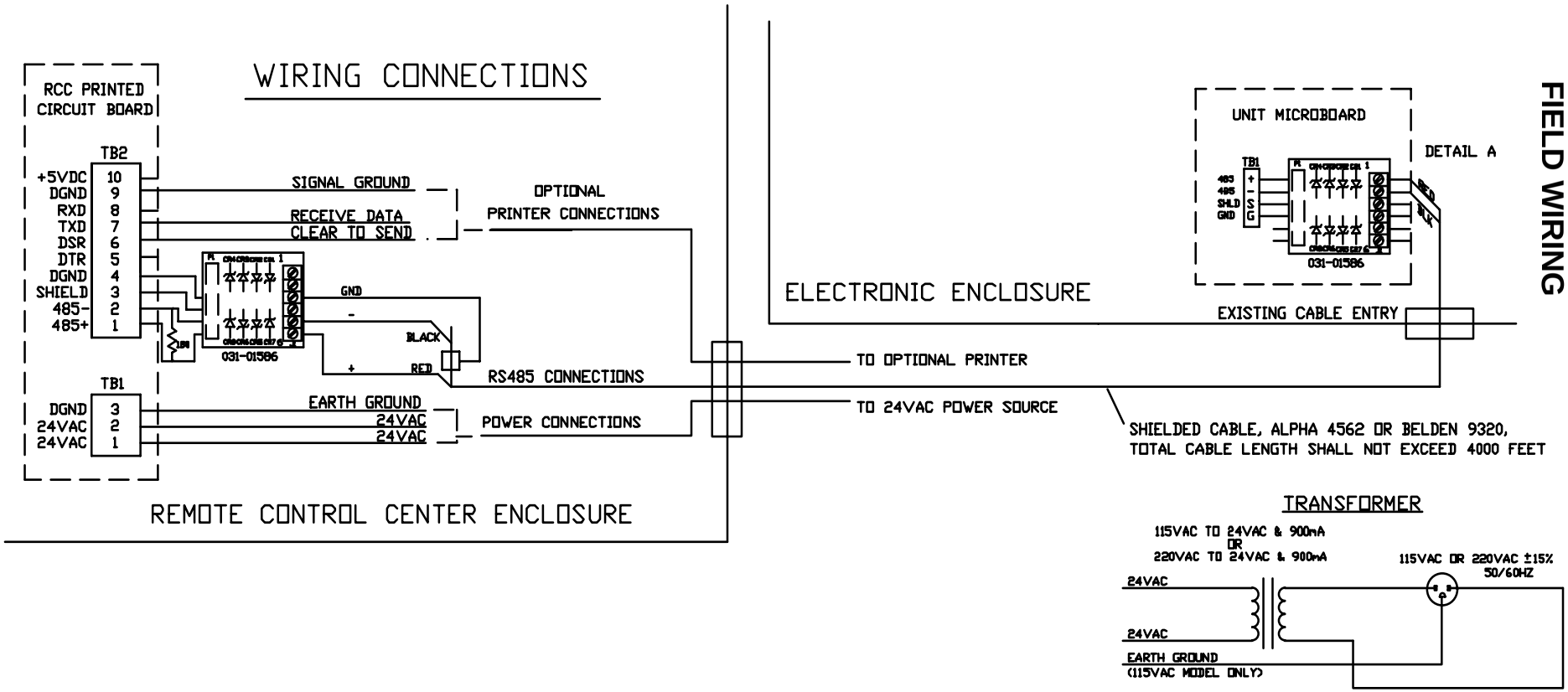
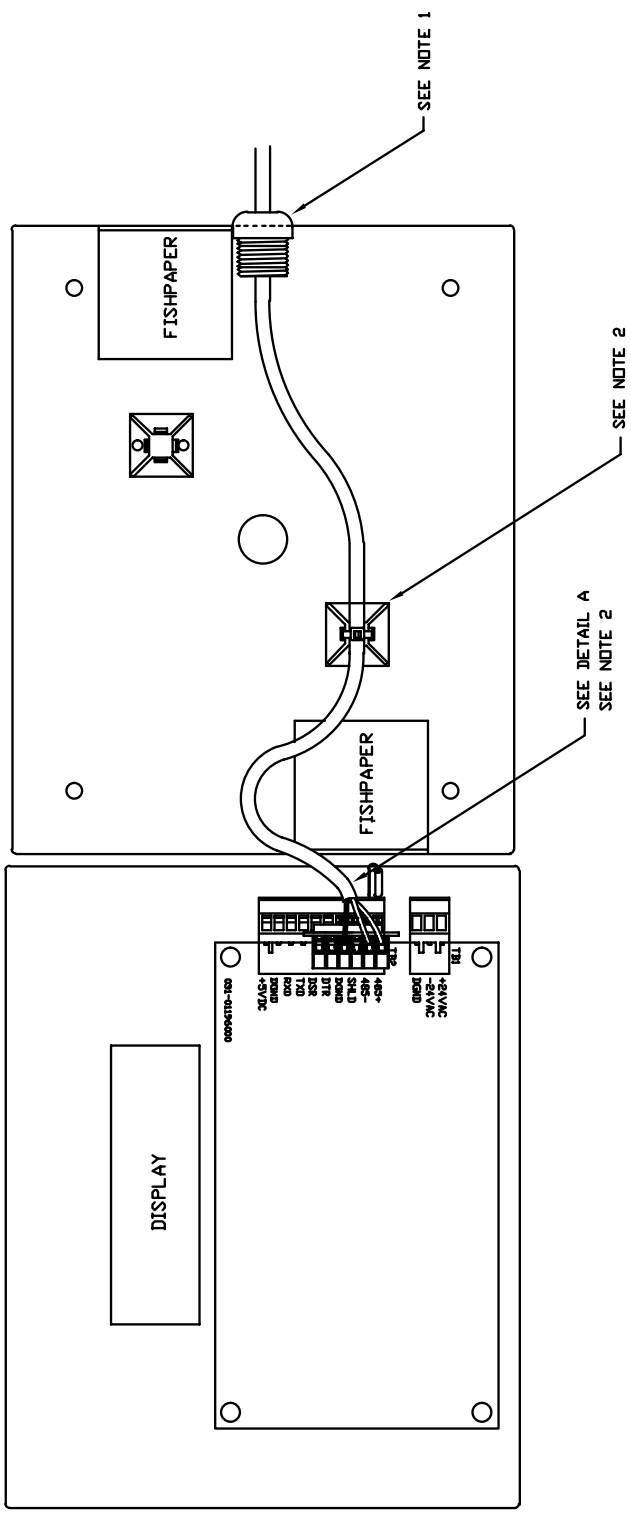


FIG. 2 – FIELD WIRING

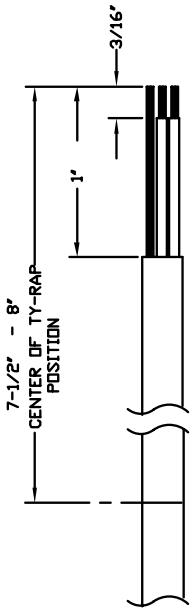
LD05175

FIELD WIRING



NOTES:

1. INSERT LAN CABLE THRU HEYCO CABLE FITTING ON REMOTE BASE LEAVING 16 INCHES OF CABLE INSIDE OF BASE. TIGHTEN HEYCO FITTING.
2. CABLE END TO LTP MODULE BOARD MUST BE PRE-PARED PER DETAIL A. SECURE CABLE WITH TIE WRAP PROVIDED (2 SPARES INCLUDED) TO MOUNTING BLOCK AFFIXED TO BOTTOM OF BASE AT POSITION SHOWN IN DETAIL A.



DETAIL A

LD05175

FIG. 3 – FIELD WIRING

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