

POWERLOGIC® Ethernet Communications Card Installation



- Merlin Gerin
- Modicon
- Square D
- Telemecanique

NOTICE

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

CAUTION

CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in** property damage.

NOTE: Provides additional information to clarify or simplify a procedure.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. This document is not intended as an instruction manual for untrained persons. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this manual.

Class A FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designated to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CONTENTS

CONTENTS I

LIST OF FIGURES III

LIST OF TABLES IV

CHAPTER 1—INTRODUCTION 1

CHAPTER CONTENTS 1

OVERVIEW 1

WHAT IS AN ETHERNET COMMUNICATION CARD? 2

CHAPTER 2—SAFETY PRECAUTIONS 3

CHAPTER 3—GETTING STARTED 5

CHAPTER CONTENTS 5

OVERVIEW 5

DEFAULT SETTINGS 6

CHAPTER 4—INSTALLATION 7

CHAPTER CONTENTS 7

DESCRIPTION 8

INSTALLING THE ECC 9

WIRING 12

 Control Power 12

 Communications 12

 RS-485 Serial Port 12

 RS-485 LEDs 13

 Biasing 13

 Termination 14

 Daisy Chain Maximum Distances 14

 Ethernet Ports 15

 10/100BaseTX RJ-45 Twisted Pair 16

 100BaseFX Fiber-Optic 16

 Ethernet LEDs 16

RESTORING POWER 16

CHAPTER CONTENTS 17

SETTING UP THE ECC VIA THE SERIES 4000 CIRCUIT MONITOR
DISPLAY 17

 Initial Local Setup 17

CHAPTER 5—SETUP 17

SETUP VIA A NETWORK OR THE INTERNET 19

 Log Into the ECC 19

APPENDIX A—MAINTENANCE AND TROUBLESHOOTING 21

MAINTENANCE 21

TROUBLESHOOTING 21

APPENDIX B—SPECIFICATIONS 23

INDEX 25

LIST OF FIGURES

Figure 1-1: Ethernet Communications Card 1

Figure 1-2: System architecture example showing Series 4000 Circuit Monitors with Ethernet Communications Cards installed 2

Figure 4-1: Identifying ECC components 8

Figure 4-2: Circuit monitor option slot locations 10

Figure 4-3: Removing the dust cover on the circuit monitor 10

Figure 4-4: Installing the ECC into the circuit monitor 11

Figure 4-5: Daisy Chain connected to ECC RS-485 port 12

Figure 4-6: Communications wiring for 4-wire cable. 13

Figure 4-7: Communications wiring for 2-wire cable. 13

Figure 4-8: Series 4000 Circuit Monitor with ECC in typical network application 15

Figure 5-1: IP address entered in URL address field 19

Figure 5-2: ECC Log In page 19

Figure B-1: ECC dimensions. 24

LIST OF TABLES

Table 3-1:	ECC Parameters and Default Values	6
Table 4-1:	Ethernet Communication Card Components	8
Table 4-2:	4-Wire Daisy Chain Maximum Distances	14
Table 4-3:	2-Wire Daisy Chain Maximum Distances	14
Table 5-1:	Ethernet Communication Setup Parameters	18
Table B-1:	Specifications	23

CHAPTER 1—INTRODUCTION

CHAPTER CONTENTS

CHAPTER CONTENTS	1
OVERVIEW	1
WHAT IS AN ETHERNET COMMUNICATION CARD?	2

OVERVIEW

This document contains installation and operation instructions for the POWERLOGIC® Ethernet Communication Card (ECC). Before installing the ECC (shown in Figure 1–1), you should have a general understanding of the POWERLOGIC Power Monitoring and Control System and related products and technology.

For more information about the POWERLOGIC System, refer to the following documents:

- POWERLOGIC System Architecture and Application Guide
- POWERLOGIC System Manager Software 3000 User's Guide
- POWERLOGIC Circuit Monitor Series 4000 Instruction Bulletin



Figure 1–1: Ethernet Communications Card

WHAT IS AN ETHERNET COMMUNICATION CARD?

The POWERLOGIC Ethernet Communication Card (ECC) is an optional add-on card for the Series 4000 Circuit Monitor. The ECC inserts into an option slot in the circuit monitor. The primary function of the ECC is to provide a fast, direct Ethernet communication connection for the Series 4000 Circuit Monitor and allow Ethernet gateway functionality to a wide variety of POWERLOGIC-compatible MODBUS, JBUS, and/or SY/MAX devices. A typical application example is shown in Figure 1–2.

The ECC also allows you to access custom HTML pages (stored in the circuit monitor) via a standard web browser. The pages are best viewed using Internet Explorer version 5.0 or higher. These HTML pages may display information from the host circuit monitor and/or daisy-chained devices.

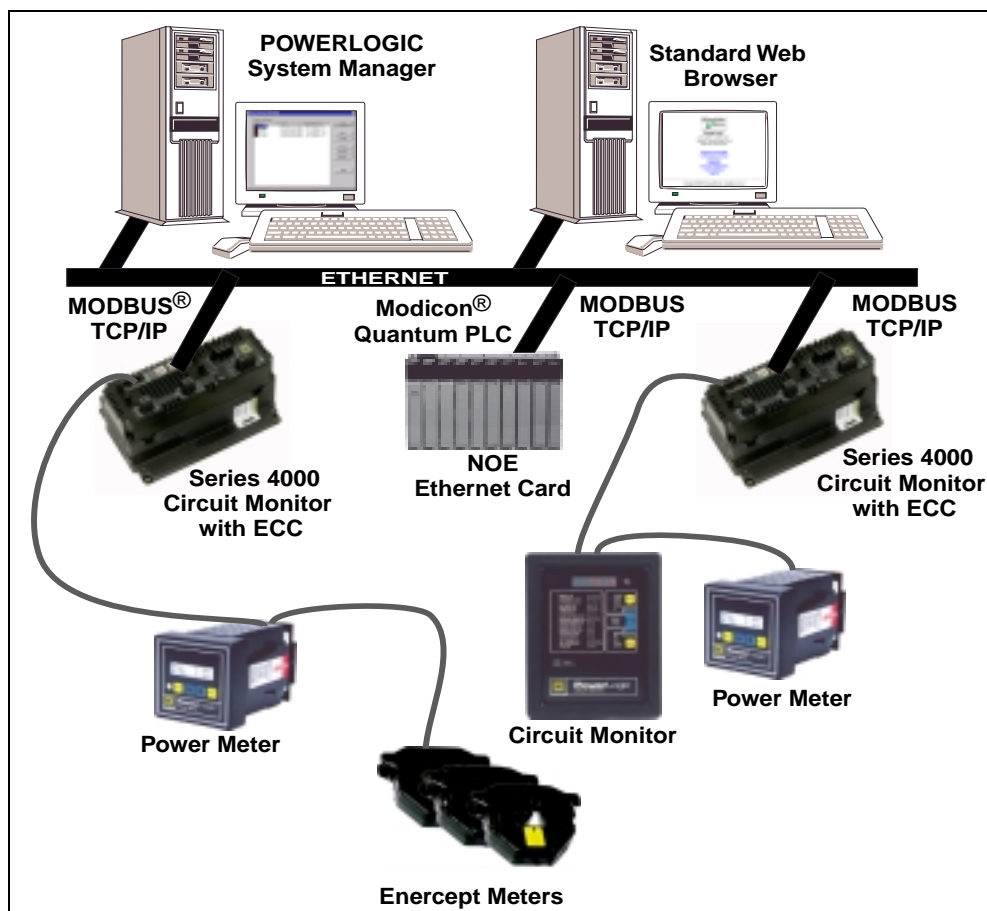


Figure 1–2: System architecture example showing Series 4000 Circuit Monitors with Ethernet Communications Cards installed

