



# **Enhanced PLC-5 and Ethernet PLC-5 Programmable Controller Memory Module**

(Cat. No. 1785-ME16, -ME32, -ME64, and -M100)

## Installation Data

### **To the Installer**

This document provides you with the following information.

| <b>For information about:</b>                                     | <b>Go to page:</b> |
|---|--------------------|
| European Union directive compliance                               | 2                  |
| choosing compatible processors and software for the memory module | 3                  |
| handling the memory module  | 3                  |
| setting backplane switches  | 4                  |
| installing the memory module                                      | 5                  |
| removing the memory module  | 5                  |
| using the write protection jumper                                 | 5                  |
| writing to the memory module                                      | 6                  |
| handling an error while writing to the memory module              | 8                  |
| restoring a program from a memory module                          | 8                  |
| specifications  | 9                  |

### **Terminology**

These processors are referred to as enhanced PLC-5 programmable controllers:

- PLC-5/11
- PLC-5/20
- PLC-5/30
- PLC-5/40, -5/40L
- PLC-5/60, -5/60L
- PLC-5/80

These processors are referred to as Ethernet PLC-5 programmable controllers:

- PLC-5/20E
- PLC-5/40E
- PLC-5/80E

## Installation Data

Enhanced PLC-5 and Ethernet PLC-5  
Programmable Controller Memory Module

## European Union Directive Compliance

If this product is installed within the European Union or EEA regions and the product has a CE mark, the following regulations apply.

### EMC Directive

This apparatus is tested to meet Council Directive 89/336 Electromagnetic Compatibility (EMC):

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

According to these Standards, the factor which determines, for EMC purposes, whether an apparatus is deemed to be “Industrial” or “Residential, commercial and light industrial“, is given in Clause 1 of EN50081-2 as follows:

Apparatus covered by this standard is not intended for connection to a public mains network but is intended to be connected to a power network supplied from a high- or medium-voltage transformer dedicated for the supply of an installation feeding a manufacturing or similar plant.

The product described in this manual is intended for use solely in an industrial environment as defined above. When installed in Europe, any other application is in contravention of European Union Directives, and a breach of those laws.

### Low Voltage Directive

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

For specific information that the above norm requires, see the appropriate sections in this manual, as well as the following Allen-Bradley publications:

- Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1
- Guidelines for Handling Lithium Batteries, publication AG-5.4
- Automation Systems Catalog, publication B111

## Installation Data

Enhanced PLC-5 and Ethernet PLC-5  
Programmable Controller Memory Module

## Choosing Compatible Processors and Software for the Memory Module

Table 1 shows the the programmable controllers and the software that are compatible with the 1785-ME16, -ME32, -ME64, -M100 memory modules.

**Table 1**  
**1785-ME16, -ME32, -ME64, -M100 Compatibility**

| Memory Module:                           | Compatible Programmable Controllers:   |  | Compatible Software:                                       |
|--|--|--|--|
|  | Catalog Number:  | Series and Revision:   |  |
| 1785-ME16,<br>1785-ME32 and<br>1785-M100 | 1785-L11B, -L20B, -L30B, -L40B, -L40L, -L60B, -L60L,<br>1785-L11B, -L20B<br>1785-L20E, 1785-L40E<br>1785-L30B<br>1785-L40B, -L40L, -L60B, -L60L<br>1785-L40B, -L40L, -L60B, -L60L<br>1785-L80B | series C, revision C and later<br>series A, revision E and later<br>series C, revision D and later<br>series A revision F and later<br>series B revision F and later<br>series A, revision J and later<br>series C, revision C and later | 6200 PLC-5<br>Programming Software<br>release 4.4 or later |
| 1785-ME64                                | 1785-L11B, -L20B, -L30B<br>1785-L20E, 1785-L40E<br>1785-L40B, -L60B<br>1785-L40L, -L60L<br>1785-L80B   | all series, all revisions<br>series C, revision D and later<br>series A, revision C and later<br>series A, revision C and later<br>series C, revision C and later  | 6200 PLC-5<br>Programming Software<br>release 4.1 or later |

## Handling the Memory Module

The memory module is shipped in a static-shielded bag to guard against electrostatic damage.

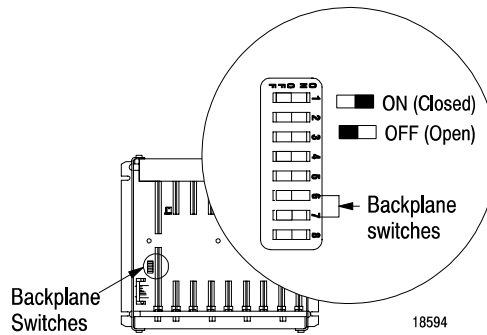


**ATTENTION:** Under some conditions, electrostatic discharge can degrade performance or damage the memory module. Observe the following precautions to guard against electrostatic damage:

- Touch a grounded object to rid yourself of static charge before handling the module.
- When not in use, keep the module in its static-shielded bag.

