

Allen-Bradley 1769 Series Service Manual

1769-L33ER

1. Description

The 1769-L33ER controller is an Allen-Bradley/Rockwell Automation controller from the CompactLogix series and the CompactLogix 5370 product line. It can be mounted on a panel or a DIN Rail, and its mounting base will affect its shock ratings. The 1769-L33ER controller can tolerate 20 g of operating shock on a DIN Rail and 30 g of operating shock on a panel. Its maximum operating Technical specifications for 1769-L33ER

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation / Allen-Bradley
Brand	Allen-Bradley
Part	Number/Catalog No. 1769-L33ER
Product	Family: CompactLogix
Product	Line CompactLogix 5370
Product	Type: Programmable Automation Controller
Module	Type Processor Module
Communication	Ethernet
Communication	ports: 1 USB; 1 Ethernet
Supported	Protocols: EtherNet I/P
Memory	2MB
Maximum	number of I/O modules supported: 32 Modules
Shipping	Weight 2 pounds
Maximum	number of I/O banks supported: 3 banks
No.	of tasks: 32
Series	A and B
Programs	per task: 100
Shipping	Dimensions 8 x 8 x 5 inches
Wire	Type Copper-90 degrees Celsius
Non-Volatile	memory: 1784-SD1 card with 1 Gb of available memory (shipped with controller) ; 1784-SD2 card with 2 Gb of available memory (available for separate ordering)
Wire	Size (Solid) 22 to 16 AWG
Battery:	1747-BA
Wire	Size (Stranded) 22 to 16 AWG
Vibration:	Operating: 10 to 500 Hz, 5G, 0.030 in. peak-to-peak
Operating	Temperature: 0° to +60°C (+32° to +140°F)
Mounting	DIN Rail; Panel Mounti

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Brand Allen-Bradley

Part Number/Catalog No. 1769-L33ER

Product Family: CompactLogix

Product Line CompactLogix 5370

Product Type: Programmable Automation Controller

Module Type Processor Module

Communication Ethernet

Communication ports: 1 USB; 1 Ethernet

Supported Protocols: EtherNet I/P

Memory 2MB

Maximum number of I/O modules supported: 32 Modules

Shipping Weight 2 pounds

Maximum number of I/O banks supported: 3 banks

No. of tasks: 32

Series A and B

Programs per task: 100

Shipping Dimensions 8 x 8 x 5 inches

Wire Type Copper-90 degrees Celsius

Non-Volatile memory: 1784-SD1 card with 1 Gb of available memory (shipped with controller) ; 1784-SD2 card with 2 Gb of available memory (available for separate ordering)

Wire Size (Solid) 22 to 14 AWG

Battery: 1747-BA

Wire Size (Stranded) 22 to 16 AWG

Vibration: Operating: 10 to 500 Hz, 5G, 0.030 in. peak-to-peak

Operating Temperature: 0° to +60°C (+32° to +140°F)

Mounting DIN Rail; Panel Mounting

Battery requirement Not Necessary (Internal Energy Storage)

Certifications: c-UL-us; CE; C-Tick; CI

Local Expansion Modules 16

UPC 10885630101221 Description

The 1769-L33ER CompactLogix 5370 controller by Allen-Bradley is a compact Logix controller. The 1769-L33ER can communicate with the controller or other devices through the Ethernet port. This controller has built-in user memory of 2 MB. It is packaged with an optional non-volatile memory card which amounts to 1GB, that may be expanded up to 2GB. The 1769-L33ER can support Sixteen (16) I/O modules with a maximum of Three (3) I/O banks connected by appropriate expansion cables. The 1769-L33ER has a draw current of 5 Volts DC at 560 mA across 4 power supply modules and has a maximum power dissipation of 4.5 Watts. It has a 500 mA @ 5VDC backplane current draw and a maximum bus insulation 30 Volts. The 1769-L33ER can be mounted using either a DIN rail or panel mounting. The 1769-L3ER CompactLogix controller has an average weight of 0.31 kilograms (0.68 pounds) and comes with an open-style enclosure. It is an Electronic device with an operating temperature range of a 0 to 60 degree Celsius (32 to 140 degree Fahrenheit) and a -40 to 85 degree Celsius (-40 to 185 degree Celsius) storage temperature, with a maximum relative noncondensing humidity range between 0 to 95%. This unit can be used with several different power supplies, such as the 1769-PA4, the 1769-PA2, and the 1769-PB4.

