A·B QUALITY

Allen-Bradley

*Ethernet PLC-5
Programmable
Controller*

*(Cat. No. 1785-L20E,
-L40E, -L80E)*

Quick Start

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation, and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

Reproduction of the contents of this copyrighted publication, in whole or in part, without written permission of Allen-Bradley Company, Inc., is prohibited.

Throughout this manual we use notes to make you aware of safety considerations:

> ⚠ **ATTENTION:** Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss.

Attention statements help you to:

- identify a hazard
- avoid the hazard
- recognize the consequences

Important: Identifies information that is critical for successful application and understanding of the product.

Preface

Read this preface to familiarize yourself with the rest of the manual. This preface covers the following topics:

- who should use this manual
- the purpose of this manual
- how to use this manual
- conventions used in this manual
- Rockwell Automation support

Who Should Use This Manual

To use this manual, you should understand programmable controllers and be able to interpret the ladder logic instructions required to control your application. For more information, see the documents listed on the following page or contact your local Rockwell Automation representative.

Purpose of This Manual

This manual is for users of the Ethernet PLC-5® processor. It:

- presents you with the basic information you need to get your system up and running
- provides "memory jogger" information, such as specific bit and switch settings for modules
- includes high-level procedures with cross-references to other manuals for more detail

How to Obtain a User Manual

There is a user manual associated with this product that contains detailed information about configuring, programming, and using a PLC-5 processor. To obtain a copy of the Enhanced and Ethernet PLC-5 Programmable Controllers User Manual, publication number 1785-6.5.12, you can either:

- view or download an electronic version from the internet: www.theautomationbookstore.com
- purchase a hardcopy from the internet: www.theautomationbookstore.com
- contact your local distributor or Rockwell Automation representative to place an order.

See the table on the next page for other related publications.

Related Documentation

The following documents contain additional information concerning the products discussed in this manual.

For more information about:	See this document:	Publication number:
Ethernet programmable controllers	Enhanced and Ethernet PLC-5 Programmable Controllers User Manual	1785-6.5.12
Universal 1771 I/O chassis	Universal I/O Chassis Installation Instructions	1771-2.210
power supply	Power Supply Modules (1771-P4S, -P6S, -P4S1, -P6S1) Installation Instructions	1771-2.135
DH+® network	Enhanced and Ethernet PLC-5 Programmable Controllers User Manual	1785-6.5.12
	Data Highway/Data Highway Plus/Data Highway II/Data Highway-485 Cable Installation Instructions	1770-6.2.2
communication cards	1784-KT*x* Communication Interface Card User Manual	1784-6.5.22
	Allen-Bradley Publication Index (for your specific communication card)	SD499
cables	Enhanced and Ethernet PLC-5 Programmable Controllers User Manual	1785-6.5.12
batteries	Allen-Bradley Guidelines for Lithium Battery Handling and Disposal	AG-5.4
grounding and wiring Allen-Bradley programmable controllers	Allen-Bradley Programmable Controller Wiring and Grounding Guidelines	1770-4.1
current Allen-Bradley documentation, including ordering instructions	Allen-Bradley Publication Index	SD499
terms and definitions	Allen-Bradley Industrial Automation Glossary	AG-7.1

Common Techniques Used in This Manual

We use the following conventions throughout this manual:

- Bulleted lists provide information, not procedural steps.
- Numbered lists provide sequential steps or hierarchical information.
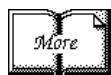
We use this symbol to indicate additional references you can use when you need more information about a particular topic.

Rockwell Automation Support

Rockwell Automation offers support services worldwide, with over 75 sales/support offices, 512 authorized distributors, and 260 authorized systems integrators located throughout the United States alone, plus Rockwell Automation representatives in every major country in the world.

Local Product Support

Contact your local Rockwell Automation representative for:

- sales and order support

- product technical training

- warranty support

- support service agreements

Technical Product Assistance

If you need to contact Allen-Bradley for technical assistance, call your local Allen-Bradley representative.

Your Questions or Comments about This Manual

If you discover a problem with this manual, please notify us of it by completing and sending the enclosed Publication Problem Report (at the back of this manual).

If you have any suggestions about how we can make this manual more useful to you, please contact us at the address below:

Allen-Bradley Company, Inc.
Automation Group
Technical Communication
1 Allen-Bradley Drive
Mayfield Heights, OH 44124-6118

Telephone: (440) 646-5000

FAX: (440) 646-4320

Table of Contents

Overview

This quick start is designed to provide you with the information you need to get your system up and running quickly. Use this document if you are knowledgeable about Ethernet PLC-5 products, but may not have used one or more of them recently. The information we provide is geared to "jog your memory".

What You Need to Do

If you need more information, see the Enhanced and Ethernet PLC-5 Programmable Controllers User Manual, publication number 1785-6.5.12 (see page P-1 for information about how to obtain a copy of this manual).