## Setting Backplane Switches

Set the I/O chassis backplane switches before you install the PLC-5 processor. Use a ballpoint pen to set each switch (do not use a pencil because the tip can break off and short the switch).



Use Table 2 to select the mode of memory transfer at power-up.

**Table 2**  
**Selecting Mode of Memory Transfer and Switch Settings**

| <b>If you want the contents of the memory module:</b>   | <b>Then set switch 6:</b> | <b>And set switch 7:</b> |
|---|---------------------------|--------------------------|
| to transfer to processor memory at every power-up   | OFF                       | OFF                      |
| to transfer to processor memory when a defect is detected in existing processor memory                                  | ON                        | ON                       |
| <b>not</b> to transfer to processor memory at power-up; if the processor memory is not valid, a processor fault occurs. | ON                        | OFF                      |

## Installation Data

Enhanced PLC-5 and Ethernet PLC-5  
Programmable Controller Memory Module

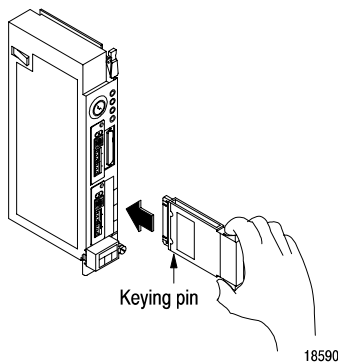
### Installing the Memory Module

Insert the memory module into the front of the PLC-5 processor by following these steps:

1. Turn off power to the I/O chassis and processor.



**ATTENTION:** Do not insert or remove the memory module under power. Insertion or removal under power can result in loss of program memory and a processor fault.



2. Insert the memory module firmly but gently into the processor with the keying pin in the down position. When the memory module is inserted correctly you will hear the connector pins on the back of the memory module snap together with the mating connector in the processor.

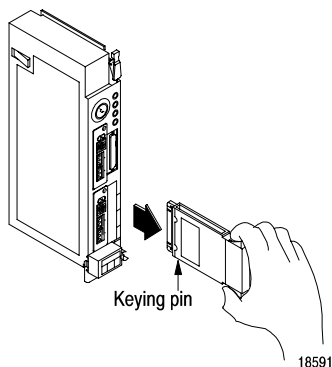
### Removing the Memory Module

Remove the memory module by following these steps:

1. Turn off power to the I/O chassis and processor.

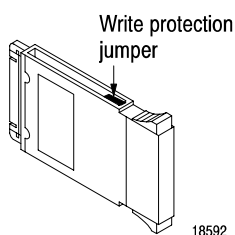


**ATTENTION:** Do not insert or remove the memory module under power. Insertion or removal under power can result in loss of program memory and a processor fault.



2. Grasp the finger grip tabs and firmly pull the memory module out of the processor.

### Using the Write Protection Jumper



The write protection jumper allows you to program the memory module. The memory module is packaged with the jumper in the correct position to write to the memory module.

After writing to the memory module, remove the write protection jumper using a pair of needle nose pliers. Store the jumper in a safe place for future use. Once you remove the jumper, you cannot write to the memory module.

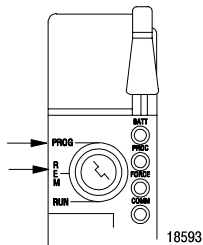
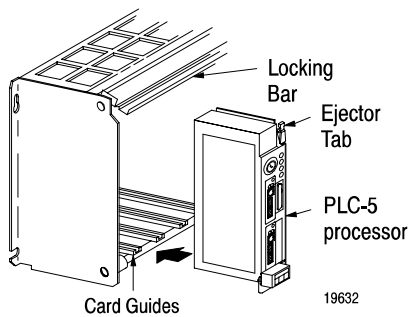
## Installation Data

Enhanced PLC-5 and Ethernet PLC-5  
Programmable Controller Memory Module

### Writing to the Memory Module

Use the following steps to store a program on your memory module.

**Important:** If you are using a 1785-L40B series A, revision B or a 1785-L60B series A, revision B processor, you must have the Global Status Flag file set to zero. Access this file through the channel configuration screen for channels configured for DH+ communications. If the Global Status Flag file is set to any number except zero and you try to write to a memory module, you will lose processor memory and a processor fault occurs.



1. Insert the memory module into the processor using the installation procedure in this document (see page 5).
2. On the I/O chassis backplane, set backplane switch 6 to the ON position and switch 7 to the OFF position (see page 4).
3. Install the processor into the I/O chassis.
4. Turn on power to the processor and I/O chassis.
5. Put the processor in Program or Rem Program mode.

