

Allen-Bradley 1756 Series Service Manual

1756-L83E

1. Description

Mfr. Part Number:

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation
Brand	Allen-Bradley
Part	Number/Catalog No. 1756-L83E
Series	ControlLogix
Tasks	32
Module	Type Processor Module
Communications	USB, Ethernet
Nonvolatile	Memory 2 GB (1784-SD2 ships with every controller)
Communication	Speed 12 MB-Second
Communication	1 port USB; Ethernet
Ethernet	Nodes 100 or 250
USB	Port Communication Programming, configuration, and on-line edits
Ethernet	Communication Speed 10/100/1000 Mbps
Current	Draw (1.2 Volts DC) 5 milliamps
USB	Communication Speed 12 Mbps
Current	Draw (5.1 Volts) 1.2 amps
Discrete	I/O 128,000
Power	Dissipation 6.2 Watts
User	Memory 4MB
Analog	I/O 4,000
Thermal	Dissipation 21.2 BTU-hour
Isolation	Voltage 50 Volts Continuous
Backplane	Current (1.2 Volts DC) 5 mA
Enclosure	None
Backplane	Current (5.1 Volts DC) 1.2 mA
UPC	887172361357
Weight	0.25 kg (0.55 lb)
Relative	Humidity 5-95 %
Redundancy	Full Support
Programming	Languages Relay ladder Structured text Function block SFC" Description
The	Allen-Bradley 1756-L83E

3. Product Information

Mfr. Part Number:

1756-L83E

Manufacturer: Allen-Bradley / Rockwell Automation

Description: Allen-Bradley 1756-L83E ControlLogix Logix5580 Processor, 10MB, USB/EtherNet

Full Description: Allen Bradley 1756-L83E ControlLogix5580 Logix 5580 Controller, 10MB User Memory, USB Port, 1GB Ethernet Port, 100 EtherNet/IP Devices, 4 Character

Alpha/Numeric Display, Supported in Studio 5000 Automation Engineering & Design Environment The 1756-L83E is a controller module for the ControlLogix Modular Programmable Automation Controller (PAC) by Allen-Bradley. It comes with Memory of 10MB, and built-in Ethernet and USB communication interface. It is capable of 128,000 Discrete I/O and 4000 Analog I/O memory. Technical specifications for 1756-L83E

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Series ControlLogix

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Ethernet Nodes 100 or 250

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Relative Humidity 5-95 %

Redundancy Full Support

Programming Languages Relay ladder Structured text Function block SFC" Description

The Allen-Bradley 1756-L83E belongs to the Logix 5580E controller platform.

This controller is also designed with an embedded Ethernet communication port which support auto-negotiation with support for 10/100/100 Mbps transmission rate. Only linear topology may be implemented through this embedded port however, this controller module support addition of communication modules such as EtherNet/IP, ControlNet, DeviceNet, Data Highway Plus, Remote I/O, SynchLink and Third-party process and device networks for implementing a more sophisticated communication topology.

BOOTP-DHCP utility is used to configure an IP address to this module. For standard applications, this controller supports configuration of Static IP address however, for advanced security requirements, it may also be configured with dynamic IP parameters. With dynamic parameter, the address changes every power cycle or as triggered by a network provider. This setting is ideal for critical applications to prevent unwanted access to control and operational data.

This controller supports redundancy architecture for increasing the availability of this controller. It enables the system to operate when the primary controller is faulted by automatically switching to the secondary processor. It is also capable of implementing Remote I/O systems with the use of native ControlLogix modules or I/O system such as Flex I/O or POINT I/O. It can also communicate to other Allen-Bradley Programmable Logic Controllers (PLC) such as PLC 5, SLC 500, MicroLogix, and CompactLogix controller through messaging instructions.

The Allen-Bradley 1756-L83E is a ControlLogix 5580 controller centered on EtherNet/IP communication. It supports 32 tasks where up to 1000 programs/task including event tasks with all event triggers being implemented. The controller has an available user memory for data and logic of 10 MB and an optional non-volatile storage memory. It ships with a 2 GB Secure Digital (SD) card, the 1784-SD2, that is already preinstalled with the controller. The controller also has a non-removable energy storage module that is already embedded in the controller. 2 communication ports are available with the 1756-L83E controller, a Type-B USB port and an embedded EtherNet port.

It is recommended that you only use a Rockwell Automation SD card, as these cards have been tested to work with controllers like the 1756-L83E and withstand extreme temperatures the controllers may be subjected to. You risk having data loss or corruption when you use other SD cards. It is important that you leave the SD card installed, as diagnostic data will be saved here in case of faults.

EtherNet/IP-related uses of this controller include connecting the controller with I/O modules, directly connecting it to an EtherNet/IP network without needing a bridge module, bridge messages between modules and EtherNet/IP in the ControlLogix chassis, support 10 Mbps, 100 Mbps, and even 1 Gbps link speeds, and communicate to other Ethernet/IP devices (messages and produced/consumed tags).

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The controller has an EtherNet performance of 10/100/1000 Mbps and can support up to 250 EtherNet/IP nodes when used with the Studio 5000 Logix Designer Version 30 or higher. It does not support controller redundancy. It also has a maximum digital I/O and total I/O of 128,000 each and an analog I/O of 4,000.

The 1756-L83E controller has a continuous isolation voltage of 50V and it has been type tested at 1000V AC for 60 seconds. It also has a current draw of 5.0 mA at 1.2V DC and 1.20 A at 5.1V DC. Power dissipation of this controller is 6.2 W and thermal dissipation is 21.2 BTU/hr. It also has a vibration of 2 g at 10 to 500 Hz and an operating and non-operating shock of both 30 g. Celsius, while its operating temperature range is 0 to 60 Degrees Celsius. It has a vibration of 2 G at 10 to 500 Hertz, an operating shock of 30 G, and a non-operating shock of 50 G.

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