Chiller Data Logger Installation Instructions

Function

The Chiller Data Logger is a device that logs operating condition data and alarms and alerts from up to eight chillers on a Carrier Comfort Network (CCN) and automatically prints the data to a serial printer or a parallel printer equipped with a converter. The Data Logger can be used with Product Integrated Control (PIC)-equipped chillers such as the following:

- 19 XR/XRT, 19XL/XLT, and 17 and 19EX centrifugal chillers
- 23XL screw chillers
- 30GX/HX global screw chillers
- 16JT absorption chillers

The Data Logger polls the chillers at a user-configurable time interval of 15 minutes to 24 hours. You can also retrieve chiller data on demand using the "Report Now" feature. The Data Logger will optionally log and print alarm and return to normal messages from its configured chillers. It can optionally be used as a CCN network alarm acknowledger if it is installed on the primary CCN bus (bus 0).

Note: The Chiller Data Logger ignores re-alarms.

Installation

The Chiller Data Logger module can be installed in a NEMA Type 1 enclosure or mounted by itself on a wall. However, the Chiller Data Logger must be installed on the same bus as the chillers.

Note: To comply with the European Union (EU) EMC directive, you must install this unit in a grounded metal enclosure.

To Install in a NEMA Type 1 Enclosure

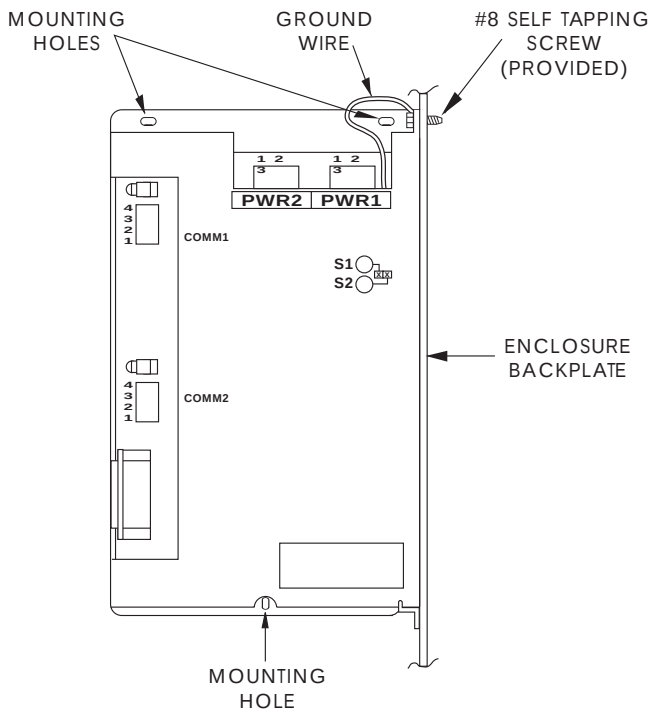
1. Mount the module in the enclosure. Leave a 1/8" space between the module and any adjacent module(s) to allow for ventilation.

   Note: If using a FID enclosure, hook the bottom slot on the module onto the backplate's mounting rail

2. Finish mounting the module by securing the top and the green ground wire to the backplate with the 8-32 slotted hex head self-tapping screw provided.

   Figure 1 on the next page, Enclosure Mounting, illustrates this method of mounting the module.

Figure 1
Enclosure Mounting



To Install on a Wall or in an Approved Enclosure

1. After test positioning the module and marking the positions of its three mounting screws, drill mounting holes at the selected location. Be sure that there is ample clear space to the left of the location to allow access to the module's connectors.

