

Instruction Bulletin

POWERLOGIC® Ethernet Gateway EGX200

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NOTICE

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn you 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. CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result** in property damage.

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

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

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.

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CHAPTER 1—INTRODUCTION

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ABOUT THIS DOCUMENT

This document contains installation and operation instructions for the POWERLOGIC® Ethernet Gateway (EGX200). To install the EGX200, you should have a general understanding of the POWERLOGIC Power Monitoring and Control System related products and technology.

For more information about the POWERLOGIC system, see the following documents:

- POWERLOGIC System Manager (SMS) Software User's Guide
- POWERLOGIC System Architecture and Application Guide

PRODUCT DESCRIPTION

The POWERLOGIC EGX200 is an Ethernet-based device that provides a transparent interface between Ethernet-based networks and field devices. Field devices include meters, monitors, protective relays, PLCs, trip units, and other devices that communicate using MODBUS, JBUS or POWERLOGIC protocol.

The EGX200 uses MODBUS/TCP protocol to access power monitoring information across a local area network (LAN) or a wide area network (WAN). This capability allows the use of power monitoring software to access information from devices for data collection, trending, alarm/event management, harmonic analysis, and other functions.

In addition, the EGX200 contains a web server, which lets you remotely configure and troubleshoot both Ethernet and serial communication parameters. A typical application example is shown in Figure 1–1.

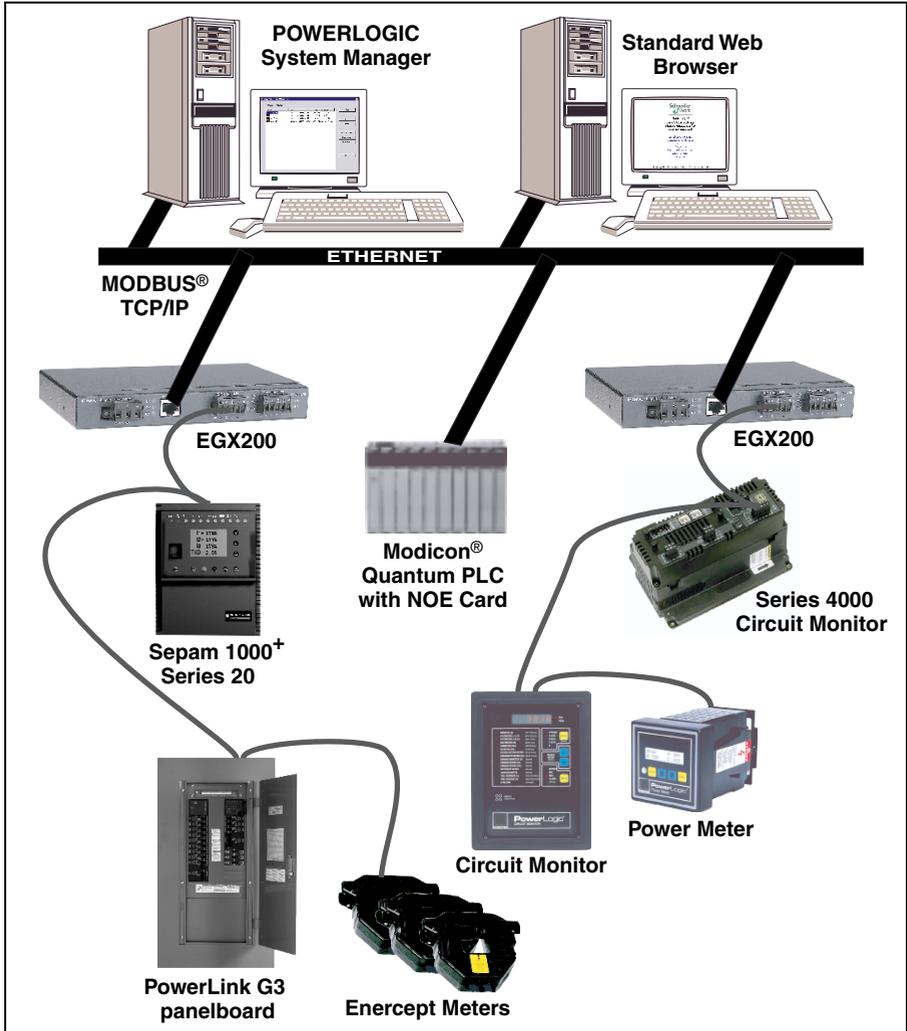


Figure 1–1: System architecture example showing EGX200 installed for Ethernet connectivity

EGX200 BOX CONTENTS

The following items are provided for installation and operation of the EGX200:

- EGX200 unit with all connectors plugged in
- 24 Vdc switching power supply (wall mountable with global plug kit)
- EGX200 mounting kit, containing rubber feet and DIN rail adapters
- Mounting template
- Instruction Bulletin for the installation and operation of the EGX200 and the power supply
- Registration card

EGX200 COMPONENTS

Figure 1–2 shows the components of the EGX200. Table 1–1 identifies those components and explains their functions.

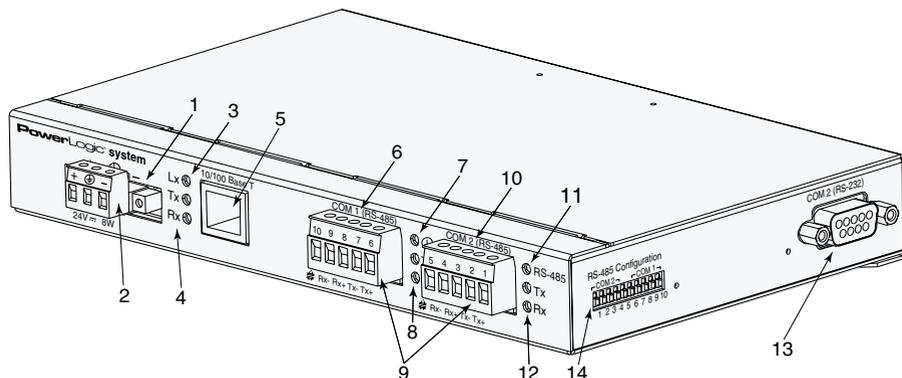


Figure 1–2: Identifying EGX200 components

Table 1–1: EGX200 Components

No.	Item	Description
1	Control Power Connection	24 Vdc connection for control power to the EGX200.
2	Control Power Connector	3-position male terminal block for 24 Vdc control power connection.
3	Ethernet Link LED	LED illuminates yellow steadily when there is a proper Ethernet physical connection.
4	Ethernet Port LEDs	A yellow LED illuminates when the EGX200 is receiving data (Rx). A green LED illuminates when the EGX200 is transmitting data (Tx).
5	10/100 Base T port (twisted pair)	This port drives a twisted pair Cat. 5 cable up to approximately 328 ft (100 m). This port has a standard RJ-45 connector.
6	COM 1 (RS-485)	RS-485 port 1 is used for connecting POWERLOGIC, JBUS, or MODBUS daisy-chained devices.
7	Power LED	This green LED illuminates steadily when minimum control power is applied to the unit.
8	COM 1 LEDs	The yellow LED illuminates when COM 1 is receiving data (Rx); the green LED illuminates when COM 1 is transmitting data (Tx). Both LEDs flicker intermittently if there is a configuration error.
9	RS-485 Connectors	5-position female terminal block for RS-485 ports 1 and 2.
10	COM 2 (RS-485)	RS-485 port 2 is used for connecting POWERLOGIC, JBUS, or MODBUS daisy-chained devices.
11	RS-485 LED	If using COM 2 as RS-485, the RS-485 LED illuminates green; if using COM 2 as RS-232, the RS-485 LED is not lit.
12	COM 2 LEDs	The yellow LED illuminates when COM 2 is receiving data (Rx); the green LED illuminates when COM 2 is transmitting data (Tx).
13	COM 2 (RS-232)	DB-9 port is used for initial network setup or for serial communication.
14	Dip Switches	Provide custom configuration options for COM 1 and COM 2 biasing and termination.

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 equipment in which the EGX200 is to be installed before installing and wiring the EGX200.
- 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

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INTRODUCTION

This chapter contains a quick reference that lists the steps necessary to install and operate the EGX200, as well as the initial instructions for setting up the EGX200 before installation.

EGX200 QUICK START CHECKLIST

Use the steps in Table 3–1 as a quick start checklist for the EGX200. For complete instructions, refer to the chapter listed:

Table 3–1: Quick Start Checklist

Steps	Reference
1. Wire the control power.	Chapter 4—Installation and Wiring
2. Set up the EGX200 for Ethernet communication via HyperTerminal or web browser.	Chapter 3—Getting Started
3. Install the EGX200.	Chapter 4—Installation and Wiring
4. Wire your RS-485 devices to the serial ports.	Chapter 4—Installation and Wiring
5. Launch your browser to configure the serial communication parameters.	Chapter 5—Operation

EGX200 INITIAL SETUP

Before configuring the EGX200, obtain a unique static IP address, subnet mask, and router IP address from your network administrator.