*Set up the Hardware
(Chapter 2)*
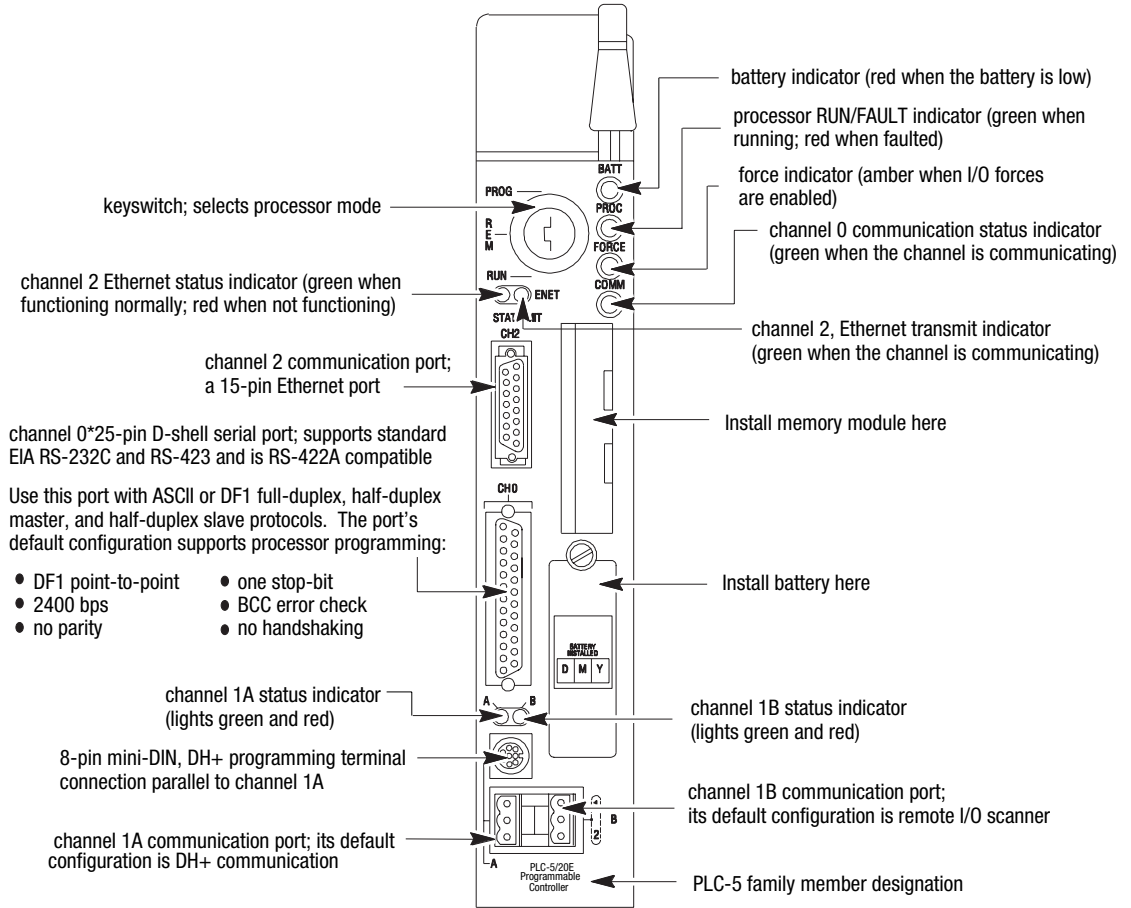
*Set up the Software
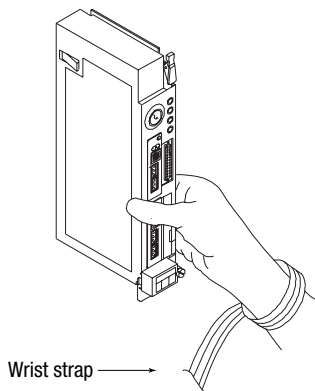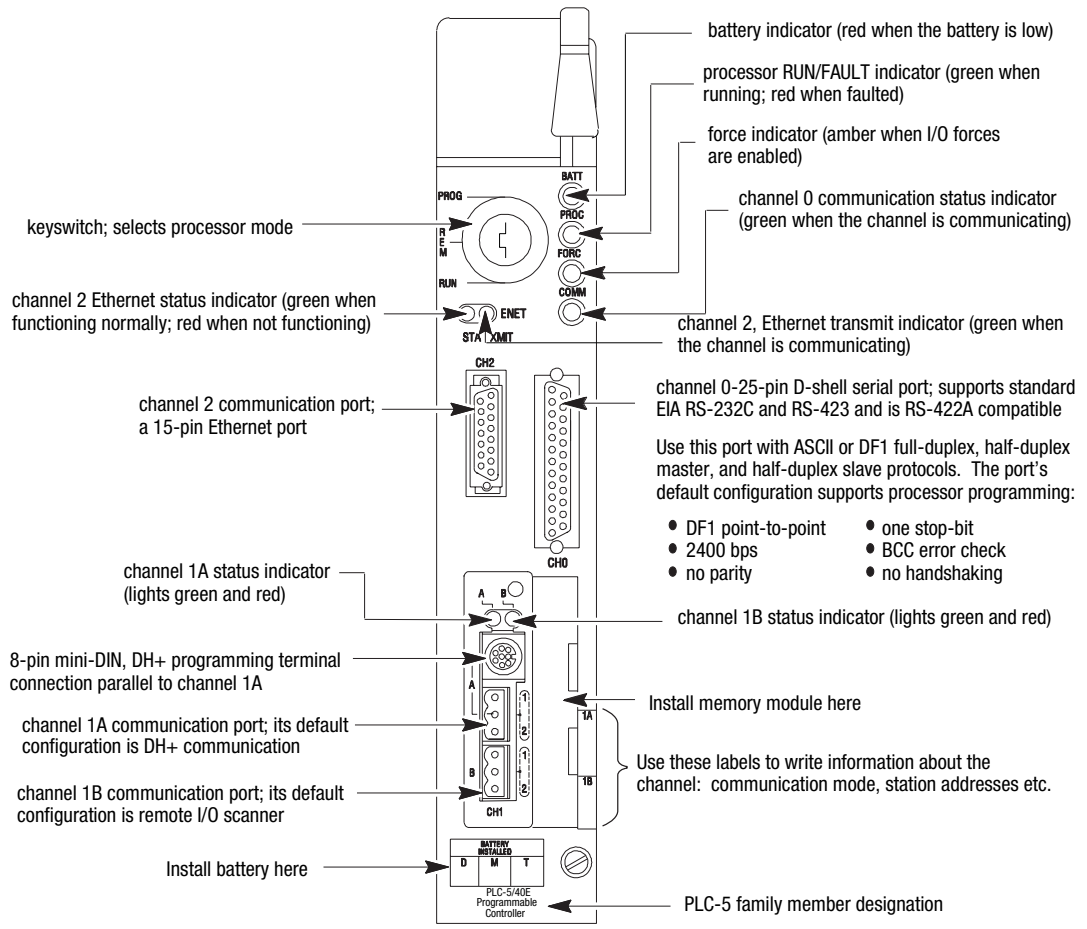(Chapter 3)*

*Troubleshoot the
Processor System
(Chapter 4)*

PC with
Programming
Software

PLC-5/20E   Internal
Processor   Power Supply

Data Highway
Plus

Identifying the Processor's Front Panel Components

These pictures show the Enhanced PLC-5 processor front panel components.

