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Allen-Bradley

Mini-PLC-2 Family Programmable Controllers

Quick Start for Experienced Users

product icon

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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.

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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.

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Preface

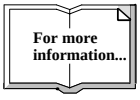
Using this Quick Start

This quick start is designed to help you quickly install and connect a basic mini-PLC-2 family programmable controller system. Use this guide if you are knowledgeable about mini-PLC-2 family products but may not have used one or more of the products for a period of time. The information we provide is geared to "jog your memory."

What You Need to Do

step 1 *Install I/O chassis*

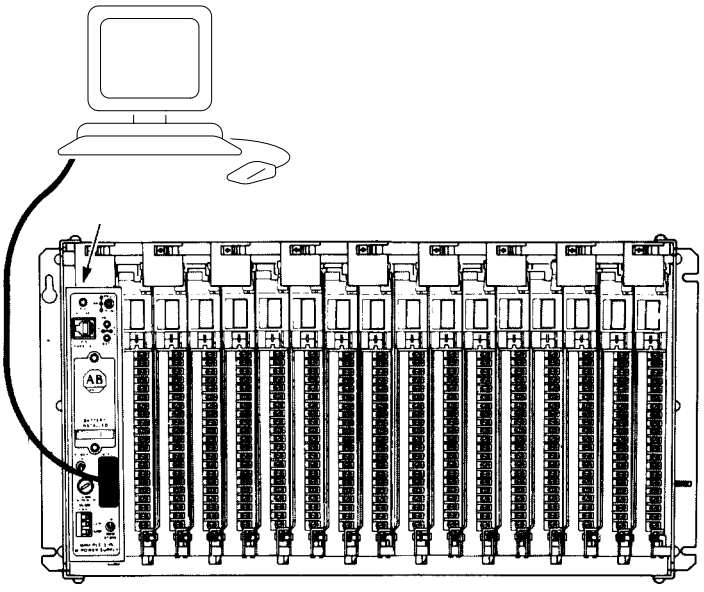
- a *Configure I/O chassis (page 1-1)*
- b *Ground I/O chassis (page 1-2)*



For more information, see the Mini-PLC-2/02, -2/16, -2/17 Processor User Manual, publication 1772-6.5.8.

step 2 *Install I/O*

- a *Install field wiring arms (page 2-1)*
- b *Install I/O modules (page 2-1)*



step 3 *Install Memory Module*

- a *Install backup battery (page 3-1)*
- b *Install memory module (page 3-1)*

step 4 *Install Processor and Power Supply*

- a *Install processor (page 4-1)*
- b *Install power supply (page 4-1)*

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step 5 *Make power connections*

a *Connect power to processor (page 5-1)*

b *Connect power supply (page 5-1)*

step 6 *Connect programming terminaal (page 6-1)*

System Components used in this Quick Start

Product name:	Catalog number:
I/O chassis	1771-A1B, -A2B, -A3B, -A3B1, -A4B, -A1, -A2, -A4
power supply	1771-P3, -P4, -P5, -P7
I/O modules	1771 product line
programming terminal	1770-T3 series C, IBM PC-compatible computer using 6200 series or AI PLC-2 programming software
processors	1772-LZ, -LZP, -LX, -LXP, -LW, -LWP, -LS, -LSP
memory modules	1775-MJ, 1772-MJ

If You Need Help ...



If you need additional assistance in installing or connecting your mini-PLC-2 family programmable controller system, call 1-800-9-NEWLIT to order one of the publications suggested below or contact your Allen-Bradley service representative.

Publication title:	Publication number:
Mini-PLC-2/15 Programmable Controllers Assembly and Installation Manual	1772-6.6.1
Mini-PLC-2 Programmable Controllers Assembly and Installation Manual	1772-6.6.3
Mini-PLC-2/05 Programmable Controllers Assembly and Installation Manual	1772-6.6.6
Mini-PLC-2/05 Programmable Controllers Assembly and Installation Manual Documentation Update	1772-6.6.6-DU1
Mini-PLC-2/02, -2/16, -2/17, Processor User Manual	1772-6.5.8
1772-Mini-PLC-2/05 Processor Programming and Operations Manual	1772-6.8.6
Mini-PLC-2 Programmable Controllers Programming and Operations Manual	1772-6.8.4
Mini-PLC-2/15 Programmable Controllers Programming and Operations Manual	1772-6.8.2