CHAPTER 2—SAFETY PRECAUTIONS

This chapter contains important safety precautions that must be followed before attempting to install, service, or maintain electrical equipment. Carefully read and follow the safety precautions outlined below.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, BURN, OR EXPLOSION

- Only qualified workers should install this equipment. Such work should be performed only after reading this entire set of instructions.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Turn off all power supplying the Series 4000 Circuit Monitor and the equipment in which it is installed before installing and wiring the ECC. Be aware that the circuit monitor may be connected to a separate power source derived from the equipment in which it is installed.
- Also turn off all power supplying any option card already installed in the Series 4000 Circuit Monitor before installing and wiring the ECC.
- Beware of potential hazards, wear personal protective equipment, and carefully inspect the work area for tools and objects that may have been left inside the equipment.
- The successful operation of this equipment depends upon proper handling, installation, and operation. Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.

Failure to observe these instructions will result in death or serious injury.

CHAPTER 3—GETTING STARTED

CHAPTER CONTENTS

CHAPTER CONTENTS	5
OVERVIEW	5
DEFAULT SETTINGS	6

OVERVIEW

With a few simple set up steps, you can use your ECC “right out of the box” to fully monitor the Series 4000 Circuit Monitor into which you will install the ECC. To do so, follow steps 1 through 8 below.

To install and set up the ECC for full functionality, complete the remaining steps.

1. The “host” circuit monitor is the Series 4000 Circuit Monitor into which the ECC will be installed. Turn off all power supplying the host circuit monitor and the equipment in which it is installed (see “Chapter 2—Safety Precautions” on page 3 and the safety precautions listed under “Installing The ECC” on page 9). Be aware that the circuit monitor may be connected to a separate power source derived from the equipment in which it is installed.
2. Install the ECC into the circuit monitor (for details, see “Installing The ECC” on page 9).
3. Wire the ECC (see “Wiring” on page 12).
4. If the host circuit monitor is mounted in an enclosure, make sure to remove all tools from the enclosure. Then install all covers and close all doors to the enclosure.
5. Restore power to the circuit monitor and any other equipment you de-energized to install and wire the ECC (see “Restoring Power” on page 16).
6. Set up the following Ethernet parameters from the Series 4000 Circuit Monitor display (see “Setting Up The ECC Via The Series 4000 Circuit Monitor Display” on page 17):
 - IP Address
 - Subnet Mask
 - Router Address
 - Ethernet Port Type

NOTE: To set up the ECC via the circuit monitor, the circuit monitor must be running firmware version 10.30 or higher.
7. Launch a standard web browser.
8. Type the IP address (for example, 163.196.212.89) into the URL field.
9. Log in with the administrator password (the default is “admin”) and you are ready to configure or view the Series 4000 Circuit Monitor HTML pages.

Refer to the ECC reference guide (30230-304-204/A1). To fully set up the ECC and use its monitoring, password administration, and diagnostic features, follow the remaining steps:

1. Modify Ethernet parameters.
2. Set up the serial communication port.
3. Identify the RS-485 daisy-chained devices .
4. Configure user passwords.
5. Perform advanced setup if necessary.

DEFAULT SETTINGS

Table 3–1 shows available values for ECC parameters and default values for those parameters.

Table 3–1: ECC Parameters and Default Values

Parameter	Value Range	Selection Description	Default
Password Administration 1. Administrator 2. Users 3. Access Level	1. Up to 8 letters 2. Up to 8 letters 3. None, Read Only, Full	1. Master password account 2. 3 Users' password accounts 3. User's access level for that page	1. admin 2. master, engineer, operator 3. See the reference manual (63230-304-204/A1) for details.
Communications Settings—RS-485 1. Baud Rate 2. Parity 3. Mode	1. 1200, 2400, 4800, 9600, 19200, 38400 2. Even, None 3. 4-Wire, 2-Wire	1. RS-485 Baud Speed 2. Parity 3. 4-wire or 2-wire daisy-chained devices	1. 9600 2. Even 3. 4-Wire
HTML User Timeout	1–255 Minutes	Maximum time allowed for a user to stay idle before the ECC expires that user's access.	10 minutes
Timeout for Circuit Monitor	3 to 10 Seconds	Maximum time ECC will wait for requested information from the CM4000.	3 seconds
Timeout for RS-485 Port	3 to 10 Seconds	Maximum time the ECC will wait for requested information from the RS-485 daisy-chained devices.	5 seconds
Number of Viewable Devices	2 to 64	Number of available device identification slots displayed on the Device List HTML page.	16
Instantaneous Readings Refresh Rate	5 to 300 seconds	Update refresh rate for the ECC to poll information from the CM4000 and put in the instantaneous reading table.	10 seconds

CHAPTER 4—INSTALLATION

CHAPTER CONTENTS

CHAPTER CONTENTS	7
DESCRIPTION	8
INSTALLING THE ECC	9
WIRING	12
Control Power	12
Communications	12
RS-485 Serial Port	12
RS-485 LEDs	13
Biasing	13
Termination	14
Daisy Chain Maximum Distances	14
Ethernet Ports	15
10/100BaseTX RJ-45 Twisted Pair	16
100BaseFX Fiber-Optic	16
Ethernet LEDs	16
RESTORING POWER	16

DESCRIPTION

This section identifies ECC components and provides installation instructions. Figure 4–1 shows the components of the ECC. Table 4–1 identifies those components and explains their functions.

