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Enhanced PLC-5 Programmable Controllers

Series E, Revision J
Series D, Revision K
Series C, Revision T
Series B, Revision R
Series A, Revision R
Series A, Revision Q

Introduction

Use these release notes with the following PLC-5[®] processors:

Catalog Number	Series A	Series A	Series B	Series C	Series D	Series E
Enhanced	Revision	Revision	Revision	Revision	Revision	Revision
1785-L11B	Q			T	K	J
1785-L20B	Q			T	K	J
1785-L30B		R		T	K	J
1785-L40B			R	T	K	J
1785-L40L			R	T	K	J
1785-L60B			R	T	K	J
1785-L60L			R	T	K	J
1785-L80B				T	K	J
Protected	Revision	Revision	Revision	Revision	Revision	Revision
1785-L26B	Q			T	K	J
1785-L46B			R	T	K	J
1785-L46L			R	T		
1785-L86B				T	K	J

Purpose of this Release

In this release, PLC-5 firmware has been changed to maintain compatibility with PLC-5 hardware.

PLC-5 Processor Enhancements for Previous Releases

Series E, Revision E.2

The Series E, Revision E.2 release included this enhancement for Ethernet[®] Channel diagnostics - channel 3A when using a Series B, Revision B or later Ethernet sidecar module:

- Additional diagnostics are available for use within a user program as words 44 through 49 of the Ethernet diagnostic file:

This word:	Displays:
44	Network storm counter
45-47	Ethernet hardware address
48-49	Assigned Internet Protocol Address

Words 48 and 49 contain 4 bytes of data, with each byte holding one of the numbers of the address in hex in the dot address format. For example, an IP address of 142.169.124.1 will be displayed as 8EA97C01.

- Series C, revision H and later processors limit the amount of messages they will accept under extremely high levels of Ethernet traffic (storms). This is designed to prevent a fault with memory loss.

To complement this enhancement, Series E, revision E.1 processors include diagnostics with a network storm counter (word 44 of Ethernet diagnostic file). At the beginning of each storm, the network storm counter is incremented once, independent of the length of the storm.

For example, when the processor receives more than 16 Ethernet frames within 10ms, it goes into storm mode and increments the network storm counter. In this mode, the processor disables receive interrupts for 6ms. After 6ms, the processor enables the input interrupts, and sets the input limit to 8 frames in 10ms. After 10ms (and without the input limit being exceeded), the processor returns the input limit to 16 frames.

During certain times (such as when the processor encounters mode changes), the input limit is further reduced to 5 frames for 10ms and interrupts are disabled for 10ms.

To access these additional words, you must create the diagnostic file in the channel configuration and manually expand the data table file from 44 to 50 words.

Series E, Revisions E, E.1 and E.2 Processors Only

The Series E, Revision E, E.1 and E.2 processors only releases included the following enhancements:

- Support for the 1785-RC Relay Cartridge

The relay cartridge serves as an interface from the PLC-5 to a user-supplied external device such as the Allen-Bradley™ 700P relay. When the PLC-5 is in Run mode, it monitors online ladder program edits and I/O forcing activity. When either of these is detected, the processor opens the relay on the relay cartridge for one second.

- **Memory Card ID** - status word 68 displays the installed memory card type.

The four most-significant bits indicate the memory card type:

Value	Memory card type
0	No memory card installed
1	1785-ME16 installed
2	1785-ME32 installed
3	1785-ME64 installed
4	1785-ME100 installed
5	1785-CHBM installed
6	1785-RC installed
7-15	Reserved

When the 1785-RC module is installed, the eight least-significant bits indicate the memory card's status:

Bit:	Is set when:
3	the 1785-RC memory card is installed in the processor
2	contact is detected closed. The bit resets when contact is detected open
1	the relay is driven open. The bit resets when the relay is closed.
0	120V AC is present on the memory card. The bit resets when 120V AC is not present on the card.

When any other memory card is installed, the bits are undefined.

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For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running:

United States	1.440.646.3223 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell tests all of our products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned:

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Outside United States	Please contact your local Rockwell Automation representative for return procedure.

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