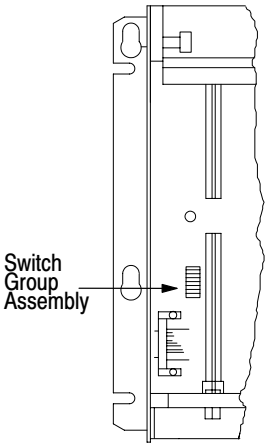
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Configure and Ground I/O Chassis

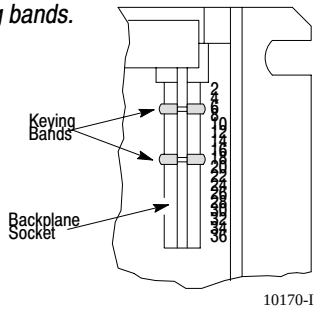
Configure I/O Chassis

a *Set the backplane switches.*

See the installation manual for your particular processor for specific switch-setting information.



b *Install keying bands.*

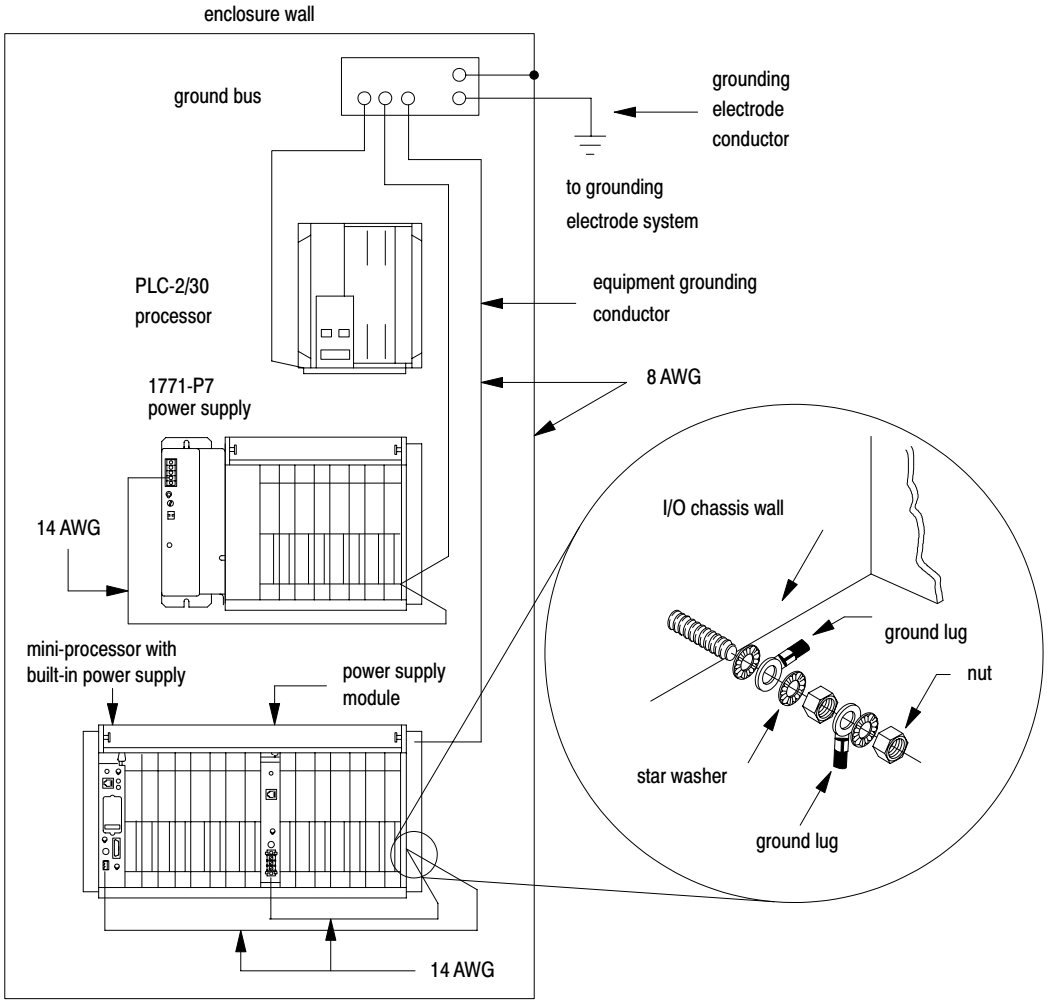


See the appropriate product data for the module you are installing to determine the proper keying positions for each module.

Insert two keying bands in the top backplane connectors of the I/O chassis. For the processor, place one keying band in the left-most slot between pins 46 and 48 and 54 and 56.