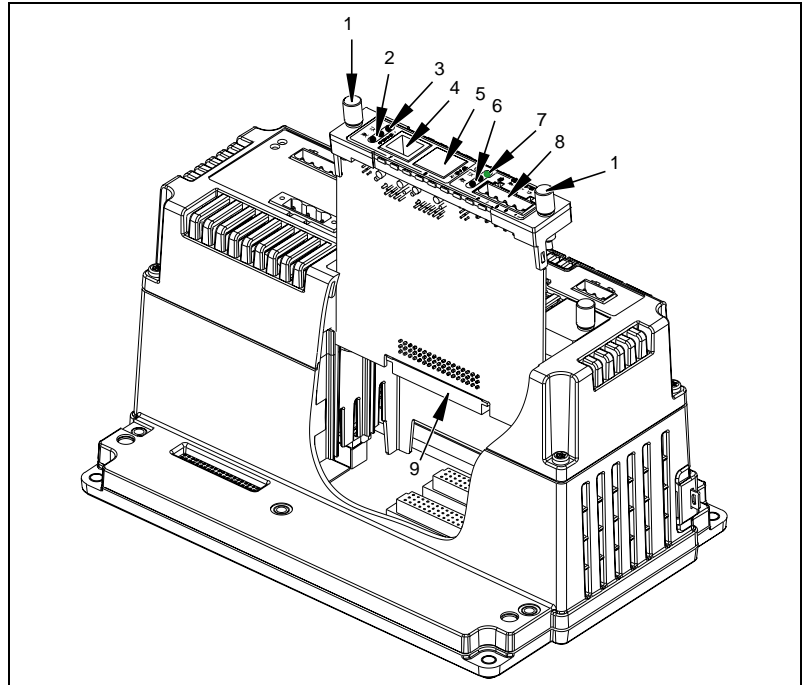


Figure 4–1: Identifying ECC components

Table 4–1: Ethernet Communication Card Components

Ref. No.	Item	Description
1	Retaining Screws	These screws secure the option card to the Series 4000 Circuit Monitor.
2	Ethernet Port LEDs	A yellow LED illuminates when the ECC is receiving data (RX) and a green LED illuminates when data is transmitted (TX).
3	Ethernet Link LED	This LED illuminates yellow steadily when there is a proper Ethernet connection.
4	10/100 BaseT Twisted Pair Port	This port drives a twisted pair cable up to 328 ft. (100 m). This port has a standard RJ-45 connector.
5	100BaseFX Port	The port is a duplex LC connector receptacle and is compatible with 1300 nm wavelength multimode fiber connections. The ECC on-board fiber-optic port allows the CM4000 to communicate with a fiber-optic based Ethernet LAN.
6	RS-485 LEDs	The yellow LED illuminates when the RS-485 port is receiving data (RX); the green LED illuminates when the RS-485 port is transmitting data (TX). Both LEDs flicker intermittently if there is a configuration error.
7	Power LED	This green LED illuminates steadily when power is received from the CM4000.
8	RS-485 Port	Used for communication with daisy-chained devices.
9	ECC/CM4000 Connector	This socket connects the ECC to the host Series 4000 Circuit Monitor.

INSTALLING THE ECC

This section provides information on installing the ECC, including communications wiring.

The ECC is designed as a plug-and play accessory for the CM4000. Follow these instructions to install the ECC into the circuit monitor.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, BURN, OR EXPLOSION

- Turn off all power supplying the circuit monitor and the equipment in which it is installed before working on it. Be aware that the circuit monitor may be connected to a separate power source derived from which the equipment is installed.
- Use a properly rated voltage sensing device to confirm that all power is off.

Failure to follow these instructions will result in death or serious injury.

1. Turn off all power to the circuit monitor and the equipment in which it is installed. To turn off power to the circuit monitor, do this:
 - a. Disconnect the metered voltage either by removing the fuses from the potential transformer (PT secondaries) circuits or by turning off the voltage disconnect switch.
 - b. Short circuit the current transformer (CT) secondaries to remove the metered current.
 - c. Turn off the control power and any power sources to the auxiliary inputs and outputs.
 - d. Turn off power to any option cards already installed in the circuit monitor.
 - e. Always use a properly rated voltage sensing device to confirm that power is off.

CAUTION

ESD-SENSITIVE COMPONENTS

Use an anti-static or grounding strap (customer-supplied) to ground yourself and discharge any static charge before installing the ECC. Static can damage electrostatic discharge-sensitive components in the circuit monitor and its accessories.

Failure to follow this instruction can result in equipment damage.

2. To discharge static, follow the instructions that come with your anti-static or grounding strap.

NOTE: We recommend using an anti-static or grounding strap until you have completed installation of the ECC.

3. On option slot A (Figure 4-2) of the circuit monitor, loosen the two retaining screws and remove the dust cover (Figure 4-3). Retain the dust cover for future use.

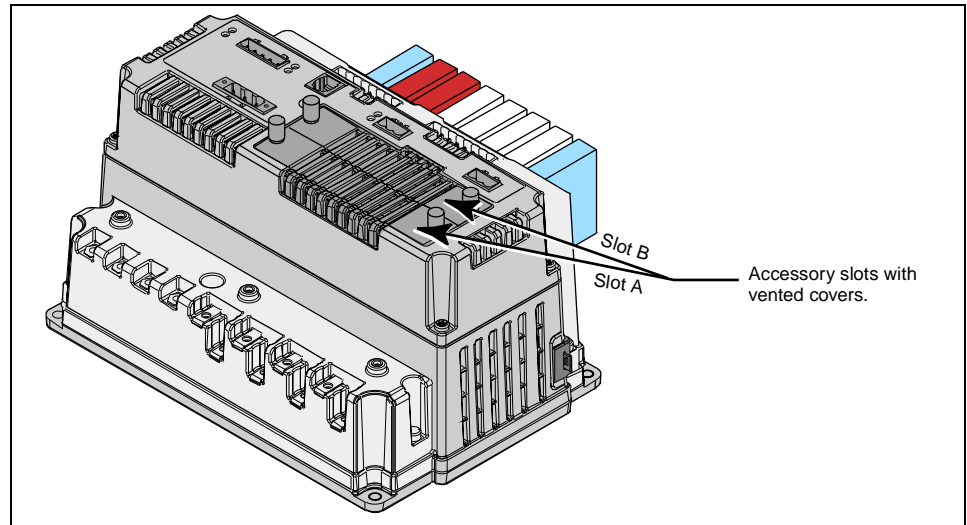


Figure 4-2: Circuit monitor option slot locations

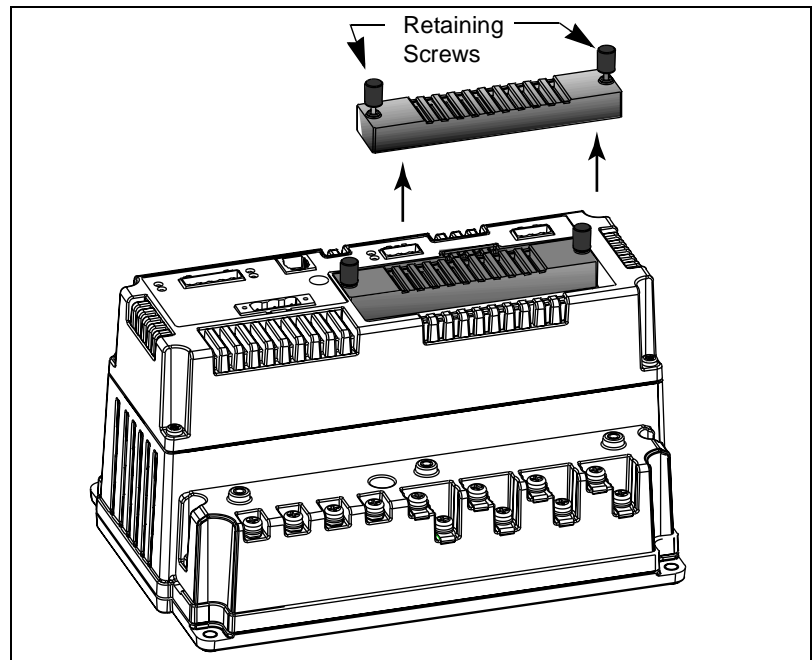


Figure 4-3: Removing the dust cover on the circuit monitor

4. Orient the ECC and align with the grooves inside slot A as shown in Figure 4-4.
5. Slide the ECC down until it is firmly seated and the connectors on the card and the circuit monitor are engaged. The top of the card should be flush with the top of the circuit monitor.