PLC-5/20E Processor Front Panel

battery indicator (red when the battery is low)

processor RUN/FAULT indicator (green when running; red when faulted)

force indicator (amber when I/O forces are enabled)

keyswitch; selects processor mode

channel 0 communication status indicator (green when the channel is communicating)

channel 2 Ethernet status indicator (green when functioning normally; red when not functioning)

channel 2 communication port; a 15-pin Ethernet port

channel 2, Ethernet transmit indicator (green when the channel is communicating)

channel 0*25-pin D-shell serial port; supports standard EIA RS-232C and RS-423 and is RS-422A compatible

Install memory module here

Use this port with ASCII or DF1 full-duplex, half-duplex master, and half-duplex slave protocols. The port's default configuration supports processor programming:

- DF1 point-to-point
- 2400 bps
- no parity
- one stop-bit
- BCC error check
- no handshaking

Install battery here

channel 1A status indicator (lights green and red)

channel 1B status indicator (lights green and red)

8-pin mini-DIN, DH+ programming terminal connection parallel to channel 1A

channel 1B communication port; its default configuration is remote I/O scanner

channel 1A communication port; its default configuration is DH+ communication

PLC-5 family member designation

PLC-5/20E Processor Front Panel

battery indicator (red when the battery is low)

processor RUN/FAULT indicator (green when running; red when faulted)

force indicator (amber when I/O forces are enabled)

channel 0 communication status indicator (green when the channel is communicating)

keyswitch; selects processor mode

channel 2 Ethernet status indicator (green when functioning normally; red when not functioning)

channel 2, Ethernet transmit indicator (green when the channel is communicating)

channel 2 communication port; a 15-pin Ethernet port

channel 0-25-pin D-shell serial port; supports standard EIA RS-232C and RS-423 and is RS-422A compatible

Use this port with ASCII or DF1 full-duplex, half-duplex master, and half-duplex slave protocols. The port's default configuration supports processor programming:

- DF1 point-to-point
- 2400 bps
- no parity
- one stop-bit
- BCC error check
- no handshaking

channel 1A status indicator (lights green and red)

channel 1B status indicator (lights green and red)

8-pin mini-DIN, DH+ programming terminal connection parallel to channel 1A

Install memory module here

channel 1A communication port; its default configuration is DH+ communication

Use these labels to write information about the channel: communication mode, station addresses etc.

channel 1B communication port; its default configuration is remote I/O scanner

Install battery here

PLC-5 family member designation

ATTENTION: Make sure you understand the anti-static environment.

The processor is shipped in a static-shielded container to guard against electrostatic damage. Electrostatic discharge can damage integrated circuits or semiconductors in the processor module if you touch backplane connector pins. It can also damage the module when you set configuration plugs or switches inside the module. Avoid electrostatic damage by observing the following precautions.

- Remain in contact with an approved ground point while handling the module (by wearing a properly grounded wrist strap).
- Do not touch the backplane connector or connector pins.
- When not in use, keep the module in its static-shielded container.

Wrist strap

Components You Need

Product name:	Catalog number:
Hardware	
Ethernet PLC-5 processor with 2 keys	1785-L20E, -L40E, -L80E
Lithium Battery (in a clear bag)	1770-XYC
I/O chassis	1771-A1B, -A2B, -A3B, -A3B1, -A4B
Power supply	1771-P4S, -P6S, -P4S1, -P6S1
Programming System	
PC	Check your programming software documentation for system requirements, such as memory, etc.
PLC-5 programming software	Choose a programming software package that is compatible with Ethernet PLC-5 processors.
communication module	Ethernet interface and interconnect cable

Important: In this manual, we assume you are using a brand-new Enhanced PLC-5 processor out of the box.

Compliance to European Union Directives

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) and the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2EMC – Generic Emission Standard, Part 2 – Industrial Environment
- EN 50082-2EMC – Generic Immunity Standard, Part 2 – Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 – Equipment Requirements and Tests.

For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the following Allen-Bradley publications:

- Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1
- Guidelines for Handling Lithium Batteries, publication AG-5.4
- Automation Systems Catalog

Set up the Hardware

1 *Install the hardware (page 2-2)*

2 *Connect the programming terminal and the PLC-5 processor to the communication card (page 2-6)*

PC with
Programming
Software

PLC-5/20E
Processor

Internal
Power Supply
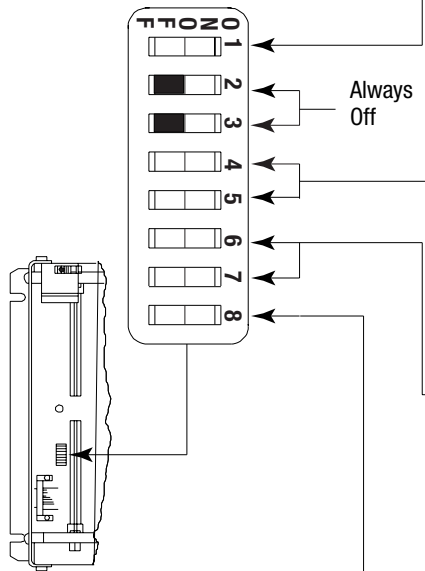
Data Highway
Plus or serial
cable
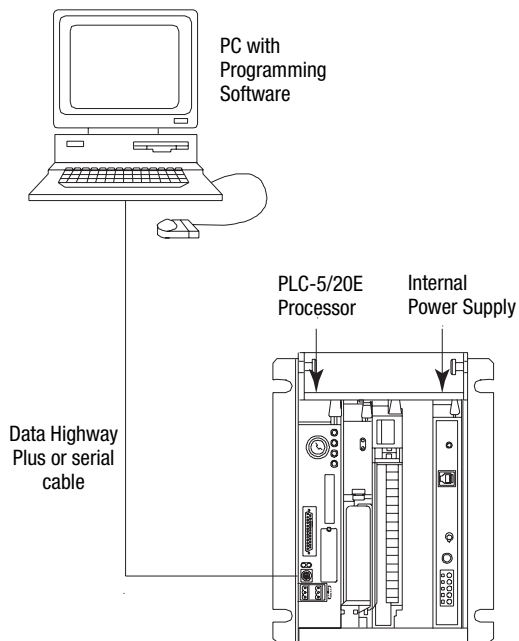
For more information, see the Enhanced and Ethernet User Manual, publication number 1785-6.5.12.