If you try to write to a memory module when the processor is in any other mode, you receive a NO ACCESS OR PRIVILEGE VIOLATION message.

6. Develop or download your program online (make sure you initialize your data table values).



## Installation Data

Enhanced PLC-5 and Ethernet PLC-5  
Programmable Controller Memory Module

### Handling an Error while Writing to the Memory Module

If an error occurs during a write to the memory module, you see this message displayed: EEPROM NOT BURNED

If you get this message, do the following:

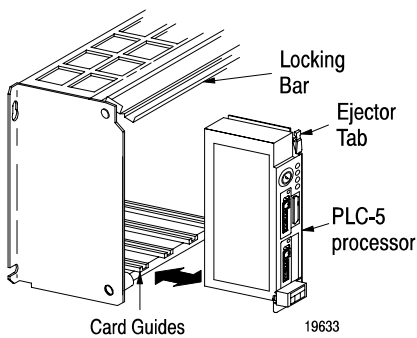
- check that you inserted the write protect jumper
- check minor fault bit (S:10/8) in the status file. If this bit is set, then there is not enough memory on your memory module to upload the program from the processor.
- review the “Writing to the Memory Module” procedure (see page 6) and repeat it from the beginning

### Restoring a Program from a Memory Module

You can restore a program from a memory module to the processor memory using the following procedure.

If the restore fails, the old program remains in memory and the EEPROM transfer bit (minor fault bit S:10/3) is cleared.

**Important:** When restoring a program from a memory module using a 1785-L40B series A, revision B or a 1785-L60B series A, revision B processor, the memory module overwrites the DH+ station address for channel 1A.



1. Turn off power to I/O chassis and processor.
2. Remove the processor from the I/O chassis.
3. Set backplane switch 6 and 7 of the switch assembly group to the OFF position (see page 4). This allows the memory module memory to transfer to processor memory at power-up.
4. Install the processor into the I/O chassis.
5. Install the memory module containing the program to be restored into the processor using the installation procedure in this document (see page 5).
6. Turn on power to the processor. Program transfer and execution begin immediately with the processor keyswitch in Run or Rem position.

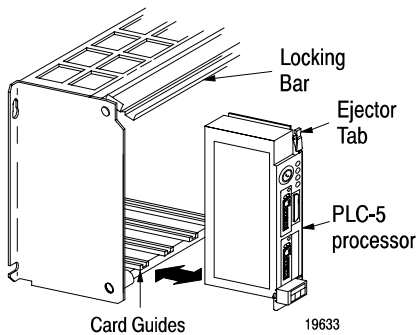


## Installation Data

Enhanced PLC-5 and Ethernet PLC-5  
Programmable Controller Memory Module

**Important:** You can have continuous processor memory backup after restoring a program from a memory module to a processor by following these instructions:

1. Turn off power to the processor and I/O chassis.
2. Remove the memory module by following the removal procedure in this document (see page 5).
3. Remove the write protection jumper with needle nose pliers to guard against unauthorized changes. Store the jumper in a safe place for future use.
4. Re-install the memory module into the processor by following the installation procedure in this document (see page 5).
5. Remove the processor from the I/O chassis.
6. Set switch 6 and 7 of the assembly backplane switches to the ON position (see page 4).
7. Re-install the processor into the I/O chassis.



## Specifications

The following table shows the specifications for the memory modules.

| Memory Module   | 1785-ME16   | 1785-ME32                                | 1785-ME64          | 1785-M100          |
|---|---|--|--------------------|--------------------|
| Capacity  | 16K words   | 32K words                                | 64K words          | 100K words         |
| Type  | Nonvolatile   |  |                    |                    |
| Write Protection  | By removing the jumper  |  |                    |                    |
| Weight  | 85.05 g<br>3 oz   | 70.875 g<br>2.5 oz                       | 70.875 g<br>2.5 oz | 70.875 g<br>2.5 oz |
| Environment   | 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)          |                    |                    |
| Shock Testing   | Operating   | 15 g peak acceleration at 11 ms duration |                    |                    |
|   | Non-operating   | 3 g peak acceleration at 11 ms duration  |                    |                    |
| Vibration Testing   | 2 g peak acceleration at 10-500 Hz  |  |                    |                    |
| Agency Certification<br>(when product or package is marked) | <ul style="list-style-type: none"><li>• CSA certified</li><li>• CSA Class I, Division 2<br/>Groups A, B, C, D</li><li>• UL listed</li><li>• CE marked for all applicable directives</li></ul> |  |                    |                    |

## Installation Data

Enhanced PLC-5 and Ethernet PLC-5  
Programmable Controller Memory Module



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