The Allen-Bradley 1769-L33ER belongs to the CompactLogix 5370 L3 controllers. This product series are 1769 CompactLogix controllers that is Allen-Bradley's modular and cost-effective solution for medium sized applications. This controller features Logix platform capabilities and supports a degree of expansion far greater than the micro automation controller's capabilities. The 1769-L33ER supports up to Sixteen (16) Local I/O module installation with the ability to use up to Three (3) I/O expansion banks. It is also provided with an embedded dual ethernet that act as an embedded switch and supports 10/100 mbps data rate with auto-negotiation capabilities.

The Ethernet communication port serves as the controller's interface to the communication highway. It uses Ethernet I/P protocol to send and receive data to and from partner devices. Up to 32 Ethernet nodes may be connected at a time. Typical devices that may be communicated with this port are Human Machine Interface (HMI), Supervisory Control and Data Acquisition (SCADA), Distributed Control Systems (DCS), gateways, converters, databases, enterprise tools and other products.

A single USB interface is also provided which may serve as the fallback communication protocol. This USB interface is typically used for primary configurations and troubleshooting. This controller supports DIN rail or panel mounting which is similar to MicroLogix systems. It does not require an electronic rack or chassis which advanced control systems for large application such as ControlLogix require. The 1769-L33ER support installation of 1769-SDN or DeviceNet scanner module. With the use of DeviceNet interface, Compact I/O modules that resides in the DeviceNet link may be communicated with. The 1769-L33ER is an Allen-Bradley manufactured Programmable Automation Controller (PAC) component. This hardware is a CompactLogix controller that belongs to the 5370 L3 CompactLogix product family. It is designed for small to medium applications and capable of implementing automation solutions with higher degree of complexity. This controller supports up to Sixteen (16) local I/O expansion modules with the use of 1769 Compact I/O modules. These expansion modules may be installed and distributed in I/O expansion banks. The 1769-L33ER controller supports installation of up to Three (3) I/O banks. The 1769-L33ER does not require battery to retain the user memory contents, Using the internal energy storage solution, contents of 1 MB user memory is retained. Additionally, the controller is shipped with a 1GB non-volatile memory via the 1769-SD1 which may be further increased by replacing with 1769-SD2 which has 2GB non-volatile memory. The non-volatile memory contents is used to transfer program data to the volatile memory during every start-up of the controller. The 1769-L33ER is installed to a DIN rail or directly to the mounting plate. CompactLogix modules including the controller uses electronic keying to prevent usage of incompatible device to the control system. The system compares the device defined in the project to the

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actual hardware installed. If keying does not match, controller fault occurs. Electronic keying options include Compatible Module, Disable Keying and Exact Match. Install the controller to an appropriate enclosure including other CompactLogix modules. Temperature inside the enclosure must be maintained within 0060 C or 32-140 F. Install climate control devices inside the enclosure such as heater and cooler to maintain the required temperature. Thermal dissipation of each component must be considered when sizing climate control devices. The operating vibration of the controller is 5 g @ 10500 Hz and operating shock of 30 g for panel installation and 20 g for DIN rail installation. Panel mounted installation offers more resistance to shock compared to DIN rail installation. Shock limiting components may also be installed to limit effects of shock. The 1769-L33ER has a power supply distance rating of Four (4) slots. This pertains to the distance of the CompactLogix controller to the power supply. The controller requires a power supply to provide power to the backplane thus compatible power supply must be installed to operate the controller. Compatible power supply for use with this controller are 1769-PA2, 1769-PB2, 1769-PA4, and 1769-PB4. This controller has One (1) USB communication port and Two (2) Ethernet communication port. The dual ethernet ports use a standard Cat5 or Cat6 cable with RJ45 on both ends. The ports support transmission speed of 10/100 Mbps with a maximum distance of 100 m.

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