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Ground I/O Chassis

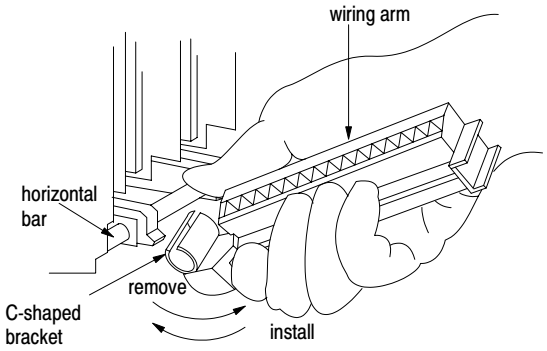


ATTENTION: If you use this grounding configuration, do not make connections to EQUIP GND on the power supply terminal strips or ground loops could result.

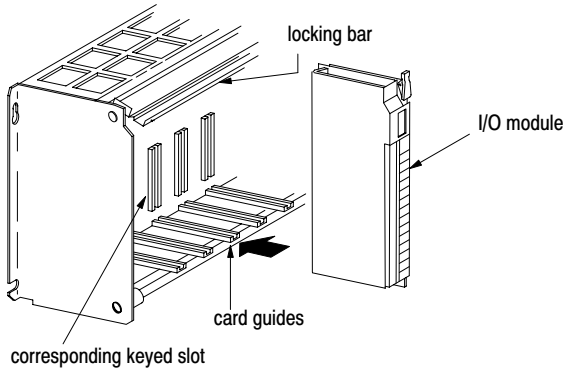
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Install I/O Modules

Install Field Wiring Arms



Install I/O Modules

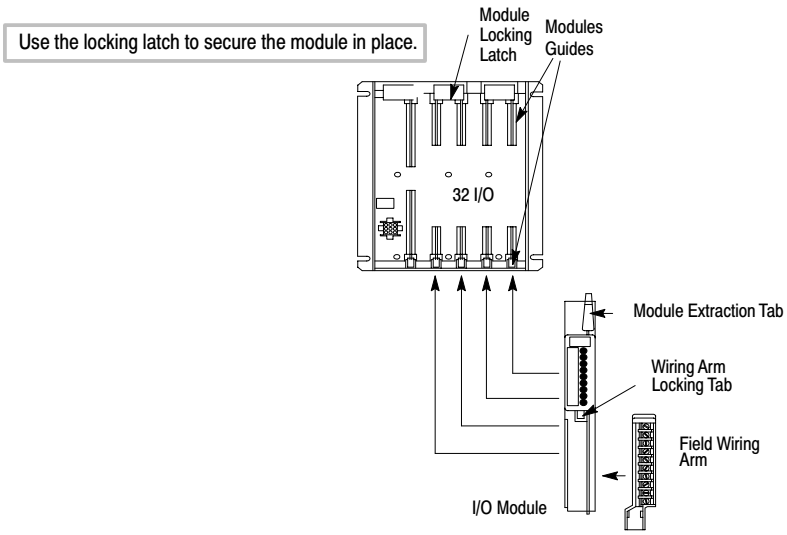


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For more information...

Specific wiring information for each type of I/O module is contained in the product data publication for that specific module. Therefore, refer to the appropriate product data publication when you follow these steps.

a *Install each I/O module.*



b *Snap the field wiring arms for each I/O module onto the horizontal bar of the I/O chassis and connect it to the module.*

c *Remove the terminal cover from each wiring arm and connect the wires between the I/O devices and the wiring arm terminals.*

d *Connect the power and ground wires.*

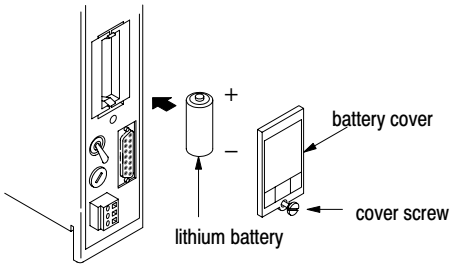
e *Use tie wraps to gather the wires at each wiring arm, then bundle the wires so the arms can pivot freely.*

f *Replace the terminal covers and label the terminal status indicators appropriately.*

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Install Backup Battery and Memory Module