Table 3–2: Options for Ethernet Communications Setup

Option	Selection Description	Default
IP Address	The EGX200 Ethernet IP network address (static IP required)	10.10.10.10
Subnet Mask	The Ethernet IP subnet mask address of your network	255.255.255.0
Router IP Address	The router used for wide area network (WAN) communications	0.0.0.0

There are two ways to initially set up and assign the EGX200 Ethernet parameters:

- Using a Web Browser
- Using HyperTerminal

Setup Using a Web Browser

The EGX200 has a web server that includes embedded pages that let you configure Ethernet and serial communication parameters, add serial devices, enter passwords, and access diagnostics. The EGX200 ships with a default IP address (10.10.10.10) and a subnet mask default address (255.255.255.0) that can be used to access these web pages. The Communication Settings web page is used to set up the desired IP address, subnet mask, and router IP address to match the network configuration.

To access the EGX200 Communication Settings web page using a browser, follow these steps:

1. Connect a cross-over Ethernet cable from the EGX200 to the PC, as shown in Figure 3–1.

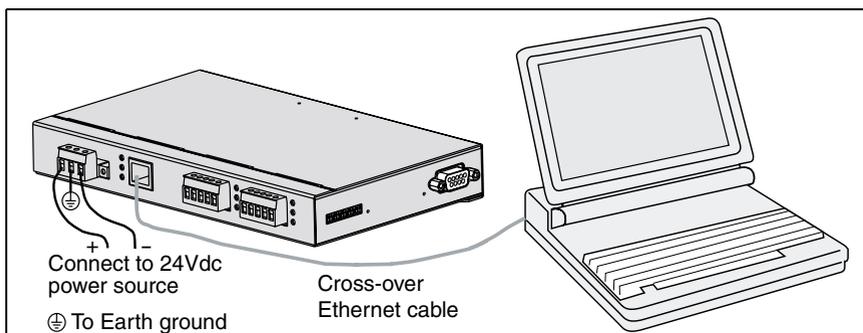


Figure 3–1: Connecting PC to EGX200 using cross-over Ethernet cable

2. Power the EGX200 by connecting a 24 Vdc power source to its control power connection.

Make sure that the control power is properly Earth grounded (see Control Power Wiring on page 19).

3. For the PC, force the static IP address (10.10.10.11) and a subnet mask (255.255.255.0).

An example using Microsoft Windows® NT is shown in the following substeps. For help with other systems, contact your network administrator.

- a. From your PC's task bar, Click Start > Settings > Control Panel.

The Control Panel screen displays.

- b. From the Control Panel screen, select Network.

The Network dialog box displays.

- c. From the Network dialog box, select the Protocols tab.

The Network Protocols dialog box displays, as shown in Figure 3–2.

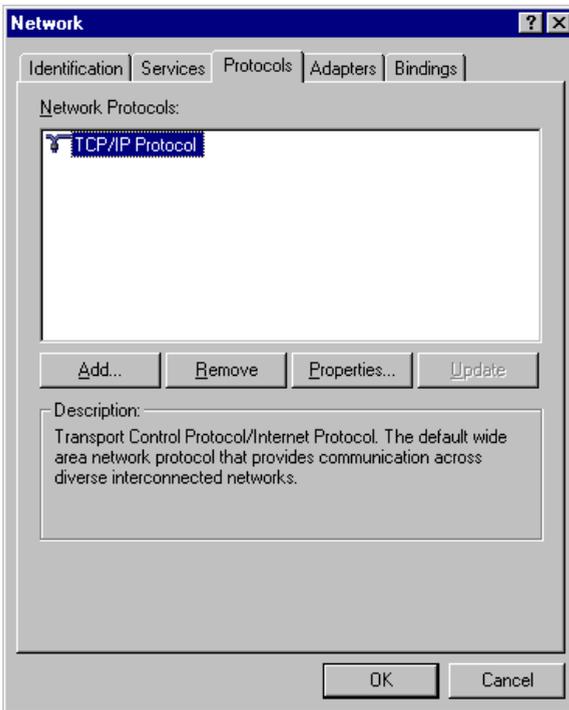


Figure 3–2: Entering the Network Protocol

- d. For Network Protocols, select TCP/IP Protocol, and then click Properties.

The Microsoft TCP/IP Properties dialog box displays, as shown in Figure 3–3.

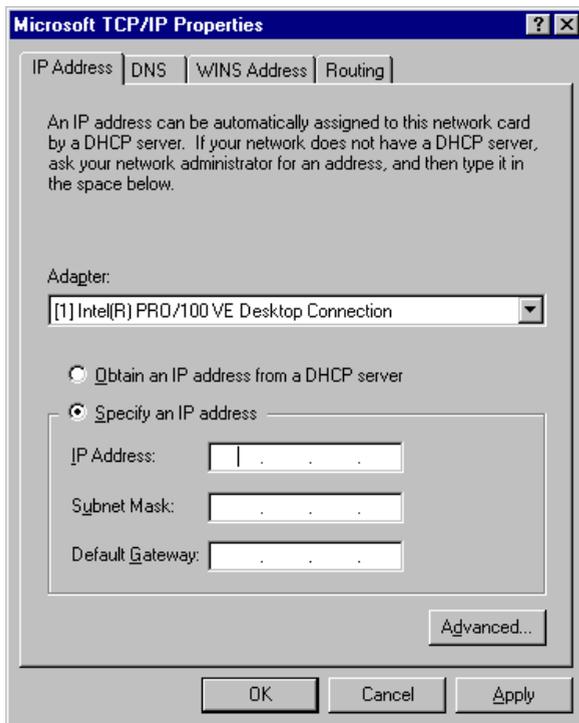


Figure 3–3: Entering the IP Address and Subnet Mask

- e. From the Microsoft TCP/IP Properties dialog box, select “Specify a IP address.”
 - f. Enter the IP address (10.10.10.11) and subnet mask (255.255.255.0), and then click OK.
 - g. Reboot your PC, if required.
4. Launch a standard web browser such as Internet Explorer.
 5. In the browser address field (see Figure 3–4), type the EGX200 IP address (10.10.10.10), and press Enter.



Figure 3–4: IP address entered in browser address field

The EGX200 login page displays, as shown in Figure 3–5.

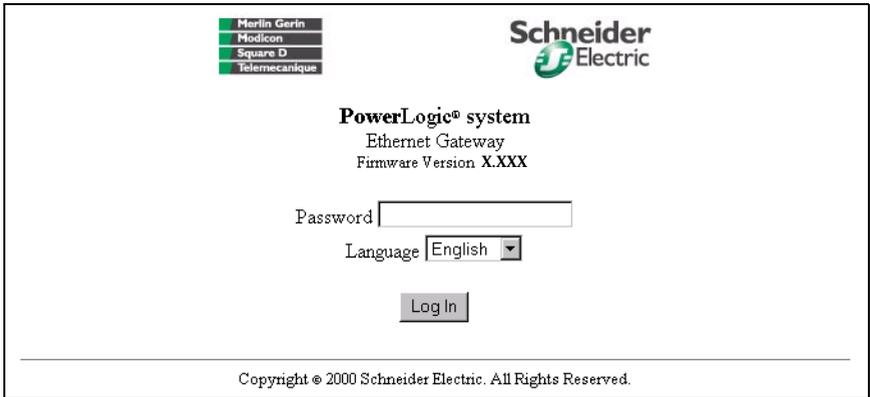


Figure 3–5: EGX200 Login page

6. From the Language pull-down menu, select the desired language.
7. In the Password field, type: **admin**
8. Click Log In.

The EGX200 Home page displays, as shown in Figure 3–6.

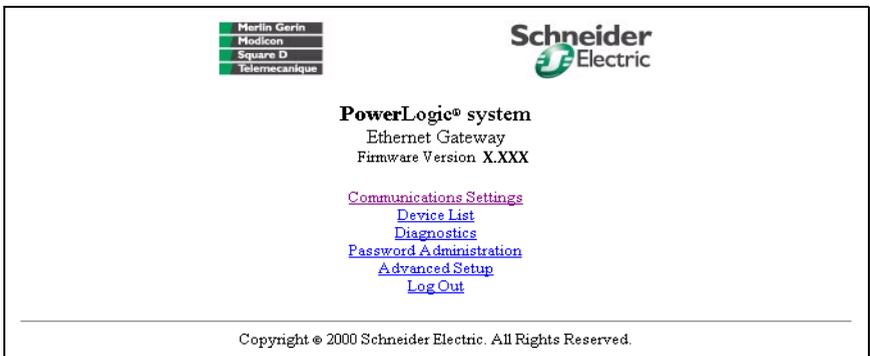


Figure 3–6: EGX200 Home page

9. Click Communication Settings to set up Ethernet and serial communication parameters.

The Communications Settings page displays, as shown in Figure 3–7.

Communications Settings		
Ethernet MAC- 00 80 67 80 04 75	COM 1	COM 2
IP Address 10 . 10 . 10 . 10	Baud Rate 9600 ▾	Baud Rate 9600 ▾
Subnet Mask 255 . 255 . 255 . 0	Parity Even ▾	Parity Even ▾
Router Address 0 . 0 . 0 . 0	Mode 4 Wire ▾	Mode 4 Wire ▾
		Port Selection RS485 ▾
<input type="button" value="Update"/>		
Home		
Copyright © 2000 Schneider Electric. All Rights Reserved.		

Figure 3–7: Communications Settings page

10. Enter your IP Address, Subnet Mask, and Router IP address, and click Update.

11. Reset your PC back to its original network configuration.

Now you are ready to install and use the EGX200 on your Ethernet network. Refer to **Chapter 4** and **Chapter 5** for more information.

Setup Using HyperTerminal

The EGX200 has a setup utility that can be accessed using the HyperTerminal program for the Microsoft Windows operating system, or an equivalent terminal emulator.