NOTE: The connector pins bend easily. Do not force the card into the slot.

6. Hand tighten the retaining screws to secure the ECC to the circuit monitor.

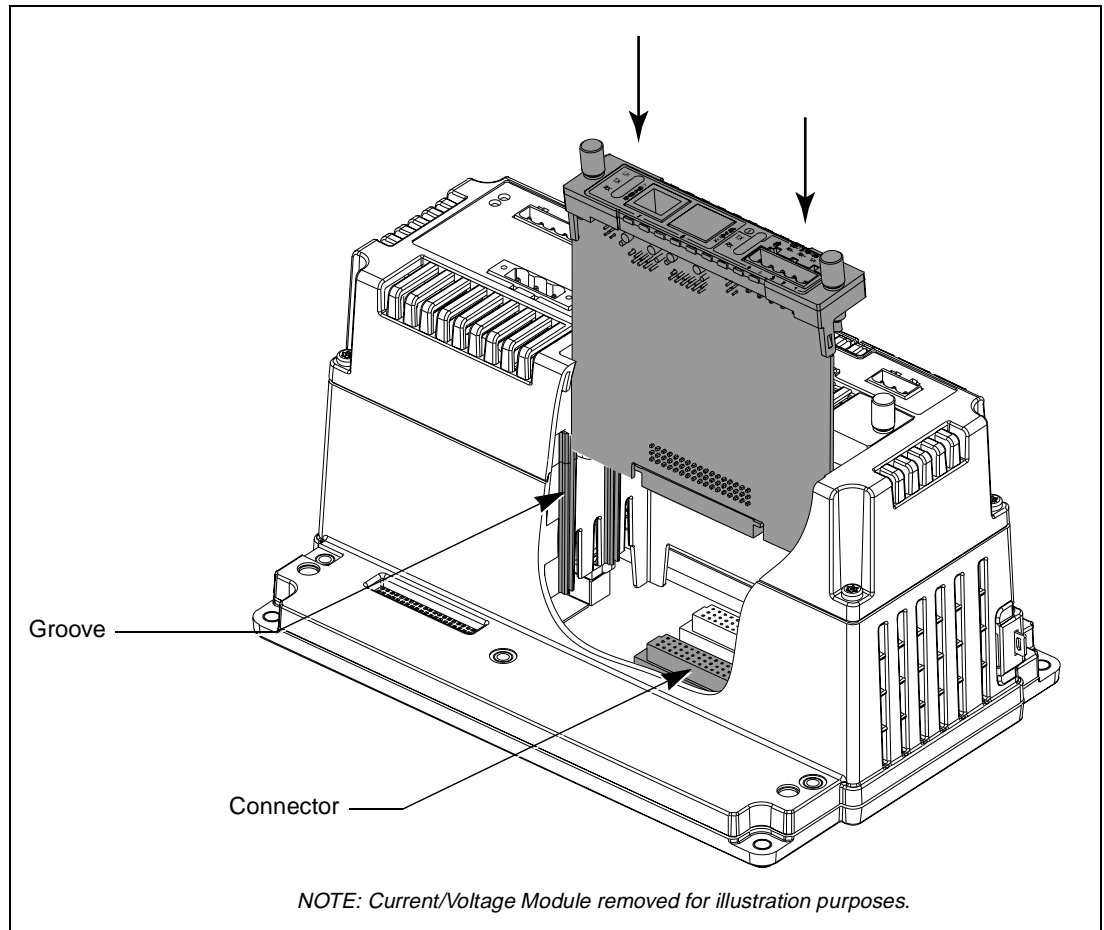


Figure 4-4: Installing the ECC into the circuit monitor

7. If the host circuit monitor is mounted in an enclosure, make sure to remove all tools from the enclosure. Then install all covers and close all doors to the enclosure.
8. Proceed to the next section, "Wiring" on page 12, and make all wiring connections as described. Do not restore power until communications wiring is complete.

WIRING

This section describes ECC control power and communications wiring.

Control Power

The ECC does not have its own control power supply. The ECC receives control power from the circuit monitor into which it is installed. The green power LED illuminates steadily when power is being received from the CM4000.

Communications

This section describes communications wiring for the RS-485 serial and the Ethernet ports.

RS-485 Serial Port

The RS-485 serial port is used for communications with daisy-chained devices and is designed to support up to 31 defined devices without a repeater (Figure 4–5), or up to 63 defined RS-485 devices with a repeater. The RS-485 enables communications via a 4-wire plus shield cable (Tx+, Tx-, Rx+, Rx-, and Shld). It can also be configured for 2-wire plus shield.

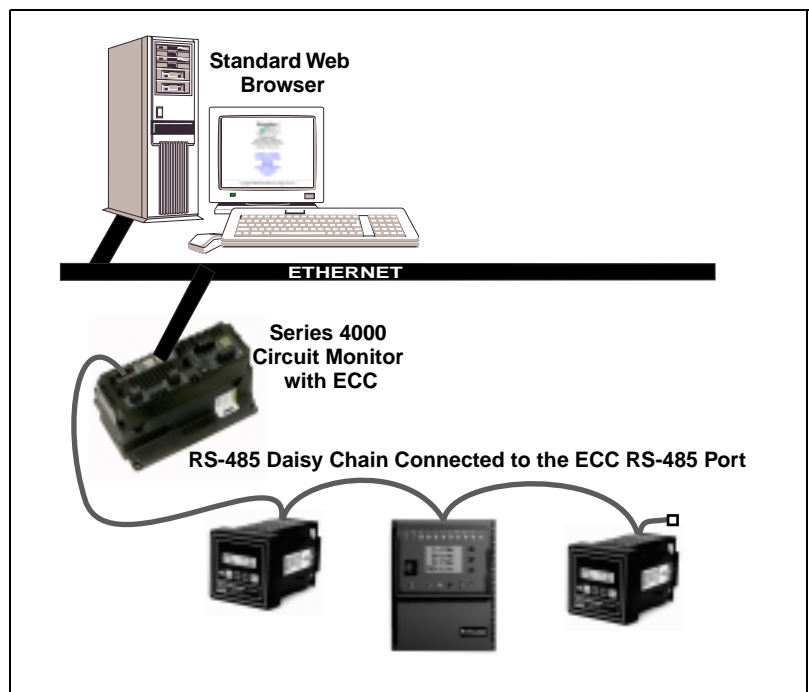


Figure 4–5: Daisy Chain connected to ECC RS-485 port

For 4-wire communication, Belden 8723 or 9842 cable or equivalent is recommended. For 2-wire communication, Belden 9841 or equivalent is recommended.¹

1. If Enercept® meters are on the daisy chain, use Belden 1120A or equivalent.

The connector used to wire into this interface is a 5-point screw type commonly known as a “phoenix” connector. For 4-wire communication, connect the wires to the terminal block as show in Figure 4–6.

