

Allen-Bradley 1785-L80B

The 1785-L80B is an Allen-Bradley enhanced PLC5 Programmable Logic Controller (PLC). This controller has an embedded user memory of 100,000 Words and comes with multiple communication interfaces such as four (4) DH+/Remote I/O (Adapter or Scanner), one (1) serial port configurable for RS-232, -423, and RS-422A compatibility, and two (2) programming terminals. It can

Technical specifications for 1785-L80B
Manufacturer Rockwell Automation

Max I/O Chassis Total 93

Max Total I/O 3072; any mix or 3072 in + 3072 out

Module Type PLC5 Processor

Part Number/Catalog No. 1785-L80B

Brand Allen-Bradley

Communication Ports Four (4) DH+/Remote I/O (Adapter or Scanner), One (1) serial port configurable for RS-232 and 423 and RS-422A compatible and Two (2) programming terminals.

Supported Protocols DF1, ASCII, Data Highway Plus (DH+), Remote I/O (RIO)

Controller Memory up to 64KWords

Controller Memory expansion 1785-ME16 with 16K Words, 1785-ME32 with 32KWords, 1785-ME64 with 64KWords

Max. number of I/O racks 32

Battery 1770-XYC

Controller Redundancy Supported

Power Dissipation 12 W

Backplane Current draw 2.3 A

Processor PLC-5/80

Max User Memory Words 100 Kilowords

Battery-Backed Static RAM Yes

EEPROM Program Backup Option (using 1785-ME16, -ME32, -ME64, and -M100) Yes

Protected Memory No

Max Analog I/O 3072

I/O Scan Time Per Rack 10 ms at 57.6 kbits/s, 7 ms at 115.2 kbits/s, 3 ms at 230.4 mbits/s

Max I/O Chassis Extended Local 0

Max I/O Chassis Universal Remote 32 Max. Per I/O Link

RS-232-C/422-A/423- A Ports 1

Control Coprocessor Expansion Port Yes

UPC 10612598126122 Description

The programmable controller 1785-L80B is a central part of each control system based on the Allen Bradley PLC-5 series. The 1785-L80B connects local, extended, and remote I/O modules on various communication interfaces into one control system. Four built-in ports are available on the 1785-L80B controller. The ports are marked as channel 1A, channel 1B, channel 2A, and channel

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2B. All ports can be configured and used as remote I/O scanners, remote I/O adapters, and DH+ communication interfaces. DH+ communication can be used both for remote programming and monitoring of the 1785-L80B and for creating a peer-to-peer communication network between the various PLC-5 controllers. Remote I/O connection is used for real-time data exchange between the controller and I/O, operator interface, and other functions. All four channels on the 1785-L80B can function as remote I/O scanners or remote I/O communication adapters. Remote I/O scanner mode reads and writes I/O information between a controller and a remote I/O device. In this mode, the 1785-L80B is a supervisory controller for other controllers that are in adapter mode and for remote I/O adapter modules. When any of the four channels 1A, 1B, 2A, or 2B, function in remote I/O adapter mode, the controller monitors its controller-resident local I/O while communicating with the supervisory controller via a remote link. On the 1785-L80B, the Data Highway Plus (DH+) link can be used on all four existing channels. DH+ communication can be used for data transfer to other PLC-5 controllers or other higher-level components of the control system. The DH+ link can program multiple PLC-5 controllers. On the front panel of the 1785-L80B controller, there is a 25-pin connector marked channel 0. This is an optically isolated EIA RS232C port. Channel 0 supports ASCII and DF1 full and half-duplex master and half-duplex slave protocols. On the front panel is a green channel 0 communication indicator light. Beside channel 0, there are two 8-pin mini-DIN connectors marked as channel 1A and channel 2A, and there is a DH+ programming terminal connection parallel to channels 1A and 2A. There are four three-pin connectors used as communication ports. These three-pin connectors are used for channel 1A, 1B, 2A, and 2B. All of these ports can function as remote I/O scanners, remote I/O adapters, or as DH+ communication ports. The maximum cable length for the DH+ link depends on the transmission rate. It is crucial that all devices on a DH+ link communicate at the same rate. That length goes from a maximum 3048m for speed 57.6 kilobits per second, to 762m for a speed of 230.4 kilobits per second. The 1785-L80B has several indicators on the front panel for easy interaction. Indicators display various controller statuses. The indicator marked BATT displays the status of the battery. The indicator marked PROC indicates the current controller mode, it is green when the controller is in RUN mode, and red when something is wrong. The FORCE indicator is amber when the I/O forces are enabled. The COMM indicator is linked with channel 0's communication status. The indicator is green when the channel is communicating. All four communication channels: 1A, 1B, 2A, and 2B, have dedicated status indicators.

The Allen-Bradley 1785-L80B is a Programmable Logic Controller (PLC) from the PLC-5 series. It is part of the enhanced PLC 5 range and primarily features an embedded memory of 100,000 Words which is capable of accommodating up to 3072 I/O of any mix or 3072 input and 3072 outputs when operating in complimentary mode.

The 1785-L80B is designed with multiple communication interfaces which can be used simultaneously to communicate to different automation devices. It has four (4) DH+/Remote I/O (Adapter or Scanner) labelled as CH1A, CH1B; CH2A and CH2B; one (1) serial port configurable for RS-232 and RS-422A electrical standard supporting DF1 protocol, and two (2) programming

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terminals. The 1785-L80B is able to communicate up to 93 I/O chassis and up to 32 Remote I/O (RIO) rack.

Enhanced PLC 5 controllers such as the 1785-L80B are mainly used when the control system requires communication to a large number of Remote I/O (RIO) devices as well as connectivity to a large number of Data Highway Plus (DH+) devices.

For installation, the 1785-L80B may be installed in 1771-A1B, 1771-A2B, 1771-A3B, 1717-A3B1, and 1771-A4B PLC5 chassis. Supported power supplies by this processor include the 1770-P1, 1770-P45, 1770-P5, 1771-PE, 1771-P4S1, 1771-P6S1, 1771-P4R, and 1771-P6R.

It is also used to configure I/O modules and extension racks.



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