Accessing the EGX200 Setup Utility

To access the EGX200 setup utility, follow these steps:

1. Attach a null modem cable between the RS-232 COM port (COM 2) of the EGX200 and a Microsoft Windows-based PC, as shown in Figure 3–8.

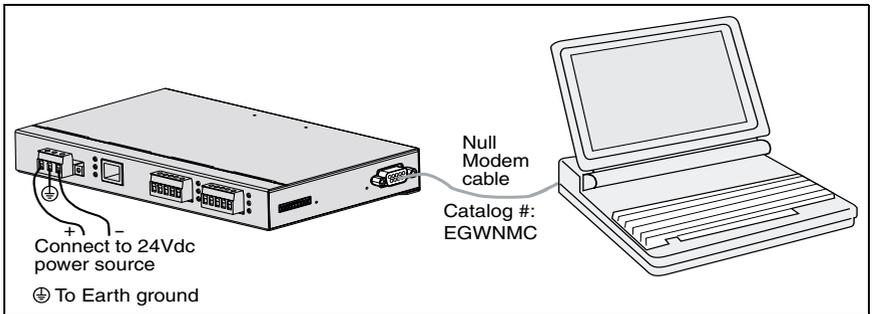


Figure 3–8: Connecting PC to EGX200 using Null Modem cable

2. From your PC, launch HyperTerminal. To do this, from the Windows Explorer task bar, click Start > Programs > Accessories > Hyperterminal > HyperTerminal.

The Connection Description dialog box displays, as shown in Figure 3–9.

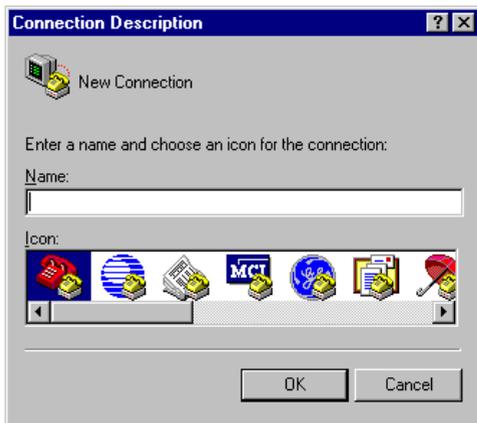


Figure 3–9: HyperTerminal Connection Description dialog box

3. In the Name field, enter a descriptive name for your new HyperTerminal connection, and then click OK.

The Connect To dialog box displays, as shown in Figure 3–10.



Figure 3–10: HyperTerminal Connect To dialog box

4. In the Connect using field, select the desired PC COM port, and then click OK.

The COM port properties page displays, as shown in Figure 3–11.

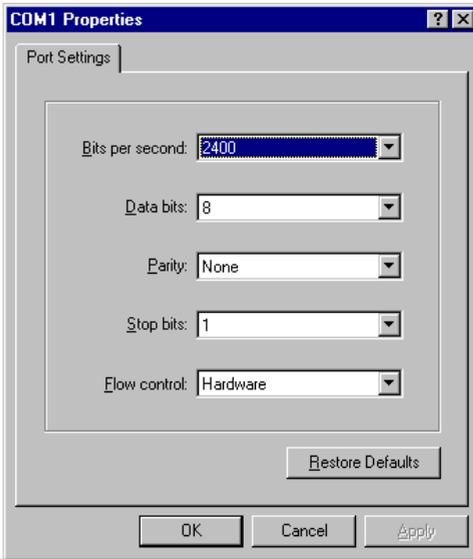


Figure 3–11: HyperTerminal COM Port Properties dialog box

5. In this dialog box, set the values listed in Table 3–3.

Table 3–3: Communications Settings Parameters

Settings	Value
Baud Rate	19200
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

You are now ready to enter the EGX200 setup utility.

6. Enter the EGX200 Setup Utility by doing the following steps:

NOTE: After applying or cycling power to the EGX200, the green COM 2 RS-485 LED turns OFF, and you have 5 seconds to press Enter on the PC keyboard to access the EGX200 setup utility.

- a. Apply power to the EGX200 by wiring the 24 Vdc connector to a power source, or cycle the power.
- b. While the COM 2 green RS-485 LED is OFF, press Enter.

The EGX200 Setup Utility menu displays, as shown in Figure 3–12. Table 3–4 provides descriptions of each menu option.

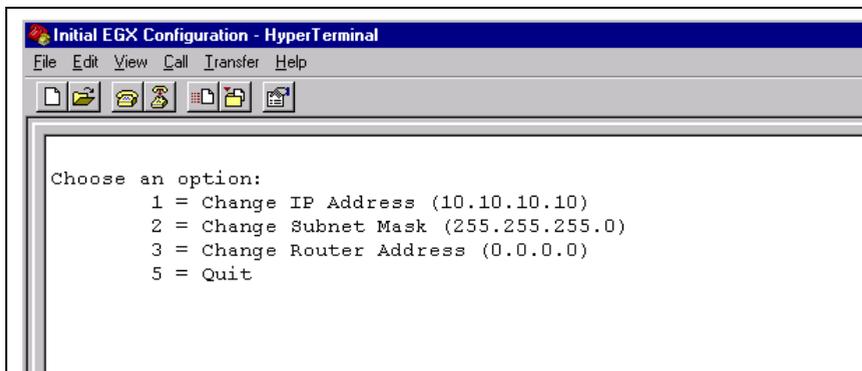


Figure 3–12: EGX200 HyperTerminal Setup Utility options

Table 3–4: EGX200 Setup Utility descriptions

Option No.	Description	Default Setting
1	Allows you to enter the unique IP address for the EGX200	10.10.10.10
2	Allows you to enter the Subnet Mask address of the EGX200 network	255.255.255.0
3	Allows you to enter the Router IP address for the EGX200	0.0.0.0
5	Saves the above configuration and exits the EGX200 setup utility	

You are now ready to install and use the EGX200 on your Ethernet network. Refer to **Chapter 4** and **Chapter 5** for more information.

CHAPTER 4—INSTALLATION AND WIRING

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MOUNTING LOCATIONS AND INSTALLATION

The EGX200 is designed to be set on a flat surface or mounted to a wall, a cabinet, or other surfaces. When choosing a mounting location, consider the following points:

- Allow for easy access to the EGX200
- Allow space for all wires to be neatly routed down the side or bottom of the EGX200

Typical locations for mounting the EGX200 include the following:

- power equipment instrument compartment
- office or raised floor environment
- auxiliary cabinet
- factory floor environment

NOTE: Make sure you follow all equipment manufacturer's procedures and warnings when installing the EGX200 in electrical equipment.

Dimensions

Figure 4–1 shows the EGX200 dimensions, including the DIN rail mounting equipment.

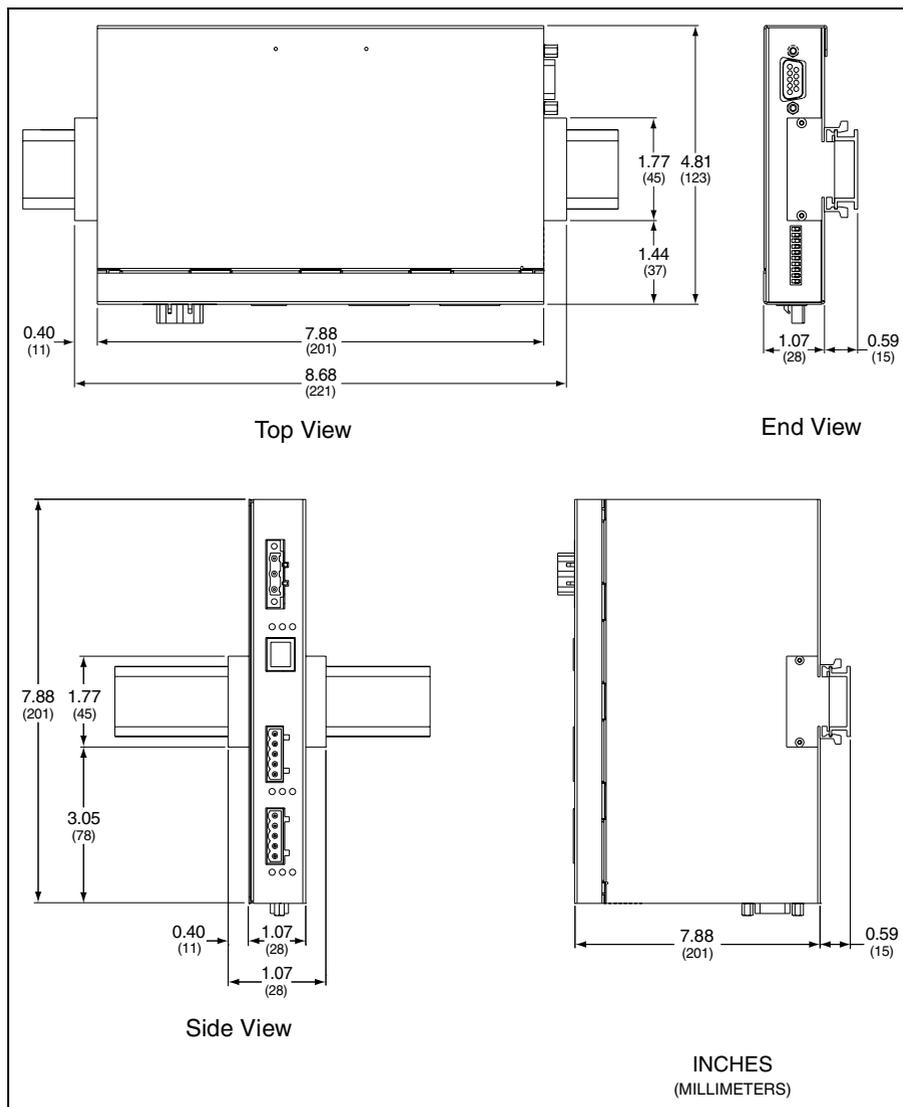


Figure 4–1: EGX200 Dimensions

Mounting Options

Figures 4–2, 4–3, and 4–4 illustrate some of the various mounting options.