Install Backup Battery



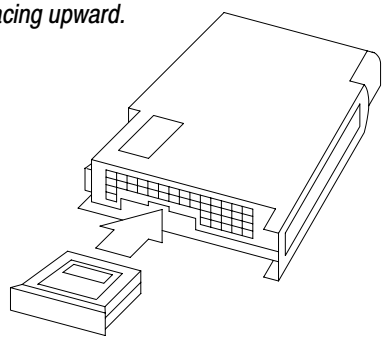
Install Memory Module

a *Move the chassis POWER switch to the OFF position and turn off the incoming power source to the processor and chassis.*

b *Unplug the power cable and lift the latch of the I/O chassis that holds your processor, then slide the processor out of the chassis.*

c *Place the processor on a clean, flat surface with the bottom of the module facing you.*

d *Position and insert the memory module in the memory module slot with its label facing upward.*



d *Slide the processor into the I/O chassis and secure the latch.*

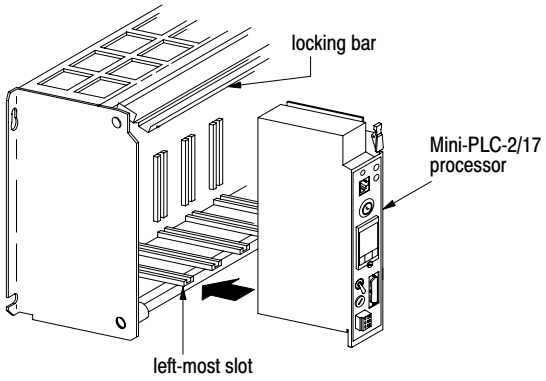
e *Connect the power cable and reapply power to the processor.*

Publication 1772-10.2 – March 1996

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Install Processor and Power Supply

Install Processor



Install Power Supply

If you have a processor with a power supply, and do not need additional current for your I/O modules, skip this step. If you need additional current, use an ac powered supply because we recommend that you use the same input voltage source for two paralleled power supplies.

ATTENTION: Do not parallel a 1771-P5 power supply and a processor with a power supply because of power-up and power-down timing difference.

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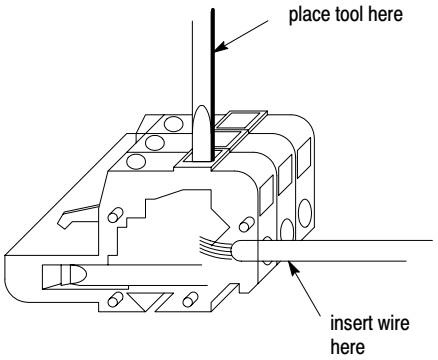
Connect Power to the Processor or Power Supply

Connect Power to Processor

a *Strip 3/32 inch insulation from the end of the wire.*

b *Insert screwdriver into the square opening and press down with it.*

c *Insert the wire into the round opening on the front of the plug and remove the screwdriver.*

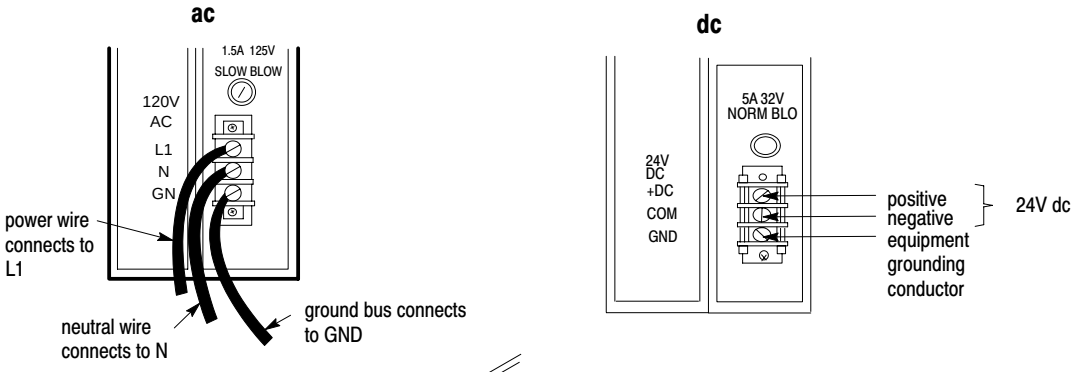


Connect Power Supply

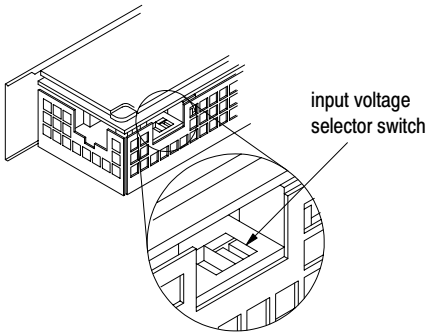
a *Strip 3/8 inch insulation from the end of the wire.*