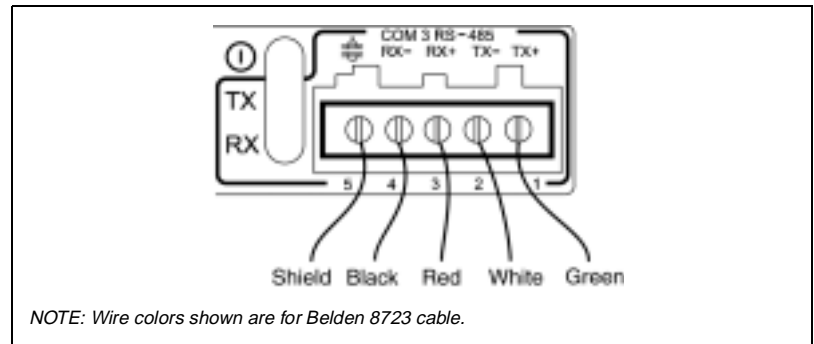


Figure 4–6: Communications wiring for 4-wire cable

For 2-wire communication, connect the white wire to the Tx– terminal and the blue wire to the Tx+ terminal as shown in Figure 4–7. Then connect a jumper wire from terminal Tx– to terminal Rx– and another jumper wire from terminal Tx+ to terminal Rx+. Connect the shield wire to the shield terminal.

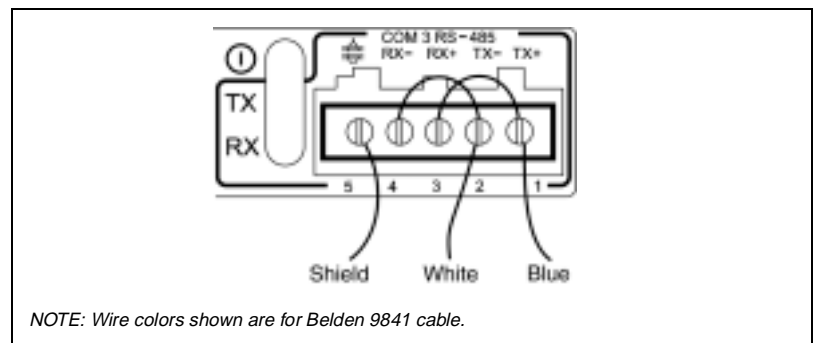


Figure 4–7: Communications wiring for 2-wire cable

RS-485 LEDs

One set of LEDs is provided for the RS-485 port: a yellow LED which illuminates when the ECC is receiving data (RX) and a green LED which illuminates when data is transmitted (TX).

NOTE: A third LED (green) next to the RS-485 RX and TX LEDs is the ECC power LED. It illuminates steadily when the ECC is receiving control power.

Biasing

On RS-485 daisy chains, correct biasing is required to ensure reliable communications. Traditionally, a Multipoint Communications Adapter (part number MCA-485) is used at the beginning of the daisy chain. However, no external MCA is necessary with the ECC because the adapter circuitry is built in.

Termination

RS-485 daisy chain termination is required to ensure reliable communications. The last device on the daisy chain usually needs to have a Multipoint Communications Terminator (part number MCT-485 or MCTAS-485). Refer to the instruction bulletin for the last device on the daisy chain to determine whether an MCT is required. If one is, contact your local sales representative.

Daisy Chain Maximum Distances

The maximum number of devices capable of being supported on a single daisy chain is determined based on the combination of baud rate, the length of the daisy chain, and the types of RS-485 devices (2-wire/4-wire) on the daisy chain. The RS-485 interface will support daisy chains that fall within the specifications shown in Tables 4–2 and 4–3.

Table 4–2: 4-Wire Daisy Chain Maximum Distances

Baud Rate	Maximum Distances	
	1–16 Devices	17–32 Devices
1200	10,000 ft. (3,048 m)	10,000 ft. (3,048 m)
2400	10,000 ft. (3,048 m)	5,000 ft. (1,524 m)
4800	10,000 ft. (3,048 m)	5,000 ft. (1,524 m)
9600	10,000 ft. (3,048 m)	4,000 ft. (1,219 m)
19200	5,000 ft. (1,524 m)	2,500 ft. (762 m)
38400	5,000 ft. (1,524 m)	1,500 ft. (457 m)

Table 4–3: 2-Wire Daisy Chain Maximum Distances

Baud Rate	Maximum Distances	
	1–8 Devices	9–16 Devices
1200	10,000 ft. (3,048 m)	10,000 ft. (3,048 m)
2400	10,000 ft. (3,048 m)	5,000 ft. (1,524 m)
4800	10,000 ft. (3,048 m)	5,000 ft. (1,524 m)
9600	10,000 ft. (3,048 m)	4,000 ft. (1,219 m)
19200	5,000 ft. (1,524 m)	2,500 ft. (762 m)
38400	2,500 ft. (762 m)	1,500 ft. (457 m)

Ethernet Ports

The ECC has two on-board Ethernet ports: 10/100BaseTX Twisted Pair and 100BaseFX. Figure 4–8 shows a typical network application.