Wall/Panel Mounting

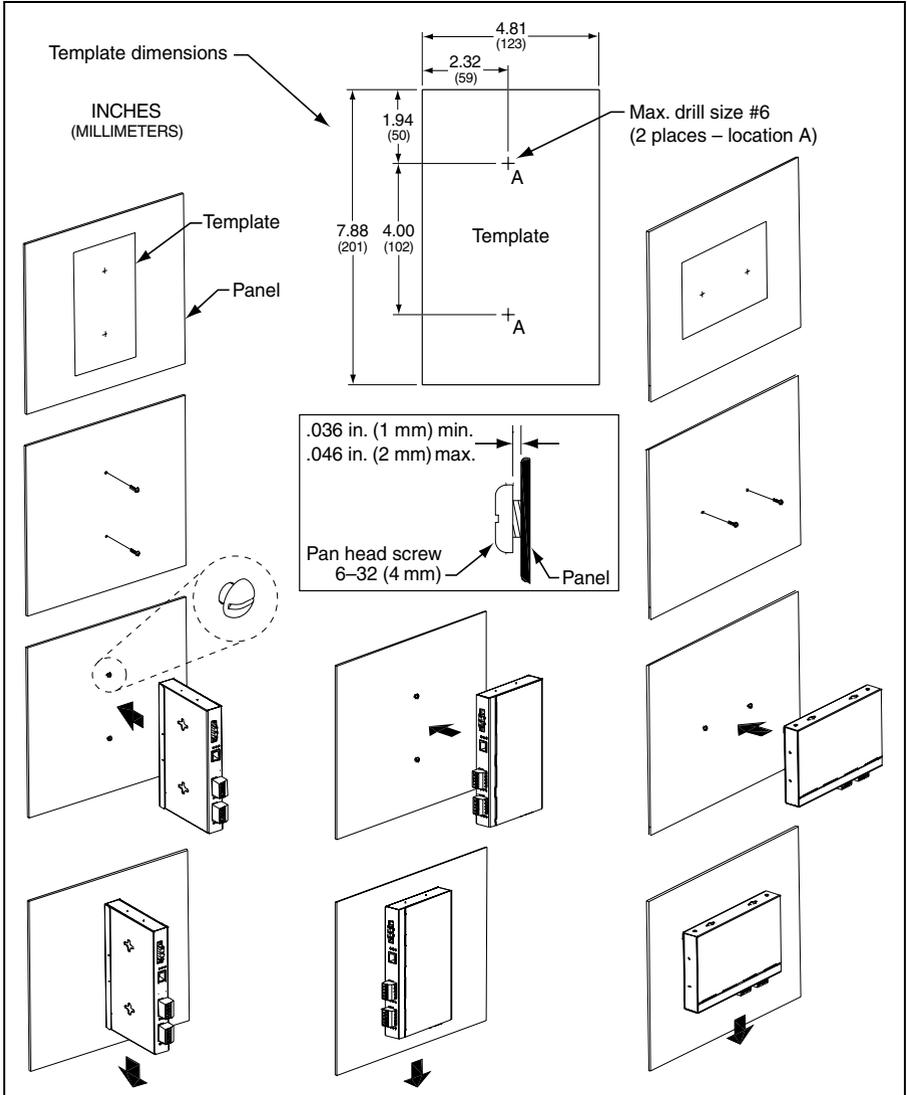


Figure 4–2: Wall/Panel Mounting

DIN Rail Mounting

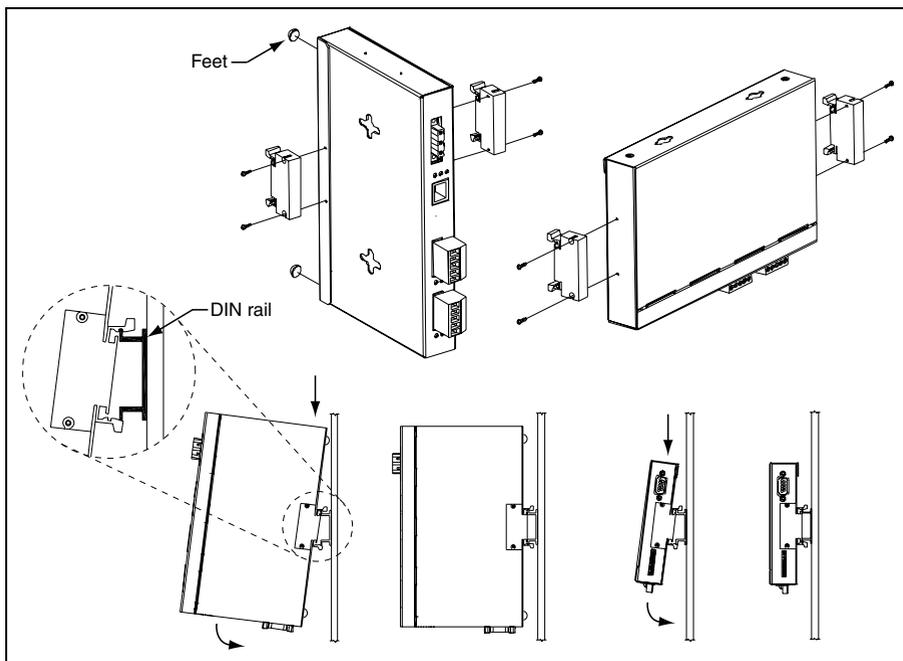


Figure 4-3: DIN Rail Mounting

Flat Surface Mounting

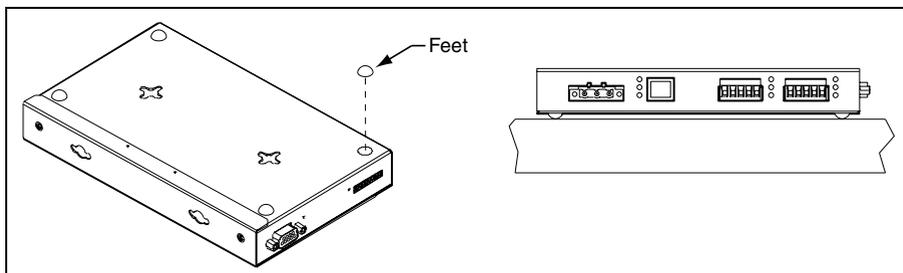


Figure 4-4: Feet Installation

WIRING CONNECTIONS

Control Power Wiring

The EGX200 accepts 24 Vdc control power with maximum power consumption of 8 watts. A 3-position male terminal block connector is provided for control power (see Figure 4–5).

A universal 24 Vdc switching power supply rated for 20 watts is included with the EGX200. This switching power supply must be connected to the EGX200 as shown in Figure 4-5, in which the red wire is connected to the positive (+) terminal and the black wire is connected to the negative (-) terminal.

If needed, another power supply or cord can be used to power the EGX200, as long as it is rated for a minimum of 8 watts at 24 Vdc ($\pm 10\%$ regulation).

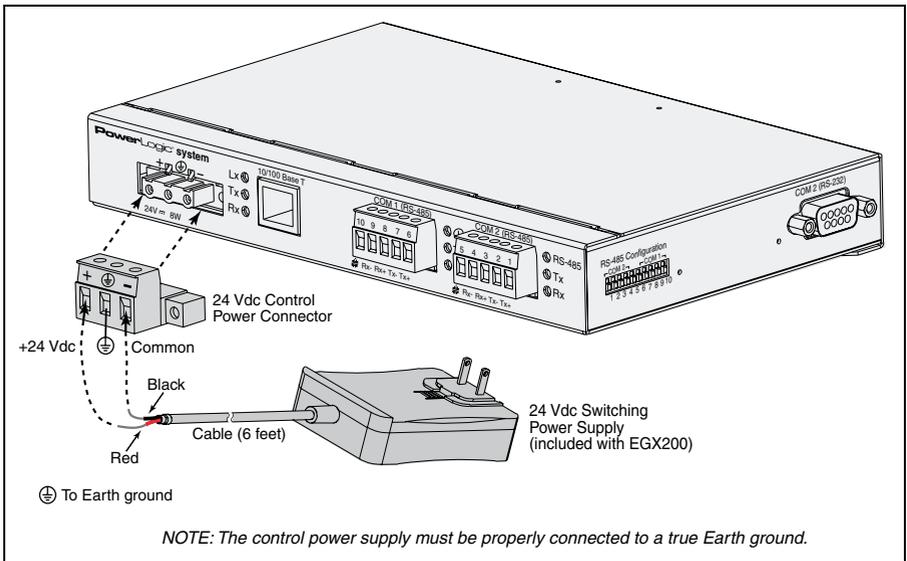


Figure 4–5: Control Power Connector

Control Power LED

A green power LED on the EGX200 remains ON to indicate it is receiving control power. This LED is located above the COM 1 (RS-485) Rx and Tx LEDs.