b *Loosen each terminal screw and place the appropriate wire under it.*

c *Connect power cable to the ac or dc power supply's terminal strip.*



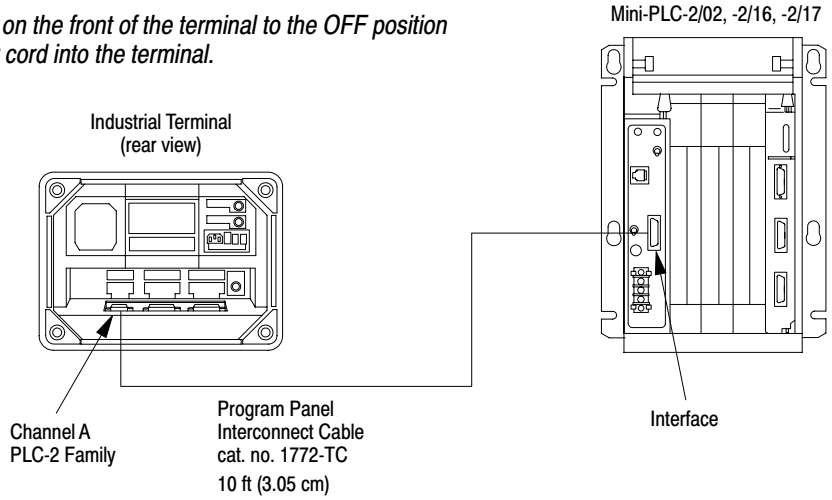
e *Set the input voltage selector switch.*



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Connect Programming Terminal

a *Turn the power switch on the front of the terminal to the OFF position and plug the ac power cord into the terminal.*



b *If your processor has a power supply, plug the ac power cord into the ac power source.*

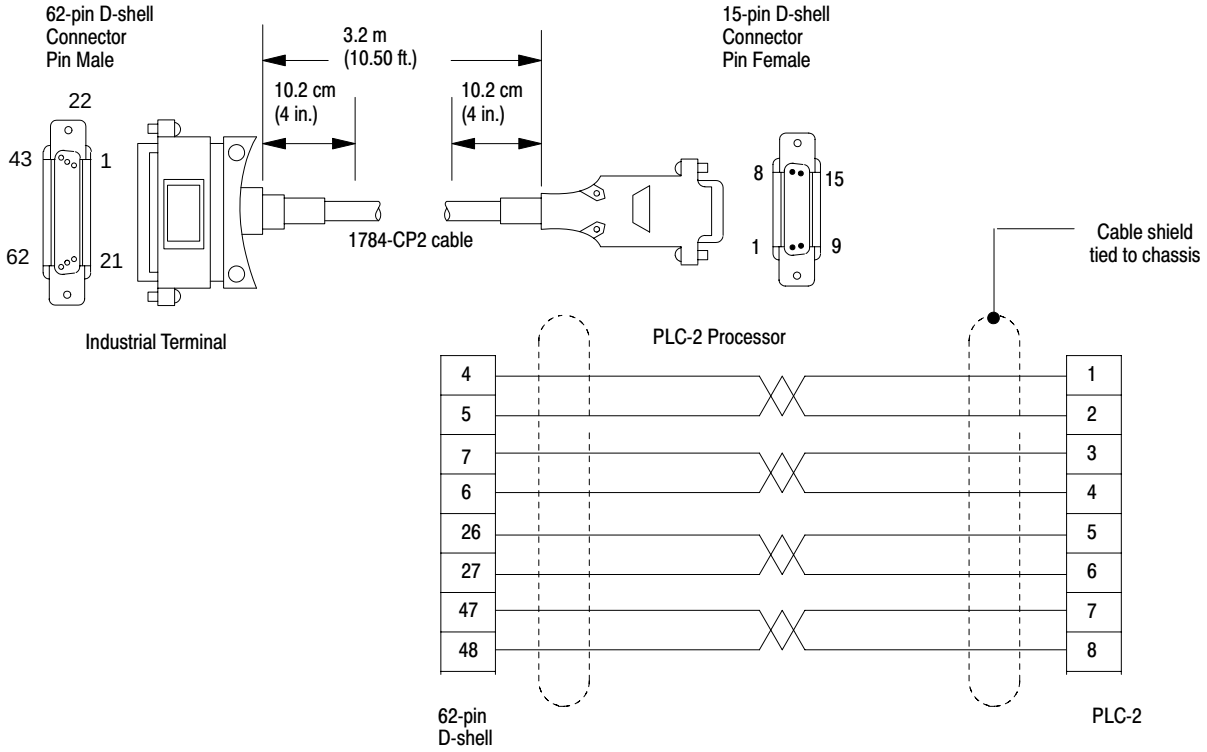
c *Connect one end of the 1772-TC Interconnect Cable to Channel A at the back of the terminal and connect the other end to the socket labelled INTFC at the front of the processor.*