2. Attach the module to the wall or enclosure, using three appropriate #8 screws (not provided).

3. Connect the green wire to building ground.

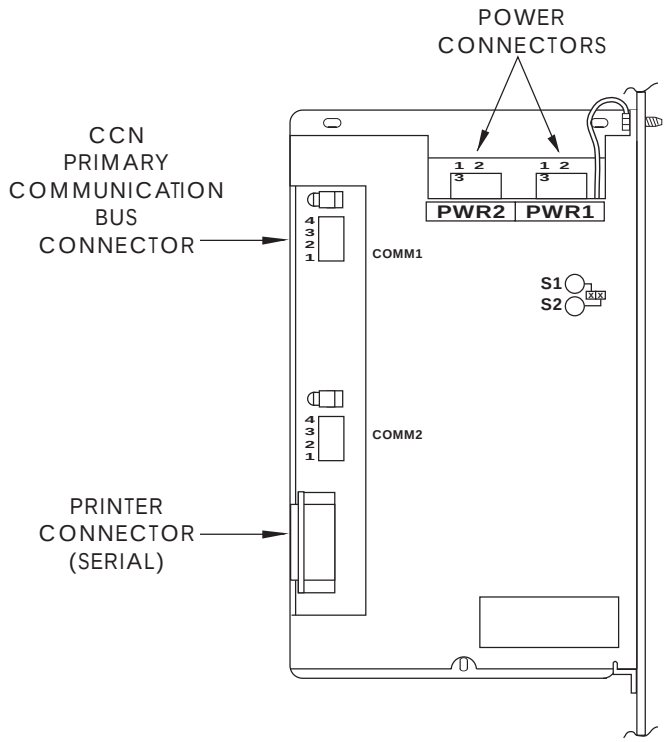
Connectors

Figure 2, Connectors, indicates the connectors that will be used to provide power to the Chiller Data Logger, and to connect it to the CCN and the alarm printer. Consult the *CCN Contractors' Manual* (808-710) for information concerning the wiring that must be provided for that purpose.

The Data Logger's primary and secondary ports, PWR1 and PWR2, should have separate power supplies. A separate and isolated power supply is recommended for PWR2, to isolate the COMM2 port from the CCN.

Note: The Chiller Data Logger can be connected to either the primary or a secondary CCN Communication Bus. Use the Service Tool to set the address and baud rates of the COMM1 and COMM2 connectors, if necessary. The default baud rate for both connectors is 9600. The default address is 0, 135.

Figure 2
Connectors



Printer Interface

The Chiller Data Logger can interface to the following printer types.

- Serial printer:
  Epson LX-300

- Parallel printer and one of the following serial-to-parallel converters:
  Telebyte Model 109
  Black Box Model PI115A

The three recommended connection methods are described below.

Chiller Data Logger with Serial Printer (Epson LX-300)

This printer is available from a local Epson distributer or from the following:

Global Computer Supplies
11 Harbor Park Drive
Port Washington, NY 11050
1-800-845-6225 or (516) 625-6200

Printer Settings

Interface:	Serial
Bit Rate:	9600 baud
Parity	None
Data Length:	8 bits

Interface Cable
The interface cable requires male 25-pin D-shell connectors on both ends. Required pinouts are shown below.

Chiller Data Logger				Epson LX-300	
Signal	Mnemonic	Pin	Pin	Mnemonic	Signal
Transmit Data	TXD	2	2	TXD	Transmit Data
Receive Data	RXD	3	3	RXD	Receive Data
Data Set Ready	DSR	6	6		Not Used
Data Terminal Ready	DTR	20	20	DTR	Data Terminal
Signal Ground	SG	7	7	SG	Signal Ground

Note : The 6/20 swap allows the cable to work regardless of connection (bidirectional).

Chiller Data Logger with Parallel Printer (Telebyte Model 109 Converter)
This converter is recommended because of its low price and large buffer. It can be ordered from the following:

Telebyte Technology, Inc.
270 Pulaski Road
Greenlawn, NY 11740
1-800-835-3298 or (516) 423-3232

DIP Switch Settings

Function	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
Baud rate (9600)	up	down	up					
Character length (8)				up				
Parity (none)					down	down		
Handshaking (XON/XOFF)							down	
Direction (S→P)								down

Interface Cable
The serial cable requires a male 25 pin D-shell connector at the Chiller Data Logger and a female 25 pin D-shell connector at the converter. A Centronics type cable is required between the converter's parallel port and the parallel printer. This cable is usually supplied with the printer.

Chiller Data Logger			Telebyte Model 109		
Signal	Mnemonic	Pin	Pin	Mnemonic	Signal
Transmit Data	TXD	2	2	TXD	Transmit Data
Receive Data	RXD	3	3	RXD	Receive Data
Data Set Ready	DSR	6	20	DTR	Data Terminal
Signal Ground	SG	7	7	SG	Signal Ground

Chiller Data Logger with Parallel Printer (Black Box Model PI115A Converter)
This converter can be ordered from the following:

Black Box Corporation
1000 Park Drive
Lawrence, PA 15055
(412) 746-5500

Switch Settings
DCE/DTE Switch: DTE

DIP Switch Function	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
Baud rate (9600)	down	up	up					
8 Data Bits, No Parity				down	down			
Self test disabled						up		
Direction (S→P)							down	
Reserved for manufacturer								up

Interface Cable
The serial cable requires male 25 pin D-shell connectors on both ends. A Centronics type cable is required between the converter's parallel port and the parallel printer. This cable is usually supplied with the printer.