RS-485 Serial Ports

The RS-485 serial ports are used to communicate with daisy-chained devices. The EGX200 has two serial ports: COM 1 is always set for RS-485 communication, and COM 2 is selectable between RS-485 and RS-232. By default, COM 2 is set for RS-485 communication. For more information on configuring COM 2, please refer to the Communications Settings web page on page 31.

Each port is designed to support up to a maximum of 32 devices without a repeater (see Figure 4–6). The RS-485 ports enable communications via a 4-wire plus shield or 2-wire plus shield cable (Tx+, Tx-, Rx+, Rx-, and GND).

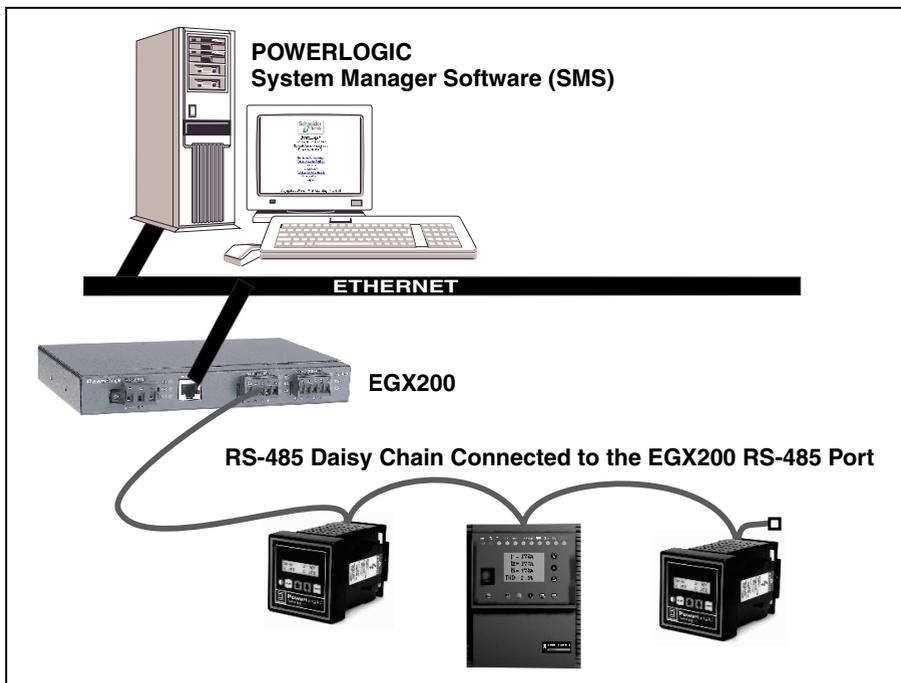


Figure 4–6: Daisy Chain Connected to EGX200 RS-485 Port

For communication wiring, we recommend the following cables:

- For 4-wire communication, use Belden 8723 or 9842 cable or equivalent.
- For 2-wire communication, use Belden 9841 cable or equivalent.

4-Wire Communication

For 4-wire communication using Belden 8723 cable, connect the wires to the terminal block, as shown in Figure 4-7. If using Belden 9842 cable, see Figure 4-8.

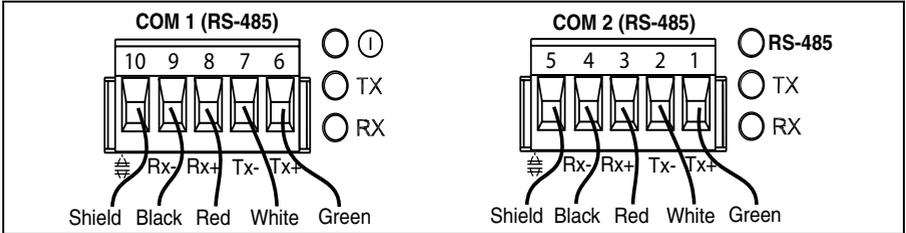


Figure 4-7: Communications wiring (4-wire) with Belden 8723 cable

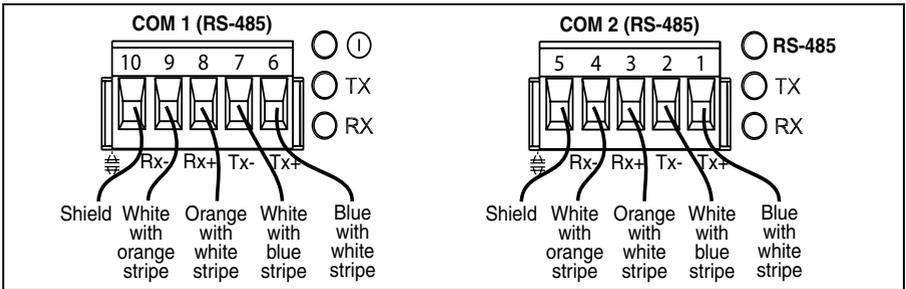


Figure 4-8: Communications wiring (4-wire) with Belden 9842 cable

2-Wire Communication

For 2-wire communication using Belden 9841, connect the white wire to terminal Tx- and the blue wire to terminal Tx+, as shown in Figure 4-9. 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 as shown.

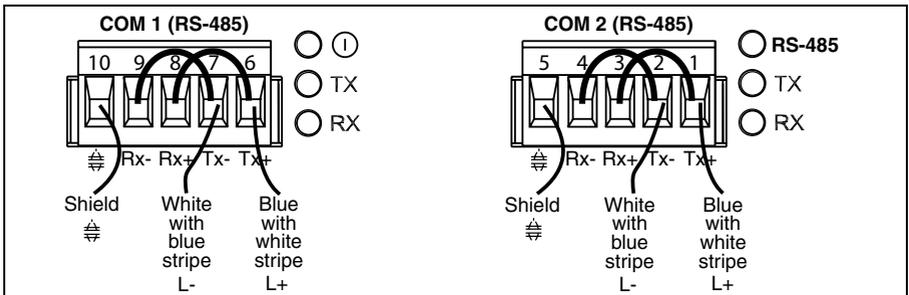


Figure 4-9: Communications wiring (2-wire) Belden 9841 cable

Daisy Chain Maximum Distances

The maximum daisy chain distance is determined by the baud rate and the types of RS-485 devices (2-wire/4-wire) on the daisy chain. The RS-485 ports will support daisy chains that fall within the specifications shown in Tables 4–1 and 4–2.

Table 4–1: 4-Wire Daisy Chain Maximum Distances^①

Baud Rate	Max distance for 1–16 devices	Max distance for 17–32 devices
1200	10,000ft (3,048m)	10,000ft (3,048m)
2400	10,000ft (3,048m)	5,000ft (1,524m)
4800	10,000ft (3,048m)	5,000ft (1,524m)
9600	10,000ft (3,048m)	4,000ft (1,219m)
19200	5,000ft (1,524m)	2,500ft (762m)
38400	5,000ft (1,524m)	1,500ft (457m)

^① Due to the volume of RS-485 devices in the field, this table is only to be used as a guide and was tabulated based on POWERLOGIC 4-wire devices and POWERLOGIC 4-wire devices that support 2-wire devices.

Table 4–2: 2-Wire Daisy Chain Maximum Distances^①

Baud Rate	Max distance for 1–8 devices	Max distance for 9–16 devices
1200	10,000ft (3,048m)	10,000ft (3,048m)
2400	10,000ft (3,048m)	5,000ft (1,524m)
4800	10,000ft (3,048m)	5,000ft (1,524m)
9600	10,000ft (3,048m)	4,000ft (1,219m)
19200	5,000ft (1,524m)	2,500ft (762m)
38400	2,500ft (762m)	1,500ft (457m)

^① Due to the volume of RS-485 devices in the field, this table is only to be used as a guide and was tabulated based on POWERLOGIC 4-wire devices and POWERLOGIC 4-wire devices that support 2-wire devices.

RS-232 Serial Port

RS-232 is used to configure the EGX200 network parameters, and also can be used for serial communication using Modbus RTU. The EGX200 RS-232 port uses a standard DB9 male connector. The following table shows the typical serial RS-232 connector pinout.

Table 4–3: RS-232 Pin Assignments (DB9 EGX200 Signal Set)

Pin No.	Description
Pin 1	Received Line Signal Detector (Data Carrier Detect)
Pin 2	Received Data
Pin 3	Transmit Data
Pin 4	Data Terminal Ready
Pin 5	Signal Ground
Pin 6	Data Set Ready
Pin 7	Request To Send
Pin 8	Clear To Send
Pin 9	Ring Indicator

COM 1 and COM 2 LEDs

One set of LEDs is provided for each COM port. A yellow LED illuminates when the corresponding COM port is receiving data (Rx). A green LED illuminates when data on the corresponding COM port is transmitted (Tx). Also, above the COM 2 Rx and Tx LEDs, a third LED (green) illuminates steadily when COM 2 is selected to be active for RS-485 communication. The COM 2 Tx and Rx LEDs behave the same way when used for either RS-485 or RS-232 communication.

Biassing and Termination

RS-485 Configuration

On RS-485 daisy chains, correct biasing is required to ensure reliable communication with field devices. The EGX200's dip switches for each RS-485 port provide flexibility in configuring the correct biasing. Figure 4–10 shows the biasing and termination label, as well as the typical dip switch settings for both 4-wire and 2-wire configurations.