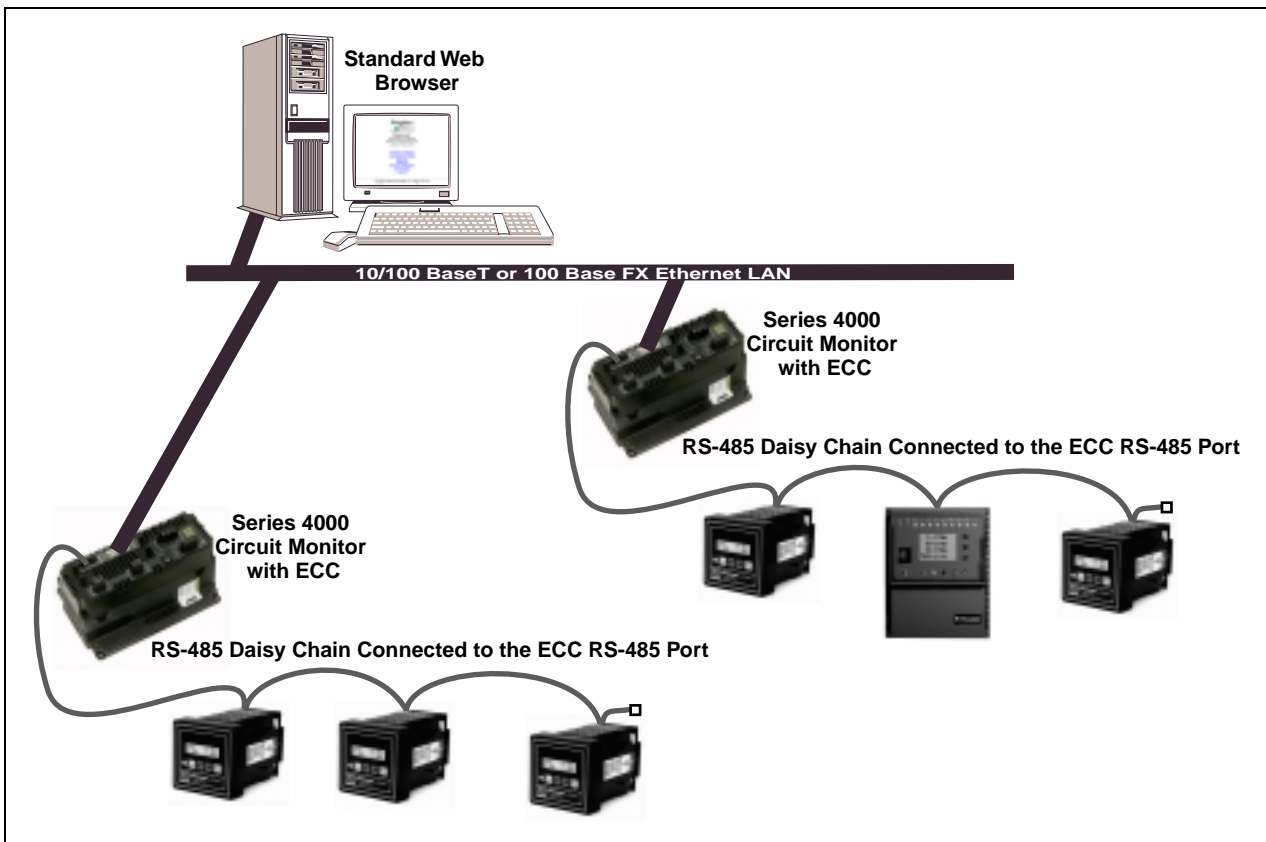


Figure 4–8: Series 4000 Circuit Monitor with ECC in typical network application

10/100BaseTX RJ-45 Twisted Pair

This Ethernet port drives a twisted pair cable up to 328 ft. (100 m). Use data grade twisted-pair wire. This wire *must* have a characteristic impedance of 100 ohms and meet the EIA/TIA Category 5 standard wiring specifications. The cable can be either Shielded Twisted Pair (STP) or Unshielded Twisted Pair (UTP). UTP is commonly used in the United States, and STP is commonly used in Europe.¹

100BaseFX Fiber-Optic

The ECC on-board fiber-optic port allows the CM4000 to communicate with a fiber-optic based Ethernet LAN. The port is a duplex LC connector receptacle and is compatible with 1300 nm wavelength multimode fiber connections. It is optimized for 62.5 or 50/125 micron multimode graded index glass optical fiber. The transceiver is capable of signal integrity in up to 6,562 ft. (2,000 m) of multimode fiber. This port supports both half-duplex and full-duplex fiber-optic cable.

NOTE: The ECC is shipped with a dust cover inserted into the fiber-optic port because the port is very sensitive to dust. The dust cover should remain in the fiber-optic port at all times except when it is removed to insert a fiber-optic cable. Retain the dust cover for future use.

Ethernet LEDs

The two Ethernet ports share one set of LEDs: a yellow LED which illuminates when the ECC is receiving data (RX) and a green LED which illuminates when data is transmitted (TX). A third light, LK (Link), illuminates when there is a proper Ethernet connection.

NOTE: Only one Ethernet port can be used at a time.

RESTORING POWER

NOTE: If the host circuit monitor is mounted in an enclosure, make sure to remove all tools from the enclosure. Then install all covers and close all doors to the enclosure before restoring power.

Turn power back on in this order:

1. Un-short the CTs.
2. Put PT fuses back or turn on the disconnect switch.
3. Turn on control power to the circuit monitor.
4. If another option card is installed, restore power to it.

1. For CE applications, do not use IBM Type 1 Cabling (STP at 150 ohms).

CHAPTER 5—SETUP

CHAPTER CONTENTS

CHAPTER CONTENTS	17
SETTING UP THE ECC VIA THE SERIES 4000 CIRCUIT MONITOR DISPLAY	17
Initial Local Setup	17
SETUP VIA A NETWORK OR THE INTERNET	19
Log Into the ECC	19

SETTING UP THE ECC VIA THE SERIES 4000 CIRCUIT MONITOR DISPLAY

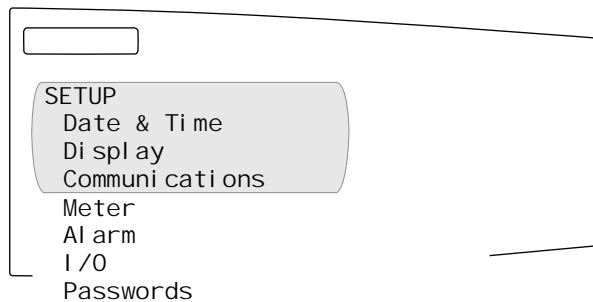
Prior to setting up the ECC, obtain a unique IP address, subnet mask, router address, and the Ethernet physical connection (fiber or twisted pair) for the CM4000 from your network administrator. You will use this information to configure the ECC via the CM4000 local display.

Initial Local Setup

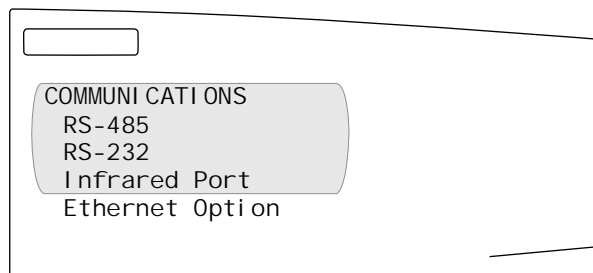
NOTE: For more information on Series 4000 Circuit Monitor display operation, refer to the POWERLOGIC Circuit Monitor Series 4000 instruction bulletin.

After installing the ECC in the CM4000, you are ready to set up the ECC via the CM4000 local display. Follow these steps:

1. From the CM4000 main menu, select Setup. The password prompt displays.
2. Select your password. The circuit monitor default password is 0. The Setup menu displays. Select Communications.



3. The Communications setup screen displays. Select Ethernet Option.



4. The Ethernet Setup screen displays.

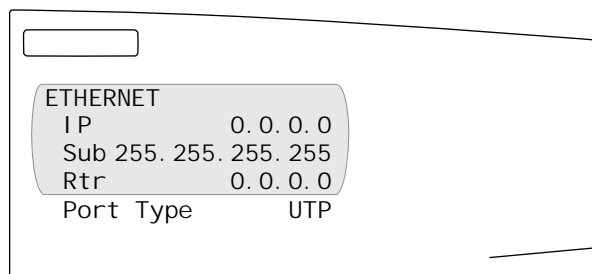


Table 5–1 describes the options on this menu.