Chiller Data Logger			Black Box PI115A		
Signal	Mnemonic	Pin	Pin	Mnemonic	Signal
Transmit Data	TXD	2	2	TXD	Transmit Data
Receive Data	RXD	3	3	RXD	Receive Data
Data Set Ready	DSR	6	6		Not Used
Data Terminal Ready	DTR	20	20	DTR	Data Terminal
Signal Ground	SG	7	7	SG	Signal Ground

Note : The 6/20 swap allows the cable to work regardless of connection (bidirectional).

Powering Up

When power is applied to the Chiller Data Logger, it transmits an initialization string to position the printer platen and printhead. If the printer is not on and on-line before you power the Chiller Data Logger, it will initialize when it is turned on.

Required Configuration

Use ComfortWORKS, the Building Supervisor, or the Network Service Tool to configure the following decisions in the Chiller Data Logger Configuration Table:

Data Reported In...

The value that you specify in this decision tells the Chiller Data Logger the format of values that it will transmit to the printer. If this decision is set to *US*, units will be transmitted in customary US (for example, degrees F). If this decision is set to *Metric*, units and values will be transmitted in metric.

Allowable Entries	US Metric
Default Value	US

Print Reports

This decision enables and disables report printing. Report Time Interval, described below, is initialized when you set this decision to *Yes* after chiller addresses are configured.

Allowable Entries	Yes = Report printing is enabled No = Report printing is disabled
Default Value	No

Single Report per Page

This decision allows you to print data for only one chiller on each sheet of paper, or to print data for all chillers sequentially. Printing a single report per page is useful when data is filed separately for each chiller.

Allowable Entries	Yes = Print a single report per page No = Print reports sequentially
Default Value	No

Report Time Interval

This decision specifies the amount of time (in hours:minutes) between chiller data reports. The minimum time is 00:15 (15 minutes). If a value less than that is entered, the Data Logger will ignore it and print every 15 minutes.

Note: The report timer does not reset when you change the configured Report Time Interval. To reset the timer, you must set Print Reports to *No*, then to *Yes*, or allow the currently configured interval to elapse.

Allowable Entries 00:00–24:00

Default Value 01:00

Print Alarms
This decision enables and disables printing of alarm, alert, and return to normal messages from configured chillers.

Allowable Entries Yes = Alarm printing is enabled
No = Alarm printing is disabled

Default Value No

Acknowledge Alarms
You should set this decision to *Yes* if the Chiller Data Logger will be the network alarm acknowledger. The Data Logger can be the alarm acknowledger only if it is installed on the primary CCN Communication Bus (bus 0). If another CCN device will be the alarm acknowledger, this decision should be set to *No*.

The Data Logger's alarm acknowledgment function is automatically disabled (this decision is ignored) if it is installed on a secondary CCN Communication Bus.

Allowable Entries Yes = Chiller Data Logger is alarm acknowledger
No = Chiller Data Logger is not alarm acknowledger

Default Value No

Chiller 1 Address–Chiller 8 Address
In this decision, enter the element numbers of up to eight chillers from which the data logger will print report data or alarms.

Note: The Chiller Data Logger must be installed on the same CCN Communication Bus as its chillers.

Allowable Entries 0-239

Default Value 0

MaintenanceTable

The Chiller Data Logger Maintenence Table provides the following decisions for monitoring purposes.

Print Reports Now
When forced, this decision starts printing of reports for all configured chillers. When printing is complete, the force is cleared automatically.

Valid Display No/Yes

Report Time Remaining
This decision indicates the amount of time remaining until the next report is printed.

Valid Display 00:00–24:00

Alarm Printing Enabled
This decision indicates whether the Chiller Data Logger is configured to print alarms.

Valid Display No/Yes

Alarm Buffer Full
This decision indicates that 30 alarms are held in the alarm buffer because the Data Logger cannot print for some reason (printer is off line, out of paper, not powered).

Valid Display No/Yes

Related Documentation

For more information about this product, refer to the following:

Chiller Data Logger Product Data Sheet (808-972)