Install the Hardware

Configure the I/O Chassis

1 *Set the backplane switches.*

☐■ Pressed in
    at top ON (closed)

■☐ Pressed in
    at bottom OFF (open)

Always
Off

Switch	Last State
1	
on	Outputs of this I/O chassis remain in their last state when a hardware failure occurs. [1]
off	Outputs of this I/O chassis are turned off when a hardware failure occurs. [1]

Switches		Addressing
4	5	
off	off	2 - slot
off	on	1 - slot
on	off	1/2 - slot
on	on	Not allowed

Switches		EEPROM Transfer
6	7	
off	off	EEPROM memory transfer to processor memory at power-up. [2], [3]
on	on	EEPROM memory transfers to processor memory if processor memory not valid.
on	off	EEPROM memory does not transfer to processor memory. [4]

Switch	Processor Memory Protection
8	
off	Processor memory protection disabled.
on	Processor memory protection enabled. [5]

1 Regardless of this switch setting, outputs are turned off when any of the following occurs:
   - processor detects a runtime error
   - an I/O chassis backplane fault occurs
   - you select program or test mode
   - you set a status file bit to reset a local rack
2 If an EEPROM module is not installed and processor memory is valid, the processor's PROC LED indicator blinks, and the processor sets S:11/9, bit 9 in the major fault status word. To clear this fault, change the processor from program mode to run mode and back to program mode.
3 If the processor's keyswitch is set in REMote, the processor enters remote RUN after it powers up and has its memory updated by the EEPROM module.
4 A processor fault (solid red PROC LED) occurs if processor memory is not valid.
5 You cannot clear processor memory when this switch is on.

19309

2 *Set the power supply configuration jumper.*

3 *Install the keying bands.*

Are you using a power supply module in the chassis?

Y N

PLC-5/20 Processor

Keying Bands

2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
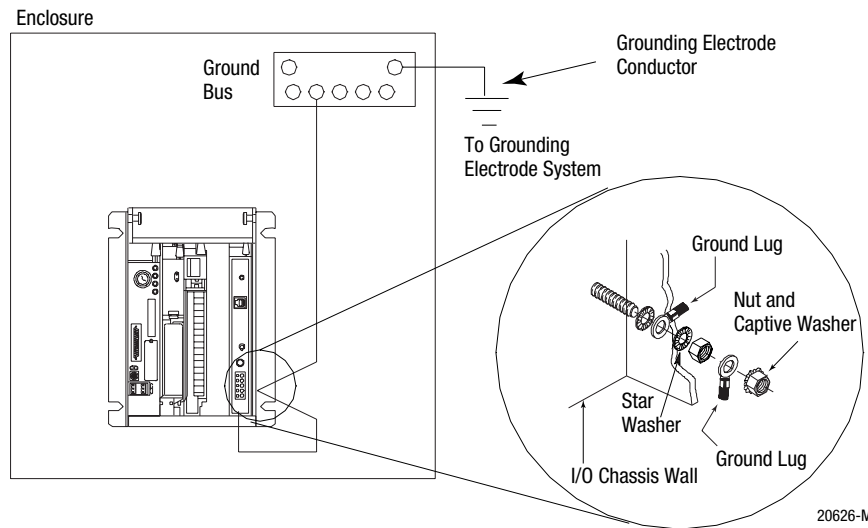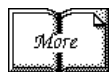40
42
44
46
48
50
52
54
56

YN

between
- 40 & 42
- 54 & 56
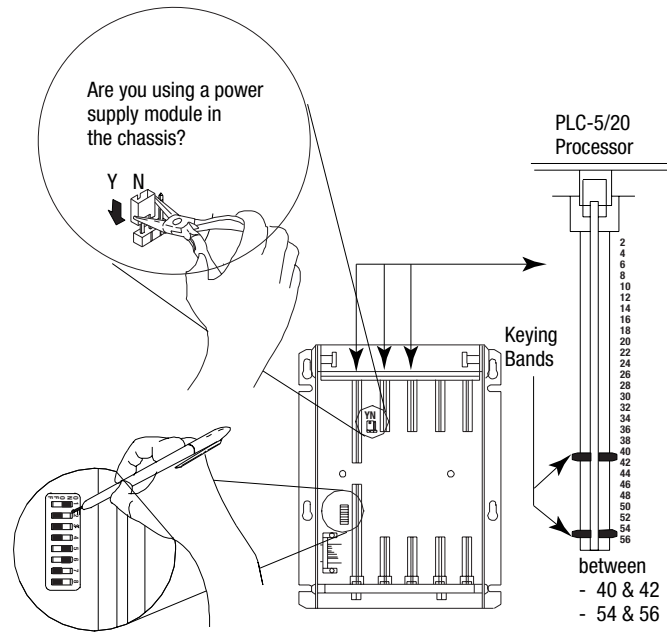
20609-M

For more information, see the Universal I/O Chassis installation instructions, publication number 1771-2.10.
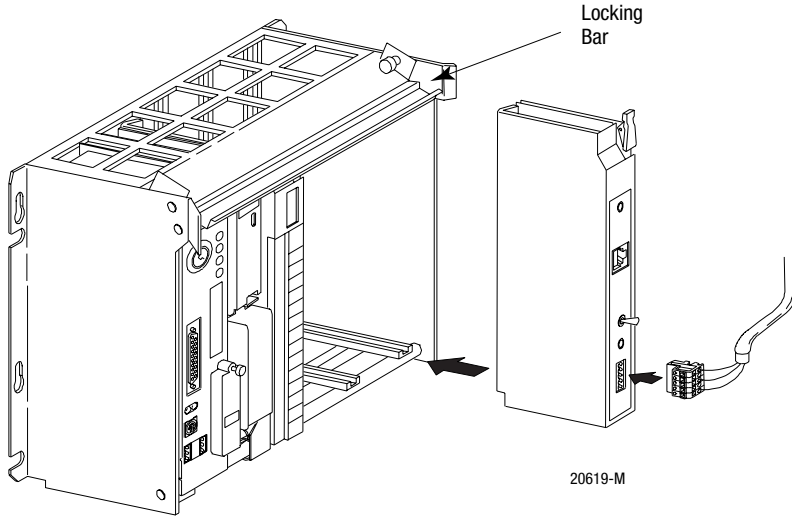
Ground the I/O Chassis

Enclosure

Ground Bus

Grounding Electrode Conductor

To Grounding Electrode System

Ground Lug

Nut and Captive Washer

Star Washer

Ground Lug

I/O Chassis Wall

20626-M

For more information, see the Allen-Bradley Programmable Controller Wiring and Grounding Guidelines, publication number 1770-4.1.