In addition, the RS-485 daisy chain should be terminated to ensure reliable communication. The last device on the daisy chain usually needs a terminator (part number MCT-485 or MCTAS-485). Please refer to the instruction bulletin for the last device on the daisy chain to determine whether a terminator is required. If one is required, contact your local sales representative.

4-Wire Configuration

For RS-485, 4-wire configuration, the biasing and termination dip switches should be ON (switches 1, 2, 3, 4 for COM 2 and switches 7, 8, 9, and 10 for COM 1 — switches 5 and 6 are not used). The EGX200 is shipped with all dip switches in the ON position (default). Therefore, you do not need to change the dip switches unless a different termination or biasing is required.

2-Wire Configuration

For RS-485 2-wire communication, the biasing dip switches for Rx+ and Rx- should be ON. The termination dip switches for either Rx or Tx should be OFF. Therefore, either switch 7 or switch 8 should be OFF for COM 1, and either switch 1 or switch 2 should be OFF for COM 2.

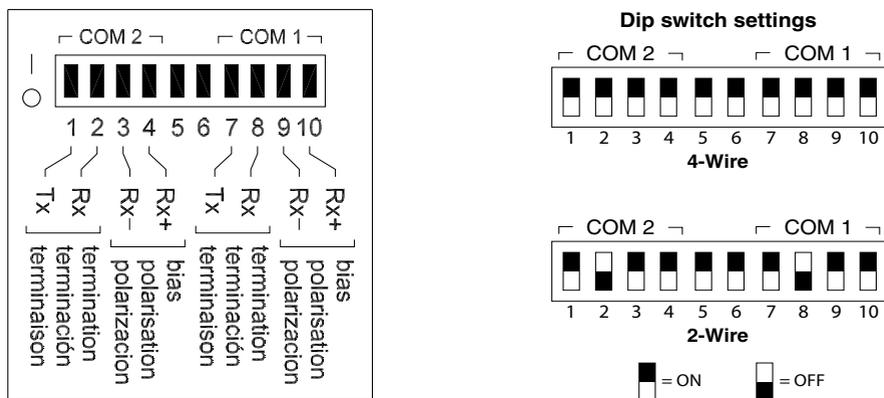


Figure 4–10: Biassing and Termination

Ethernet Ports

The EGX200 has one on-board 10/100BaseT Ethernet port. This port supports 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 or unshielded twisted pair.

Ethernet LEDs

The 10/100BaseT Ethernet port has one set of LEDs. The top LED is yellow, is marked LK (Link), and illuminates when there is a proper Ethernet physical connection. The bottom LED is yellow and illuminates when the EGX200 is receiving data (Rx). The middle LED is green and illuminates when data is transmitted (Tx).

CHAPTER 5—OPERATION

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ACCESSING THE EGX200 OVER A NETWORK

This section tells how to access the EGX200 over a network or the Internet. After you set up Ethernet parameters using HyperTerminal or a web browser, the EGX200 is accessible via an Ethernet LAN and a web browser such as Internet Explorer. The following section describes this process.

Logging into the EGX200

To log into the EGX200, follow these steps:

1. Launch your web browser (Microsoft's Internet Explorer v. 5.0 or higher).
2. In the address field (see Figure 5–1), type the IP address of the EGX200 (for example, 150.200.250.50), and press Enter.



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

The EGX200 Login page displays, as shown in Figure 5–2.

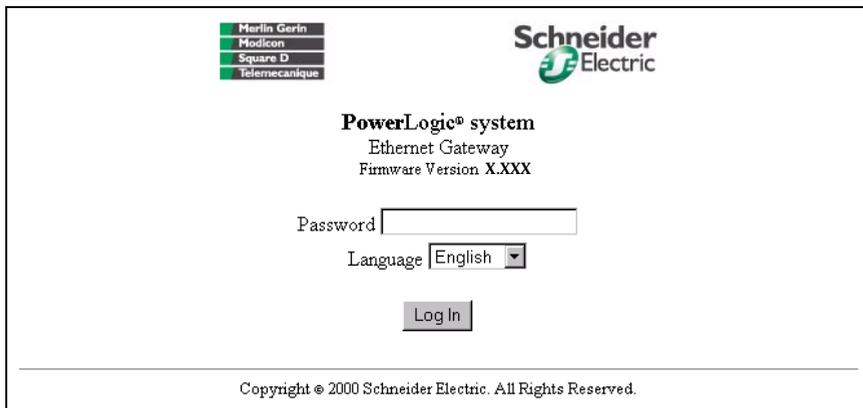


Figure 5–2: EGX200 Login page

3. For the Language, select the desired language from the pull-down menu.
4. Log into the EGX200, using one of the four defined passwords, and then click Log In. See “Password Administration” on page 36 for more information.

*NOTE: The default password is **admin** (all lower case). For system security, if you are the administrator, we recommend that you change the administrator password at this time (see “Password Administration” on page 36).*

The EGX200 Home page displays (see Figure 5–3). The list of available options depends on the level of access assigned in the password administration option.

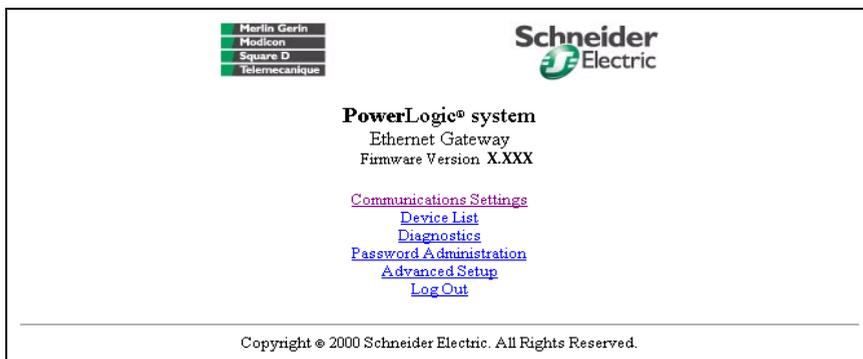


Figure 5–3: EGX200 Home page

EGX200 EMBEDDED WEB PAGE OPTIONS

The standard options shown on the EGX200 home page are summarized in Table 5–1. Following the table, each option is explained in more detail.

Table 5–1: EGX200 setup options

EGX200 Setup Options	Description	Page
Communication Settings	Set up or change Ethernet and serial communication parameters.	31
Device List	Identify serial devices on the daisy chain.	32
Diagnostics	View troubleshooting and miscellaneous EGX200 information.	35
Password Administration ^①	Configure or modify user passwords and access levels.	36
Advanced Setup ^①	Change timeout values (User timeout, COM 1, and COM 2), number of viewable devices, default language, and set time.	38
Log Out	Close EGX200 client session.	38

^①Accessible by administrator only

Communications Settings

Figure 5–4 shows the Communications Settings page, where you can change Ethernet and serial communications parameters here. After changing values, you must click the Update button for changes to take effect.

NOTE: After making changes and clicking Update, the EGX200 resets and the new settings go into effect. Because of this reset, you must log in to the EGX200 again by typing the IP address into the address field of your web browser and pressing Enter.

Communications Settings									
Ethernet			COM 1			COM 2			
MAC-00 80 67 80 0475									
IP Address			Baud Rate			Baud Rate			
150	200	250	50	9600 ▾			9600 ▾		
Subnet Mask			Parity			Parity			
255	255	255	0	Even ▾			Even ▾		
Router Address			Mode			Mode			
150	200	250	10	4 Wire ▾			4 Wire ▾		
						Port Selection			
						RS485 ▾			
<input type="button" value="Update"/>									
Home									

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Figure 5–4: Communications Settings page

Ethernet Port Setup via LAN

After you assign the initial IP address to the EGX200 through HyperTerminal or the web browser (refer to page 8), you can go to the Communications Settings web page via a standard web browser and change the EGX200 network setup (see Figure 5–4 on page 31). The following parameters are necessary for network setup and must be compatible with your network:

- IP address
- subnet mask
- router address

Serial COM Port Setup

The serial COM port setup information consists of the baud rate, parity, and wiring mode (see Table 5–2). The baud rate and parity must match the settings for attached RS-485 devices (all devices must have the same baud rate and parity settings). Set the mode according to whether your daisy chain is 2-wire or 4-wire. These ports are configured independently from each other and can have different settings.

Table 5–2: Serial Port Setup Parameters

Parameter	Options	Default Setting
Baud Rate	1200, 2400, 4800, 9600, 19200, 38400	9600
Parity	None, Even	Even
Mode	4-Wire, 2-Wire	4-Wire
Port Selection (COM 2 only)	RS-485, RS-232	RS-485

In addition, COM 2 can be set for either RS-232 or RS-485 communication. The default setting is RS-485.

Device List

Figure 5–5 on page 33 shows the Device List page, in which serial devices can be identified. Keep in mind the following points when setting up the Device List:

For COM 1 daisy-chain devices:

- MODBUS/JBUS devices do not have to be defined in the COM 1 column of the Device List, although it is recommended to help you manage your system.
- POWERLOGIC protocol (SY/MAX) devices must be defined in the COM 1 column of the Device List.

For COM 2 daisy-chain devices:

- All MODBUS/JBUS and POWERLOGIC devices must be defined.