d *Place the PLC-2 family keytop overlay onto the keyboard and turn the power switch on the front of the terminal to the ON position.*

e *Turn the power switch of the processor to the ON position and press the keys [1] [1] on the terminal keyboard.*

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Connect to a Personal Computer



Using 6200 Programming Software

For more information...

For specific information about using 6200 programming software, see the Mini-PLC-2/02, -2/16, -2/17 Processor User Manual, publication 1772-6.5.8.

Any Allen-Bradley or IBM and IBM-compatible machine can be used as a programming device using 6200 or Application Interface (AI) programming software. Before you install the PLC-2 programming software, you need the following:

- 640 KBytes of RAM as base memory (extended or expanded memory not required
- 10 MBytes of disk space for storing files.
- Allen-Bradley DOS version 3.2*x* if you use a 1784-T50 or 1784-T45 programming terminal. If you use a 1784-T47 programming terminal use DOS 4.01. If you use an IBM PC/XT, IBM PC-AT, or IBM-compatible programming terminal, use DOS 3.2, 3.3, 4.*x,* or 5.0.
- monochrome or color graphics monitor
- installed 1785-KL, -KTP, -KT, -KT2, -KTK1 card

If your 1784-T50 has DOS version 2.11 or earlier, you must upgrade to the current version of Allen-Bradley DOS. The current version of Allen-Bradley DOS is version 3.21.

Using AI Programming Software

For more information...

For specific information about using AI programming software, see the PLC-2 Ladder Logistics Manual, publication 9399-L2man-07.05.89.

Before you install the AI PLC-3 programming software, you need the following:

- IPM PC XT, AT or compatible computer with DOS 2.1 or later
- monitor and graphics board. These display types are supported:
  monochrome display system
  CGA display system
  EGA display system
  VGA display system
- 640K RAM of system memory
- a floppy drive and a hard drive

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Specifications

Specifications

Specifications for Mini-PLC-2 processors follow.

	Mini-PLC-2/02 Processor without a power supply (1772-LZ)	**Mini-PLC-2/16 Processor** without a power supply (1772-LX)	**Mini-PLC-2/17 Processor** without a power supply (1772-LW)
Location	1771 I/O chassis left most slot		
Backplane Current	1.25 A Requirement		
Battery Back-up	Self-contained lithium battery maintains memory for 1 year with no AC applied to the processor		
Data Table Size	48-1920 Floating words	48-3968 Floating words	48-7808 Floating words
Memory Size 16-bit words RAM	2K	4K	7.75K
I/O Scan	0.82 ms (2-slot addressing) 2.00 ms (1-slot addressing) 2.15 ms (1/2-slot addressing)		
Program Scan	7.5 ms/K (minimum) 12 ms (typical application program)		
I/O Capacity (Typical) Bulletin 1771 I/O	128	256	256-512 (maximum)
Mode Selection	Key switch on the front panel and from the keyboard of the 1770-T3 terminal		
Environmental Conditions			
Operating Temperature	0 to 60° C (32 to 140° F)		
Storage Temperature	-40 to 85° C (-40 to 185° F)		
Relative Humidity	5% to 95% (without condensation)		

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	Mini-PLC-2/02 Processor with a power supply (1772-LZP)	**Mini-PLC-2/16 Processor** with a power supply (1772-LXP)	**Mini-PLC-2/17 Processor** with a power supply (1772-LWP)
	These processors have the same features as above and they also have a self-contained power supply.		
Input Voltage	120/220 V ac (switch selectable)		
Input Voltage Range	97 to 132 V ac 194 to 264 V ac		
Nominal Input Power	96 VA		
Frequency	47 to 63 Hz		
Output Current to Backplane	4 A		
Keying (top connector)	Between 46 and 48 Between 54 and 56		

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Publication 1772-10.2 – March 1996
Supercedes 1772-2.23 October 1985 , 1772-2.27 April 1988, 1772-2.15 August 1984, 1772-2.16 February 1986
PN 955124-62
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