Install the Power Supply

1 *Set the jumpers on the back side of the power supply like this:*

Locking Bar

2 *Connect the power cord to the 120V ac connector of the power supply module.*

This side plugs into connector on the module.

insert wire here

insert wire here

or

place tool here

place tool here

20619-M

3 *Install the power supply in the chassis and snap the module-locking bar over the modules*
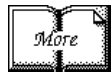
For more information, see the Power Supply Modules (1771-P4S, -P6S, -P4S1, -P6S1) Installation Instructions, publication number 1771-2.135 or the AC (120/220V) 16A Power Supply (1771-P7 Series B/C) Installation Instructions, publication number 1771-5.39.

Install the PLC-5 Processor

1 *Define the DH+ Station Address of Channel 1A by setting switch assembly SW-1.*

Side View of PLC-5/20E processors SW1

1 2 3 4 5 6 7

Always off

Side View of PLC-5/40E and -5/80E processors SW1

1 2 3 4 5 6 7

side view

down
57.6 Kbaud

up
230 Kbaud
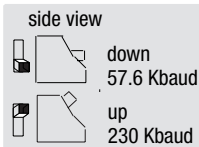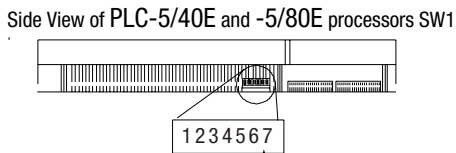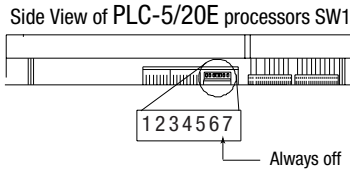
For series E and later processors:
use this switch to select baud rate
For series D and earlier processors:
this switch is always off

2 *Specify the serial communication of channel 0.*

Bottom view of PLC-5/20E processor switch assembly SW2

Front of Processor

1 2 3 4 5 6 7 8 9 10

Bottom view of PLC-5/40E and -5/80E processor switch assembly SW2

Front of Processor

side view

OFF

1 2 3 4 5 6 7 8 9 10
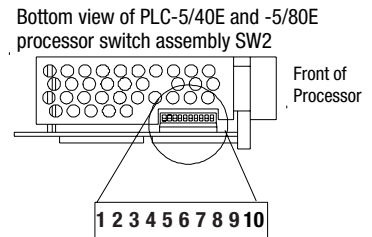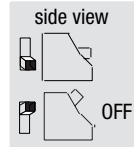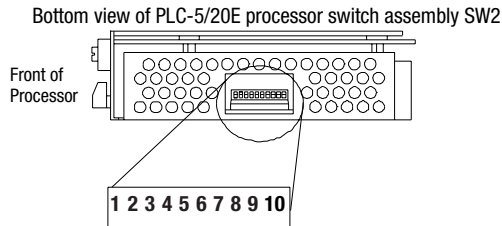
3 *Identify the Ethernet configuration jumper and hardware Ethernet address.*

Hardware Ethernet address label

ENET   802.3

Ethernet configuration jumper
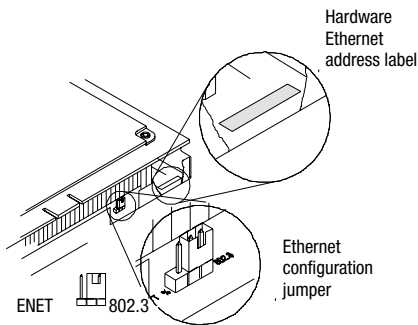
IMPORTANT: Do not change the Etherrnet configuration jumper default setting, which is set at 802.3.

Most Ethernet networks use the 802.3 standard; however if your Ethernet network is an older network and complies with the original Ethernet standard, then set the jumper to ENET.

The hardware Ethernet address label is located to the right of the Ethernet configuration jumper and shows the hardware Ethernet address assigned by Allen-Bradley.

4 *To install the battery, slide the battery-side connector into the processor-side connector until you hear them snap together, and attach the battery cover.*

5 *Install the processor module.*

Locking Bar

Eector Tab

PLC-5/20E Processor

Battery Connector

Battery Cover

+

Card Guides

−

Battery

20897-M
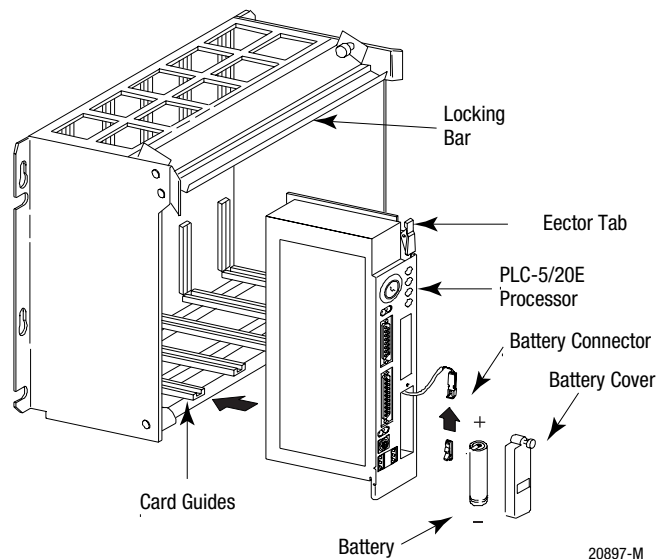
⚠ **ATTENTION:** To maintain CSA certification for hazardous areas, do not substitute any other battery for the 1770-XYC.
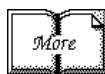
📖 *More*   For detailed information about handling and disposing of the battery as well as other important guidelines, see publication AG-5.4.

Power Up the System

Power up the system. Check the LED display on the processor. If your system is operating properly, the PROC LED should be steady red. If the PROC LED is not red, see chapter 4 for troubleshooting information before you install any I/O modules.

Install the I/O Modules

Locking Bar

Install each I/O module and connect the wiring arm.