5. Use the arrow buttons to scroll to the menu option you want to change.
6. Press the enter button to select the value. The value begins to blink. Use the arrow buttons to scroll the available values. To select the new value, press the enter button.
7. Use the arrow buttons to scroll through the other options on the menu, or, if you are finished, back out of the menu and, when prompted to save, answer Yes.

Table 5–1: Ethernet Communication Setup Parameters¹

Option	Available Values	Selection Description	Default
IP Address	0.0.0.0 to 255.255.255.255	The unique IP address of the ECC.	0.0.0.0
Subnet Mask ²	0.0.0.0 to 255.255.255.255	The unique subnet mask of your network.	255.255.255.255
Router ²	0.0.0.0 to 255.255.255.255	Designates the router used to communicate to other segments.	0.0.0.0
Port Type	UTP Fiber full duplex Fiber half duplex	UTP—10/100BaseTX communications Fiber—100Base FX fiber-optic communications	UTP

1. After the initial setup, the ECC is accessible via Ethernet and the remaining ECC setup can be done via HTML and a standard web browser.
2. Optional if communications are over an isolated network only.

NOTE: The ECC HTML pages are not accessible via the circuit monitor local display. For setup via a network or the internet, refer to the companion reference manual.

SETUP VIA A NETWORK OR THE INTERNET

Log Into the ECC

This section tells how to configure the ECC over a network or the Internet. After you set up Ethernet parameters using the Series 4000 Circuit Monitor display, the ECC is accessible via Ethernet and standard web browsers such as Internet Explorer (version 5.0 or higher recommended). All ECC setup information is stored in the circuit monitor into which the ECC is inserted. Thus, one ECC can be exchanged with another ECC without affecting these settings.

To log into the ECC via an Ethernet network, follow these steps:

Launch your Internet web browser (Internet Explorer v. 5.0 or higher is recommended).

Enter the ECC IP address (for example 221.234.252.39) into the URL address field (Figure 5–1) and press Enter.



Figure 5–1: IP address entered in URL address field

NOTE: If this is the first time you have accessed the ECC via a web browser, the password log-in page displays. The default password is "admin", all lower case. If you are the administrator, it is highly recommended, for security reasons, that you change this default password at this time. See the ECC reference guide (30230-304-204) for more information.

NOTE: English is the default language as shown in Figure 5–2.

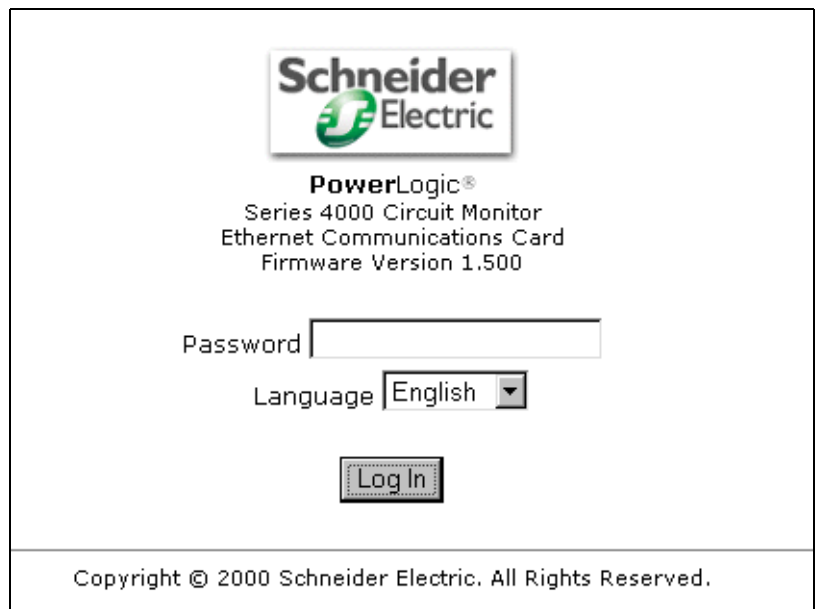


Figure 5–2: ECC Log In page

NOTE: For setup via a network or the internet, refer to the ECC reference manual (63230-304-204).

APPENDIX A—MAINTENANCE AND TROUBLESHOOTING

MAINTENANCE

The ECC does not require maintenance, nor does it contain any user-serviceable parts. If the ECC requires service, contact your local sales representative, or call the POWERLOGIC Technical Support Center for assistance.

Refer to the Technical Support Contacts provided in the Series 4000 Circuit Monitor shipping carton for a list of support phone numbers by country.

TROUBLESHOOTING

Potential problems and their possible causes are shown in Table A-1.

Table A-1: Troubleshooting

Problem	Possible Cause	Solution
Power light is not illuminated.	<ol style="list-style-type: none"> 1. Source power is not applied or is not stable. 2. External fuse is blown or not making good contact. 3. LED is burned out. 	<ol style="list-style-type: none"> 1. Apply power or check power source. 2. Check fuse. 3. Check to see if other LEDs operate properly. If they do, contact Technical Support.
RS-485 port LEDs repeatedly blink then pause.	ECC does not have a valid IP address or subnet mask.	Get valid IP address and subnet mask from network administrator. Then configure the ECC via the circuit monitor display.
Ethernet link light not lit.	Proper link is not established.	Make sure the proper cable is used and that it is properly connected. Reset the ECC.
SMS does not connect to the ECC.	<ol style="list-style-type: none"> 1. Incorrect IP address. 2. Incorrect subnet mask or IP router address. 3. Bad Ethernet connection (look at Ethernet receive light, which indicates traffic on network). 	<ol style="list-style-type: none"> 1. Get correct IP address. 2. Get correct subnet mask and/or IP router address. 3. Check cable connections.
SMS does not go online with devices on ECC.	ECC not functioning correctly or configuration problems.	<p>Check status LED.</p> <p>Verify that the ECC communication configuration matches the SMS configuration (IP mask and IP router are identical).</p> <p>Verify ECC receives requests (ping ECC, if using TCP/IP, by going to c:/prompt and typing ping and ECC IP address, e.g., ping 199.0.62.41). Your network administrator can help with this.</p> <p>Verify that the device address is entered correctly in SMS.</p>
RS-485 port LED repeatedly blinks 8 times.	Incorrect Series 4000 Circuit Monitor firmware.	Call Technical Support for assistance.
Forgot administrator password.	—	Call Technical Support for assistance.

APPENDIX B—SPECIFICATIONS

This appendix contains specifications for the ECC.