NOTE: Each COM port device list column must be updated separately.

Table 5–3 shows the address range available for various protocols.

Table 5–3: RS-485 Device Definitions Address Range

Protocol	Available Device Address Range
MODBUS, JBUS	1 through 247
POWERLOGIC	1 through 199

NOTES:

- Do not assign address 16 to any MODBUS or JBUS device if you have a mixed-mode daisy chain (for example, a single daisy chain with some RS-485 devices using POWERLOGIC protocol and other devices using MODBUS/JBUS protocol).
- Do not assign address 1 to any POWERLOGIC protocol device on a mixed-mode daisy chain (for example, CM2000, CM100, CM200, 810 D, PIF85, PIF3, Digital Relay, and POWERLINK AS).
- Do not use the same address for any two devices on the two ports.
- We recommend that you wire and connect all MICROLOGIC trip units to COM 1. (Please refer to the MICROLOGIC Trip Unit instruction bulletin for proper addressing.)
- By default, this page displays 16 slots to define devices. For information on increasing the number of devices in the Device List page, see “Advanced Setup” on page 38.

Diagnostics

Figure 5–6 shows the Diagnostics page, which displays diagnostics data and may be helpful in troubleshooting network problems. This page also contains information about your specific EGX200, including the serial number, manufacturing date, and Media Access Control (MAC) address. Pressing Reset clears all cumulative counters.

The User Logins are shown at the bottom of the page. This tracks users since the EGX200 was last activated.

NOTE: This page shows accumulated readings since the EGX200 was last activated. If power to the EGX200 is lost, all values reset to zero.

Diagnostics			
<i>Firmware Version 1.517</i>			
Boot Time : Mon Jul 30 16:07:41 2001		Current Time : Mon Jul 30 18:07:31 2001	
COM 1		COM 2	
Timeouts	0	Timeouts	0
Checksum / CRC Errors	0	Checksum / CRC Errors	0
Protocol Errors	0	Protocol Errors	0
Outbound Read Messages	0	Outbound Read Messages	0
Outbound Write Messages	0	Outbound Write Messages	0
Inbound Read Messages	0	Inbound Read Messages	0
Inbound Write Messages	0	Inbound Write Messages	0
MBTCP		Ethernet	
Timeouts	0	CRC Errors	0
Checksum / CRC Errors	0	Alignment Errors	0
Protocol Errors	0	Code Errors	0
Outbound Read Messages	0	Long Frame Errors	0
Outbound Write Messages	0	Short/Run/Frame Errors	0
Inbound Read Messages	0	Maximum Collision	0
Inbound Write Messages	0	Card Information	
Active Inbound Connections	0	Processor Utilization	0%
Active Outbound Connections	0	MAC Address	00:80:67:80:04:75
Inbound Connections	0	Serial Number	43000008
Outbound Connections	0	Model Number	200
Maximum Inbound Connections	0	Hardware Version	A1
Maximum Outbound Connections	0	Manufacture Date	Jul 30, 2001
User Logins			
Admin User = 4	User 1 = 0	User 2 = 0	User 3 = 0
<input type="button" value="Reset"/>			
Home			
Copyright © 2000 Schneider Electric. All Rights Reserved.			

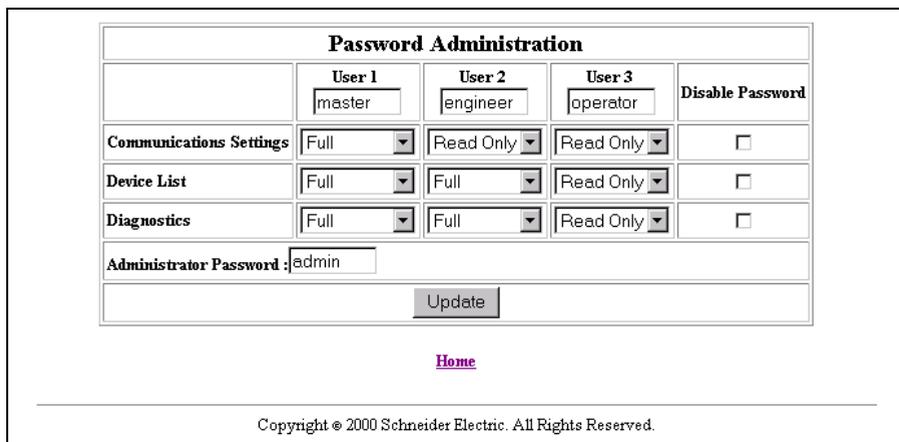
Figure 5–6: Diagnostics page

Password Administration

Figure 5–7 shows the Password Administration page. There are four password accounts on the page: one administrator password account and three user password accounts. The default passwords assigned to user accounts are:

master
engineer
operator

The passwords are configured by the administrator.



Password Administration				
	User 1	User 2	User 3	Disable Password
	<input type="text" value="master"/>	<input type="text" value="engineer"/>	<input type="text" value="operator"/>	
Communications Settings	<input type="text" value="Full"/>	<input type="text" value="Read Only"/>	<input type="text" value="Read Only"/>	<input type="checkbox"/>
Device List	<input type="text" value="Full"/>	<input type="text" value="Full"/>	<input type="text" value="Read Only"/>	<input type="checkbox"/>
Diagnostics	<input type="text" value="Full"/>	<input type="text" value="Full"/>	<input type="text" value="Read Only"/>	<input type="checkbox"/>
Administrator Password	<input type="text" value="admin"/>			
<input type="button" value="Update"/>				
Home				
Copyright © 2000 Schneider Electric. All Rights Reserved.				

Figure 5–7: Password Administration page

Administrator Account

The administrator account always grants the administrator full access to every web page available through the EGX200. When you log in as the administrator, you can change the administrator password. Only the administrator can access and change all passwords. The administrator password can be from zero to eight alphabetic characters and is case sensitive. The default administrator password is: **admin**

For system security, if you are the administrator, we recommended that you change this default password the first time you log in.

User Account

The default access levels for all user accounts are shown in Figure 5–7. The administrator can grant one of three access levels for each web page to each user: None, Read Only, and Full.

NOTE: Default values are displayed.

Up to 10 concurrent users can be logged into the EGX200 at any given time, using any combination of passwords. The administrator can configure the amount of time the EGX200 waits during an inactivity period before "expiring" access (see "Advanced Setup" on page 38).

During normal operations, we recommend that you return to the EGX200 home page and select "Log Out" when finished interfacing with the EGX200; doing so immediately releases that access privilege for another user.

The administrator can disable the password for any page. Disabling security for a page allows users to bookmark the page for quick access without going through the Login page.

Table 5–4 summarizes password accounts, default passwords, conventions, and access levels.

Table 5–4: Password Administration Summary

Password Account	Default Password	Convention ^①	Access
Administrator	admin	0–8 characters	Full access to all passwords and pages
User 1	master	0–8 characters	Choosing from the following options, the administrator assigns access levels for these pages: Communication Settings, Device List, and Diagnostics. Access levels are as follows: <ul style="list-style-type: none"> • None • Read Only • Full (same as Administrator access)
User 2	engineer	0–8 characters	
User 3	operator	0–8 characters	

^①Case-sensitive, alphabetic characters only

Advanced Setup

The Advanced Setup page (Figure 5–8) is accessible by the administrator password only. This page allows administrator level users to change EGX200 timing values that normally should not be changed. Also, you can use this page to set the EGX200 on-board clock. EGX200 parameters and corresponding values are shown in Table 5–5.

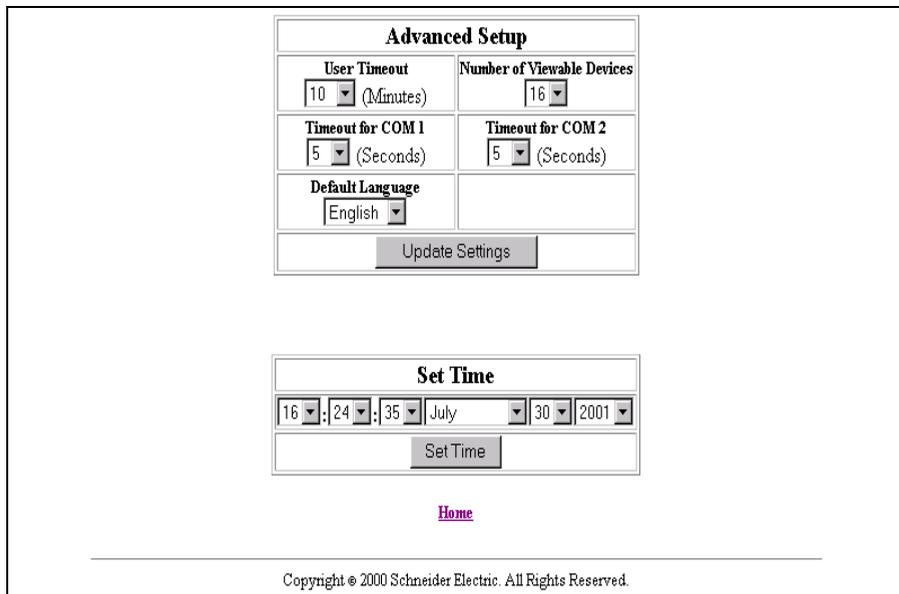


Figure 5–8: EGX200 Advanced Setup page

Table 5–5: Advanced communication setup parameters

Parameter	Range of Values	Description	Default
User Timeout	1 to 255 minutes	Maximum idle time allowed before the EGX200 ends a user's access to the web pages	10
Timeout for COM Ports	3 to 10 seconds	Maximum time the EGX200 waits for requested information from RS-485 daisy-chained devices	5
Number of Viewable Devices	2 to 96 devices	Number of viewable devices in the Device List	16
Default Language	English, French, Spanish	The language to be displayed as the default	English
Set Time		Current time and date of the EGX200	

Logging Out

To log out of the EGX200 configuration session, click Home to return to the EGX200 Home page. Click Log Out to end your session.