Card Guides

20618-M
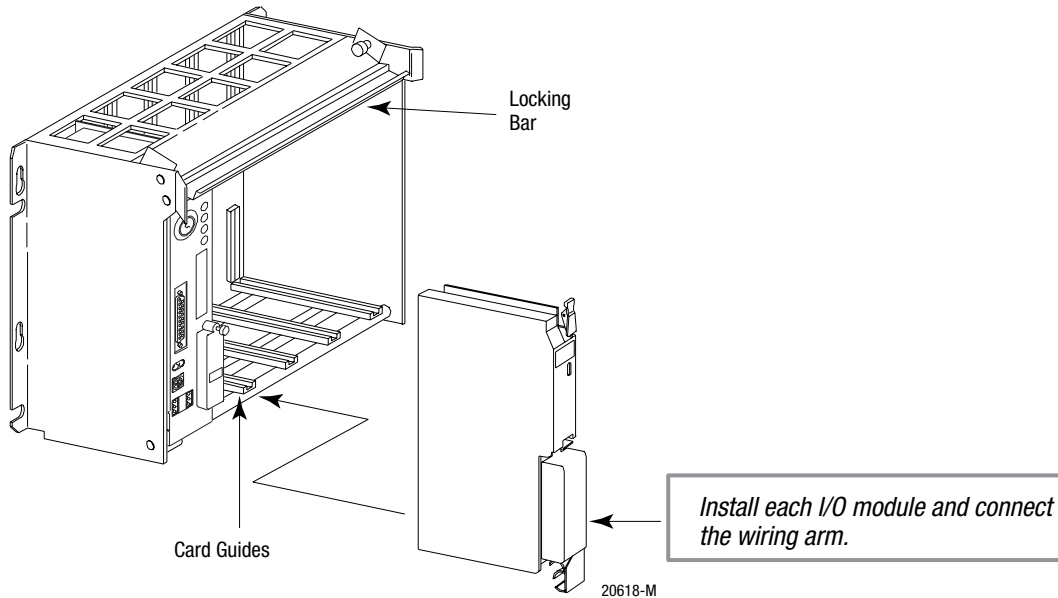
For more information, see the installation instructions or user manual for the particular module you are installing.

Connect the Personal Computer to the PLC-5 Processor

For more information, see:

- Enhanced and Ethernet PLC-5 Programmable Controller User Manual, publication number 1785-6.5.12

- the documentation provided with your communication card

- Data Highway/Data Highway Plus/Data Highway II/Data Highway 485 Cable Installation Manual, publication 1770-6.2.2

Set up the Software

1 *Install the software*

2 *Start the programming software*

3 *Powerup the system*
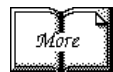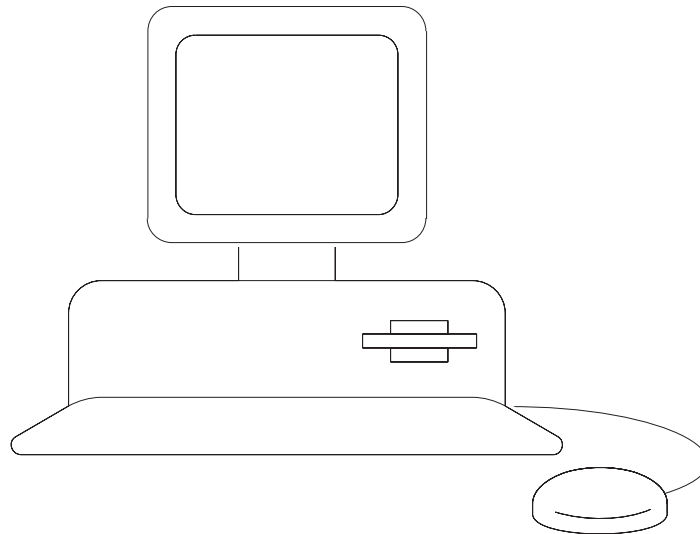
The following instructions are general. For specific information, see the documentation set for your particular software package.

Install the Software and Set Up the Programming System

Before you install your programming software, make certain you meet the system requirements for that software – sufficient disk space, memory, etcetera. Then, follow the procedures outlined in the software documentation to install the software and configure communication.

Start the Programming Software

Start the programming software by following the procedures described in your programming software documentation.

If you have difficulty, verify that the power supply is turned on.

To monitor your system as you configure and run it, check the processor LED display for the following indicators:

| This LED:	lights when:
COMM	you establish DH+ communication
BATT	no battery is installed or the battery voltage is low
REM I/O	you establish Remote I/O communication
ADAPT	the processor is in adapter mode
FORCE	forces are present in your ladder program

Power Up the System

Power up the system if you have not done so already. Check the LED display on the processor. If your system is operating properly, the PROC LED should be steady red and the message "`Processor RAM is faulted. Press <Enter> to clear memory`" should appear on the display. See the following table to proceed. If the PROC LED is not red, turn to chapter 4 for troubleshooting information.

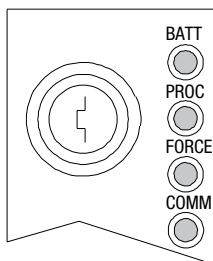| If your keyswitch is in this position:	do this:
PROGRAM	Clear memory. The PROC LED should turn off. The software is in Program mode.
REMOTE	Clear memory. The PROC LED should turn off. The software is in Remote Program mode.
RUN	You see the message "`No access or privilege violation`" because you cannot clear memory in Run mode. Change the keyswitch position to Program or Remote and press <Enter> to clear memory.

Troubleshoot the Processor System

1 *Use the PLC-5 Processor Status Indicators (page 4-1)*
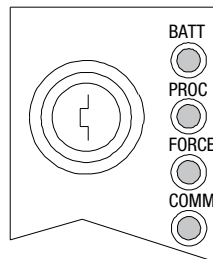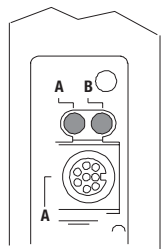
Use the PLC-5 Processor Status Indicators