Table B-1: Specifications

ENVIRONMENTAL	
Ambient Operating Temperature	-25° to +70°C
Ambient Storage Temperature	-40° to +85°C
Relative Humidity Rating (Non-condensing)	5 to 95%
Altitude (maximum)	10,000 ft. (3,167 m)
Pollution Degree	2
REGULATORY/STANDARDS	
Electromagnetic Interference (Emissions)	Radiated: FCC Part 15 Class A/CE Heavy Industrial (EN55022)
	Conducted: FCC Part 15 Class A/CE Heavy Industrial (EN55022)
Electrostatic Discharge	Air Discharge: IEC 1000-4-2 (EN61000-4-2)
Immunity to Electrical Fast Transients	Transients: IEC 1000-4-4 (EN61000-4-4)
Immunity to Electromagnetic Fields	Radiated: IEC 1000-4-3 (EN61000-4-3)
	Conducted: IEC 1000-4-6 (EN61000-4-6)
Safety	USA: UL 508 Compliant
Listings	UL, CE, cUL

Figure B-1 shows dimensions of the ECC.

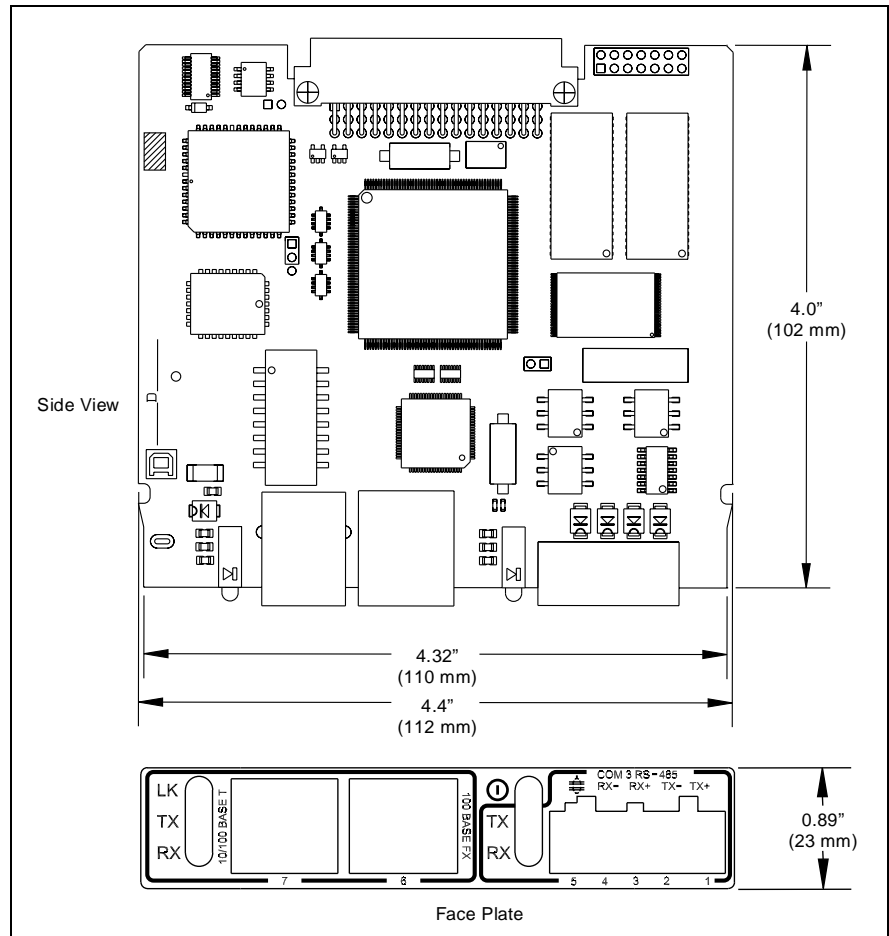


Figure B-1: ECC dimensions

INDEX

- Numerics
 - 10/100BaseTX 18
 - specifications 16
 - 100BaseFX fiber-optic
 - specifications 16
 - A
 - altitude 23
 - B
 - Belden 8723 12
 - Belden 9841 12
 - C
 - cable
 - recommended 2-wire 12
 - recommended 4-wire 12
 - CE 23
 - circuit monitor
 - display
 - setting up the ECC from 17
 - dust cover 10
 - ECC connector 8
 - firmware version required 5
 - host
 - defined 5
 - option slots 10
 - turning off power to 9
 - communications 12
 - cUL 23
 - D
 - data
 - receiving 8
 - transmitting 8
 - E
 - ECC
 - 10/100BaseTX Twisted Pair port 8
 - 100BaseFX port 8
 - CM4000 connector 8
 - components (illustration) 8
 - connector pins 11
 - control power 12
 - default settings 6
 - defined 1
 - description 8
 - description/application 2
 - Ethernet
 - link LEDs 8
 - port LEDs 8
 - fiber-optic 8
 - installing 8–11
 - log in page 19
 - orienting the 11
 - parameters 6
 - pinging 21
 - power LED 8
 - replacing one ECC with another 19
 - retaining screws 8
 - RS-485
 - LEDs 8
 - port 8
 - setup 17
 - via internet 19
 - via network 19
 - wiring 12–16
 - electromagnetic interference 23
 - electrostatic discharge 23
 - electrostatic discharge-sensitive components 9
 - ESD. See electrostatic discharge-sensitive components.
 - Ethernet LEDs 16
- F
 - fiber-optic
 - 100BaseFX 16
 - dust cover 16
 - full-duplex 16
 - half-duplex 16
 - specifications 16
 - I
 - immunity
 - to electrical fast transients 23
 - to radiated fields 23
 - installation
 - discharging static before 9
 - overview 5
 - turning power back on 11
 - Internet Explorer
 - version required 2
 - IP address 18–19
 - L
 - LEDs
 - Ethernet link 8
 - Ethernet port 8
 - LK (link) 16
 - power 8
 - RS-485 8
 - Link LED 16
 - listings 23
 - log in page 19
 - M
 - maintenance 21
 - O
 - operating temperature, ambient 23
 - P
 - password
 - default 19
 - forgot 21
 - phoenix connector 13
 - pinging ECC 21
 - pollution degree 23
 - port
 - 10/100BaseTX twisted pair 8

- 100BaseFX 8
- RS-485 8
- type 18
- Q
- quick start 5
- R
- relative humidity rating 23
- router 18
- RS-485 serial port
 - daisy chain connected to 12
- S
- safety 23
 - precautions 3
- setup
 - communications 17
 - Ethernet option 17
 - initial local 17
 - prior to 17
 - selecting a value 18
 - via circuit monitor display 17
 - via network or internet 19
- Shielded Twisted Pair (STP) 16
- specifications 23
- storage temperature, ambient 23
- subnet mask 18
- support
 - technical 21
- T
- technical support 21
- troubleshooting 21
- U
- UL 23
- Unshielded Twisted Pair (UTP) 16
- URL address field 19
- UTP 18
- W
- web browser
 - recommended 2
- wiring
 - communications
 - Ethernet ports 15
 - 10/100BaseTX 16
 - 100BaseFX fiber-optic 16
 - LEDs 16
 - RS-485 serial port 12
 - biasing 13
 - daisy chain max. distances 14
 - termination 14
 - control power 12