APPENDIX A—MAINTENANCE AND TROUBLESHOOTING

MAINTENANCE

The EGX200 does not require maintenance, nor does it contain any user-serviceable parts. If the EGX200 requires service, contact your local sales representative for help. Refer to the Technical Support Contacts provided in the shipping carton for a list of support phone numbers by country. Do not open the EGX200 enclosure; this will void the product warranty agreement.

 DANGER	
HAZARD OF ELECTRIC SHOCK, BURN, OR EXPLOSION	
<ul style="list-style-type: none"> • This equipment must be installed and serviced only by qualified personnel. • Qualified persons performing diagnostics or troubleshooting that require electrical conductors to be energized must comply with NFPA 70 E – Standard for Electrical Safety Requirements for Employee Workplaces and OSHA Standards – 29 CFR Part 1910 Subpart S – Electrical. 	
Failure to follow these instructions will result in death or serious injury.	

TROUBLESHOOTING

Potential problems, possible causes, and solutions are listed in Table A–1.

Table A–1: Troubleshooting

Problem	Possible Cause	Solution
Power LED is not lit.	Source power is not applied or is not stable.	Apply power or check power source.
	LED is burned out.	Check to see if other LEDs operate properly. If they do, contact your network administrator.
Ethernet link LED is not lit.	Proper link is not established.	Make sure the proper cable is used and connected.
SMS does not connect to the EGX200.	Incorrect IP address.	Enter correct IP address.
	Incorrect subnet mask or IP router address.	Enter correct subnet mask and/or IP router address.
	Incorrect network configuration.	Verify EGX200 receives requests (ping EGX200 by going to DOS prompt and typing "ping" and the EGX200 IP address, e.g., ping 199.0.62.41).
SMS does not go online with devices on EGX200.	EGX200 not functioning correctly or has configuration problems.	Verify that the EGX200 communication configuration matches the SMS configuration.
		Verify the device address is entered correctly in SMS.
Forgot administrator password.		Call your local sales representative for assistance.

APPENDIX B—FIRMWARE UPDATES

Due to technological improvements, the firmware your EGX200 was shipped with may be updated periodically. We recommend periodically checking with your local sales representative to see if an upgrade is available.

If an update becomes available, compare the updated version number with your version number shown on the EGX200 Home page. If the update is a newer version (has a higher version number), transfer it to your computer hard drive, taking note of the folder in which you place it.

To use FTP to transfer the firmware upgrade into your EGX200, follow these steps:

NOTE: In this example, we will assume that you saved the EGX200 new firmware update file into a folder called EGX, which is located on your C: drive.

1. Access DOS on your computer by selecting Start > Program > Command Prompt. The Command Prompt screen displays, as shown in the following figures.
2. Type the drive you want to access (in this case, **C:**), and press Enter.
3. Type **cd** (change directory) and the name of the folder containing the firmware file (in this example, the **egx** folder), and press Enter. (See Figure B–1.)

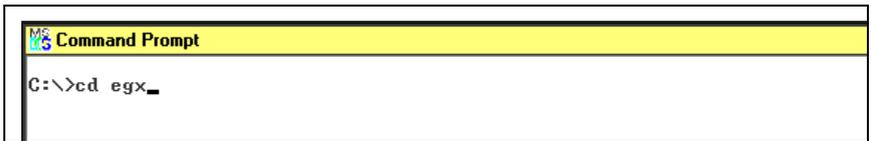
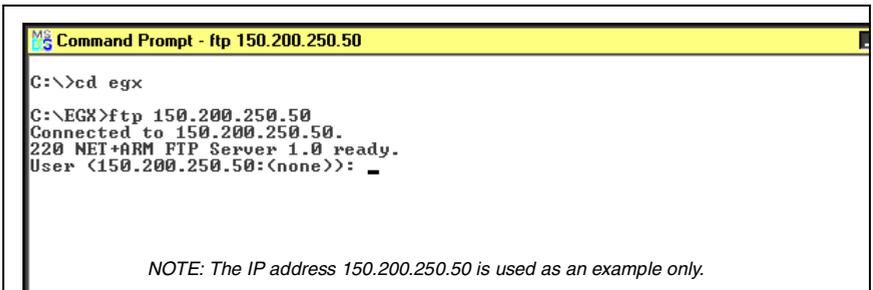


Figure B–1: Identifying folder where the EGX200 firmware file is stored

4. At the **C:\EGX** prompt, type **ftp** and the **IP address** assigned to the EGX200, and then press Enter, as shown in Figure B–2. The IP address 150.200.250.50 is used as an example only.



NOTE: The IP address 150.200.250.50 is used as an example only.

Figure B–2: Entering FTP session

You should receive the message “Connected to [IP address],” indicating you are now in an “ftp” session.

- At the **User [150.200.250.50: (none)]**: prompt, press Enter.
- At the **Password:** prompt (Figure B–3), type the administrator password (**admin** is the default password until the administrator changes it).

```
MS-DOS Command Prompt - ftp 150.200.250.50
C:\>cd egx
C:\egx>ftp 150.200.250.50
Connected to 150.200.250.50.
220 NET+ARM FTP Server 1.0 ready.
User (150.200.250.50:(none)):
331 User (none) OK, send password.
Password:
230 Password OK.
ftp>
```

NOTE: The IP address 150.200.250.50 is used as an example only.

Figure B–3: Password prompt

- At the **ftp** prompt (Figure B–4), type **send [egx#####.bin]**, and press Enter to initiate the ftp transfer. The filename you enter is case-sensitive.

NOTE: ##### refers to the EGX200 firmware version number.

```
MS-DOS Command Prompt - ftp 150.200.250.50
C:\EGX>ftp 150.200.250.50
Connected to 150.200.250.50.
220 NET+ARM FTP Server 1.0 ready.
User (150.200.250.50:(none)):
331 User (none) OK, send password.
Password:
230 Password OK.
ftp> send egx#####.bin
200 PORT command Ok.
150 About to open data connection.
226 Transfer complete
1048576 bytes sent in 6.50 seconds (161.32 Kbytes/sec)
ftp> quit
```

NOTE: The IP address 150.200.250.50 is used as an example only.

Figure B–4: File transfer completed

- When the download is complete (Figure B–4), the **ftp** prompt displays again. Type **quit** and press Enter to exit the FTP session.

APPENDIX C—COMMUNICATING with SMS USING the EGX200

This appendix provides instructions for using System Manager Software (SMS) to set up a PC interface with the EGX200.

NOTE: You must be running SMS version 3.2 or higher.

To communicate with SMS, follow these steps:

1. Launch SMS.
2. Open an existing system or create a new system.
3. Add a communication connection for the EGX200.
 - For the communications connection name, type a unique name for your EGX200 connection.
 - For the communications driver, select “MODBUS/TCP driver.”
4. Input the EGX200 IP address in the communication connection (MODBUS/TCP).
5. After defining the communications connection, add the serial daisy-chained devices using the EGX200 communication connection.

For more details about this process, please refer to the SMS Help option in SMS by going to SMS > Quick Start > Quick start MODBUS/TCP device setup.

APPENDIX D—SPECIFICATIONS

Table D-1: Specifications

CONTROL POWER INPUT SPECIFICATIONS	
Operating Input Range	24 Vdc ($\pm 10\%$)
Burden, maximum	8 Watts
Isolation	1.5 Kv
ENVIRONMENTAL SPECIFICATIONS	
Ambient Operating Temperature	-30° to $+80^{\circ}\text{C}$.
Storage Temperature	-40° to $+85^{\circ}\text{C}$.
Humidity Rating	5–95% Relative Humidity (non-condensing) at $+40^{\circ}\text{C}$
Pollution Degree	Class 2
PHYSICAL SPECIFICATIONS	
Weight	1.5 lbs. (.68 Kg)
Dimensions	Length (7.88 in. / 200.2 mm), Width (4.81 in. / 122.2 mm), Depth (1.07 in. / 27.2 mm)
REGULATORY/STANDARDS COMPLIANCE	
Electromagnetic Interference	
Radiated Emissions	EN 55022 / FCC Class A
Conducted Emissions	EN 55022 / FCC Class A
Immunity for Industrial Environments	
Electrostatic Discharge (Air Discharge)	EN 61000-4-2
Immunity to Surge (Impulse Wave)	EN 61000-4-5
Immunity to Electrical Fast Transients	EN 61000-4-4
Power Frequency Magnetic Field	EN 61000-4-8
Voltage Dips	EN 61000-4-11
Voltage Interruptions	EN 61000-4-11
Conducted Immunity	EN 61000-4-6
Radiated Immunity	EN 61000-4-3
Safety	
USA (Miscellaneous Apparatus)	UL 508
Canada (Industrial Equipment)	cUL (complies with CSA C22.2, #14–M91)
Europe	CE

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