Troubleshoot General Problems

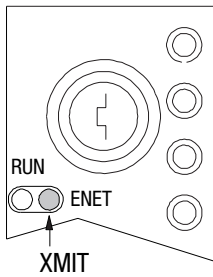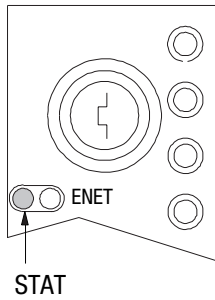| Indicator	Color	Description	Probable Cause	Recommended Action
BATT	Red	Battery low	Battery low	Replace battery within 10 days
	Off	Battery is good	Normal operation	No action required
PROC	Green (steady)	Processor is in run mode and fully operational	Normal operation	No action required
	Green (blinking)	Processor memory is being transferred to EEPROM		
	Red (blinking)	Major fault	Run-time error	• Check major fault bit in status file (S:11) for error definition • Clear fault bit, correct problem, and return to run mode
	Red (steady)	Major fault	• Processor memory has checksum error • Memory module error • Internal diagnostics have failed	• Clear memory and reload program • Check backplane switch settings and/or insert correct memory module • Power down, reseat processor and power up; then, clear memory and reload your program. Replace EEPROM with new program; then, if necessary, replace the processor
	Off	Processor is in program load or test mode or is not receiving power		Check power supply and connections

Indicator	Color	Description	Probable Cause	Recommended Action
FORCE	Amber (steady)	SFC and/or I/O forces enabled	Normal operation	No action required
	Amber (blinking)	SFC and/or I/O forces present but not enabled		
	Off	SFC and/or I/O forces not present		
COMM	Off	No transmission on channel 0	Normal operation if channel is not being used	
	Green (blinking)	Transmission on channel 0	Normal operation if channel is being used	

Troubleshoot the Processor Communication Channels

Indicator	Color	Channel Mode	Description	Probable Cause	Recommended Action
A or B	Green (steady)	Remote I/O Scanner	Active Remote I/O link, all adapter modules are present and not faulted	Normal operation	No action required
		Remote I/O Adapter	Communicating with scanner		
		DH+	Processor is transmitting or receiving on DH+ link		
	Green (blinking rapidly or slowly)	Remote I/O Scanner	At least one adapter is faulted or has failed	• Power off at remote rack • Cable broken	• Restore power to the rack • Repair cable
		DH+	No other nodes on network		
	Red (steady)	Remote I/O Scanner Remote I/O Adapter DH+	Hardware fault	Hardware error	• Turn power off, then on. • Check that the software configurations match the hardware set-up. • Replace the processor.
	Red (blinking rapidly or slowly)	Remote I/O Scanner	Faulted adapters detected	• Cable not connected or is broken • Power off at remote racks	• Repair cable • Restore power to racks
		DH+	Bad communication on DH+	Duplicate node detected	Correct station address
	Off	Remote I/O Scanner Remote I/O Adapter DH+	Channel offline	Channel is not being used	Place channel online if needed

Troubleshoot the Ethernet Status Indicators

Indicator	Color	Description	Probable Cause	Recommended Action
STAT	Solid red	Critical hardware fault	Processor requires internal repair	Contact Allen-Bradley Global Technical Support (GTS)
	Blinking red	Hardware or software fault (detected and reported via a code)	Fault-code dependent	Contact Allen-Bradley GTS
	Off	Ethernet interface is functioning properly but it is not attached to an active Ethernet network	Normal operation	Attach the processor to an active Ethernet network
	Green	Ethernet channel 2 is functioning properly and has detected that it is connected to an active Ethernet network	Normal operation	No action required
XMIT	green	lights (green) briefly when the Ethernet port is transmitting a packet. It does not indicate whether or not the Ethernet port is receiving a packet.		

Specifications

General

This table lists general specifications.

Backplane Current	3.6A
Heat Dissipation	65.00 BTU/hr
Environmental Conditions	Operating Temperature. . . . . . . 0 to 60° C (32-140° F) Storage Temperature . . . . −40 to 85° C (−40 to 185° F) Relative Humidity . . . . 5 to 95% (without condensation)
Shock	Operating . . . . . . 30 g peak acceleration for 11±1 ms duration Non-operating . . . 50 g peak acceleration for 11±1 ms duration
Vibration (operating and non-operating)	1 g @ 10 to 500 Hz 0.012 inches peak-to-peak displacement
Time-of-Day Clock/Calendar[1]	Maximum Variations at 60° C. . ± 5 min per month Typical Variations at 20° C. . . . ± 20 s per month Timing Accuracy. . . . . 1 program scan
Battery	1770-XYC
Memory Modules	1785-ME16 1785-ME64 1785-ME32 1785-M100
Typical Discrete I/O Scan	• 0.5 ms / extended-local I/O adapter • 10 ms / remote I/O rack at 57.6 kbps • 7 ms / remote I/O rack at 115.2 kbps • 3 ms / remote I/O rack at 230.4 kbps
I/O Modules	Bulletin 1771 I/O including 8-, 16-, 32-pt, and intelligent modules
Hardware Addressing	2-slot • Any mix of 8-pt modules • 16-pt modules must be I/O pairs • No 32-pt modules 1-slot • Any mix of 8- or 16-pt modules • 32-pt modules must be I/O pairs 1/2-slot – Any mix of 8-,16-, or 32-pt modules

[1]   Please note that the Clock/Calendar will update appropriately each year, including the year 2000.

General Specifications (continued)

Communication	• DH+ (trunk line: 3,048 cable-m (10,000 cable-ft); drop line: 30.4 cable-m (100 cable-ft) • DH using 1785-KA • Serial • Ethernet (TCP/IP protocol, 15-pin, AUI transceiver port) • remote I/O
Location	1771-A1B, -A2B, A3B, -A3B1, -A4B, chassis, left-most slot
Keying	• Between 40 and 42 • Between 54 and 56
Weight	PLC-5/20E　　1.43 kg (3.2 lbs) PLC-5/40E　　1.39 kg (3.1 lbs) PLC-5/80　　1.38 kg (3.0 lbs)
Agency Certification (when product is marked)	• CSA Class I, Division 2, Groups A, B, C, D • UL listed • CE marked for all applicable directives

Processor Specifications

This table lists specifications of each Ethernet PLC-5 family processor.

Processor/ Cat. No.	Maximum User Memory Words	Maximum I/O	Types of Communication Ports	Maximum Number of I/O Racks	Maximum Number of I/O Chassis		
PLC-5/20E (1785-L20E)	16K	• 512 (any mix) or • 512 in + 512 out (complementary)	• 1 DH+ (Fixed) • 1 DH+/Remote I/O (Adapter or Scanner) • 1 serial port, configurable for RS-232 and 423 and RS-422A compatible • 1 channel Ethernet only	4 (0-3)	13	0	12
PLC-5/40E (1785-L40E)	48 K[1]	• 2048 (any mix) or • 2048 in + 2048 out (complementary)	• 2 DH+/Remote I/O (Adapter or Scanner) • 1 channel Ethernet only • 1 serial port, configurable for RS-232 and 423 and RS-422A compatible	16 (0-17)	61	0	60
PLC-5/80E (1785-L80E)	100 K[2]	• 3072 (any mix) or • 3072 in + 3072 out (complementary)	• 2 DH+/Remote I/O (Adapter or Scanner) • 1 serial port, configurable for RS-232 and 423 and RS-422A compatible • 1 channel Ethernet only	24 (0-27)	65	0	64

[1]　The PLC-5/40E processors have a limit of 32K words per data table file.

[2]　The PLC-5/80E processors have 64K words of total data table space with a limit of 56K words per program file and 32K words per data table file.

Battery Specification

Battery Type

Ethernet PLC-5 processors use 1770-XYC batteries which contain 0.65 grams of lithium.

Average Battery Lifetime Specifications

Battery used in this processor:	At this temperature:	Worst-case Battery Life Estimates		Battery Duration after the LED lights[1]
		Power off 100%:	Power off 50%:	
PLC-5/20E	60°C	256 days	1.4 years	11.5 days
	25°C	2 years	4 years	47 days
PLC-5/40E, -5/80E	60°C	84 days	150 days	5 days
	25°C	1 year	1.2 years	30 days

[1] The battery indicator (BATT) warns you when the battery is low. These durations are based on the battery supplying the only power to the processor (power to the chassis is off) once the LED first lights.

CSA Hazardous Location Approval	Approbation d'utilisation dans des emplacements dangereux par la CSA
CSA certifies products for general use as well as for use in hazardous locations. **Actual CSA certification is indicated by the product label** as shown below, and not by statements in any user documentation.	La CSA certifie les produits d'utilisation générale aussi bien que ceux qui s'utilisent dans des emplacements dangereux. **La certification CSA en vigueur est indiquée par l'étiquette du produit** et non par des affirmations dans la documentation à l'usage des utilisateurs.
Example of the CSA certification product label CL 1 DIV 2 GP A,B,C,D TEMP	Exemple d'étiquette de certification d'un produit par la CSA CL 1 DIV 2 GP A,B,C,D TEMP
To comply with CSA certification for use in hazardous locations, the following information becomes a part of the product literature for CSA-certified Allen-Bradley industrial control products. • This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D, or non-hazardous locations only. • The products having the appropriate CSA markings (that is, Class I Division 2, Groups A, B, C, D), are certified for use in other equipment where the suitability of combination (that is, application or use) is determined by the CSA or the local inspection office having jurisdiction.	Pour satisfaire à la certification de la CSA dans des endroits dangereux, les informations suivantes font partie intégrante de la documentation des produits industriels de contrôle Allen-Bradley certifiés par la CSA. • Cet équipement convient à l'utilisation dans des emplacements de Classe 1, Division 2, Groupes A, B, C, D, ou ne convient qu'à l'utilisation dans des endroits non dangereux. • Les produits portant le marquage approprié de la CSA (c'est à dire, Classe 1, Division 2, Groupes A, B, C, D) sont certifiés à l'utilisation pour d'autres équipements où la convenance de combinaison (application ou utilisation) est déterminée par la CSA ou le bureau local d'inspection qualifié.
Important: Due to the modular nature of a PLC control system, the product with the highest temperature rating determines the overall temperature code rating of a PLC control system in a Class I, Division 2 location. The temperature code rating is marked on the product label as shown.	**Important:** Par suite de la nature modulaire du système de contrôle PLC, le produit ayant le taux le plus élevé de température détermine le taux d'ensemble du code de température du système de contrôle d'un PLC dans un emplacement de Classe 1, Division 2. Le taux du code de température est indiqué sur l'étiquette du produit.
Temperature code rating CL 1 DIV 2 GP A,B,C,D TEMP ← Look for temperature code rating here	Taux du code de température CL 1 DIV 2 GP A,B,C,D TEMP ← Le taux du code de température est indiqué ici
The following warnings apply to products having CSA certification for use in hazardous locations.	Les avertissements suivants s'appliquent aux produits ayant la certification CSA pour leur utilisation dans des emplacements dangereux.
⚠ **ATTENTION:** Explosion hazard – • Substitution of components may impair suitability for Class I, Division 2. • Do not replace components unless power has been switched off or the area is known to be non-hazardous. • Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous. • Do not disconnect connectors unless power has been switched off or the area is known to be non-hazardous. Secure any user-supplied connectors that mate to external circuits on an Allen-Bradley product using screws, sliding latches, threaded connectors, or other means such that any connection can withstand a 15 Newton (3.4 lb.) separating force applied for a minimum of one minute.	⚠ **AVERTISSEMENT:** Risque d'explosion – • La substitution de composants peut rendre ce matériel inacceptable pour les emplacements de Classe I, Division 2. • Couper le courant ou s'assurer que l'emplacement est désigné non dangereux avant de remplacer les composants. • Avant de débrancher l'équipement, couper le courant ou s'assurer que l'emplacement est désigné non dangereux. • Avant de débrancher les connecteurs, couper le courant ou s'assurer que l'emplacement est reconnu non dangereux. Attacher tous connecteurs fournis par l'utilisateur et reliés aux circuits externes d'un appareil Allen-Bradley à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens permettant aux connexions de résister à une force de séparation de 15 newtons (3,4 lb. - 1,5 kg) appliquée pendant au moins une minute.

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If you find a problem with our documentation, please complete and return this form

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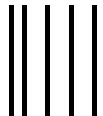Cat. No. **1785-L20E, -L40E, -L80E** Pub. No. **1785-10.5** Pub. Date **November 1998** Part No. **955133-86**

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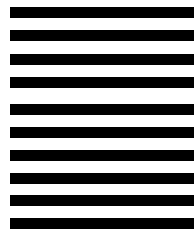
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Rockwell Automation Headquarters, 1201 South Second Street, Milwaukee, WI 53204 USA, Tel: (1) 414 382-2000, Fax: (1) 414 382-4444
Rockwell Automation European Headquarters SA/NV, avenue Herrmann Debrouxlaan, 46, 1160 Brussels, Belgium, Tel: (32) 2 663 06 00, Fax: (32) 2 663 06 40
Rockwell Automation Asia Pacific Headquarters, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846