

Allen-Bradley 1769 Series Service Manual

1769-L16ER-BB1B

1. Description

The Allen-Bradley 1769-L16ER-BB1B is a CompactLogix controller that is part of the 5370 L1 CompactLogix Programmable Automation Controller (PAC) family. This controller has Two (2) Ethernet communication ports, with 384Kbytes user memory and supports installation up to Six (6) 1734 Point I/O modules. Technical specifications for 1769-L16ER-BB1B

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation / Allen-Bradley
Product	Family: 5370 L1
Product	Type: CompactLogix Controller
Communication	ports: (1) USB; (2) Ethernet I/P
Maximum	number of I/O modules supported: 6 Modules - Point I/O
banks	supported: Not supported
No.	of Task: 32 Task
No.	of Program per Task: 100
No.	of Embedded Inputs: (16) 24 VDC
Programming	Language: Relay ladder (Safety Task only) • Structured Text • Function block • SFC
Mounting:	DIN Rail
Current	draw @ 5V DC: 1A
Brand	Allen-Bradley
Part	Number/Catalog No. 1769-L16ER-BB1B
Product	Line CompactLogix
Module	Type Processor Module
Communication	Ethernet
Input	Power 24 Volts DC
Memory	384 KB
Communication	Cable 6 Point
Shipping	Weight 3 pounds
Shipping	Dimensions 11 x 8 x 6 inches
Series	A and B
Replacement	Terminal Block Part Number 1769-RTBN18
Wire	Type Copper-90 degrees Celsius
Wire	Size (Solid) 22 to 14 AWG
UPC	10885630101221
UNSPSC	32151705 Description
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UNSPSC 32151705 Description

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The Allen-Bradley 1769-L16ER-BB1B is a processor module and it is also a part of the Allen-Bradley CompactLogix 5370 L1 Programmable Automation Controller series with a 4 EtherNet node limit. Using a single IP address, the controller can connect to the EtherNet network with dual built-in communication ports. The 1769-L16ER-BB1B module comes with an integrated switch that supports the linear, the traditional star, and the DLR (Device Level Ring) topologies. Its DLR capability enhances its network resiliency. It can read the structured text, function block, relay ladder, and the SFC programming languages. The Allen-Bradley 24 Volts DC 1769-L16ER-BB1B controller offers the users an embedded I/O module with 16 sinking digital input points and 16 sourcing digital output points. It also supports a maximum of six 1734 POINT I/O local expansion modules. If the users are using the expansion module, these additional modules should be installed to the right of the controller and linked within the same system. The total current draw of both the embedded I/O and local expansion modules should not exceed the available 1 Amp backplane current and the 3 Amps field power current of the POINTbus. The 1769-L16ER-BB1B DIN rail-mounted PAC supports up to 100 programs for each of the 32 continuous or periodic tasks. It has 32 sockets and a high-performance capacity for up to 256 controllers, 120 TCP, and 256 CIP connections with a packet rate capacity of 6000 at 500 bytes/packet/second.

This controller is also equipped with 384 Kbytes of memory and ships with a Secure Digital (SD) card amounting 1 GB memory size, used for non-volatile memory allocation. It can be further expanded by installing 2GB non-volatile memory SD card.

Up to 32 controller tasks is supported by the 1769-L16ER-BB1B. With every task, 100 continuous programs may be configured. The built-in Two (2) Ethernet communication allows this controller to connect to linear, star and Device Level ring (DLR) topology and capable of communicating with Four (4) nodes of ethernet devices.

The 1769-L16ER-BB1B has a built-in Sixteen (16) channels of 24VDC input points and Sixteen (16) 24VDC controller outputs. This allows the controller to be configured out of the box and perform machine and process automation. Additionally, I/O points may be expanded by locally installing up to Six(6) 1734 Point I/O modules.

The 1769-L16ER-BB1B CompactLogix controller supports programming via the the standard programming languages mandated by the IEC 61131-3. This controller allows programming in Relay Ladder, Structured Text, Function Block and Sequential Function Chart (SFC). Combination of programming language is allowed for customization of the program to fit any control requirement.

The electrical parameters of the 1769-L16ER-BB1B has a Current Draw of 1A @ 5VDC. With power dissipation of 11.5 W. The 1769-L16ER-BB1B is a CompactLogix controller that belongs to the Allen-Bradley 5370 CompactLogix Product family. This controller has a compact and scalable design that requires minimum panel space for installation. It is ideal for use in simple process or machine requirements with built-in modem communication ports for device configuration and network connectivity. The 1769-L16ER-BB1B has a memory built-in memory that amount to 384Kbytes. This memory is designed to store user defined logic, program data and parameters. This memory is battery independent as the controller is designed with internal energy storage solution, eliminating the need of a battery to retain the contents of the memory. This 1769-L16ER-BB1B 5370 CompactLogix controller is embedded with One (1) USB communication port and Two (2) Ethernet Communication ports. The USB port is a USB 1. The dual communication port supports Device Level Ring (DLR), Linear topology and traditional Star Topology. With DLR, redundant communication between controllers, remote I/Os systems, visualization systems, ethernet capable field devices, encompass partner modules and 3rd party devices may be connected. The 1769-L16ER-BB1B 5370 supports up to Four (4) Ethernet nodes, 256 Controller connections, 120 TCP I/P connections and 256 CIP Unconnected Messages (backplane + Ethernet), 6000 I/O packets @ 500 bytes/ packet, 400 HMI messages/s @ 20% comm. Timeslice, 32 multicast produced tags 128 unicast produced tags and support for unicast. The 1769-L16ER-BB1B has designed with embedded Input and Output channels such as Sixteen (16) channel 24VDC Sink Input channels and Sixteen (24) VDC Source output channels. It also supports expansion by installing up to Six (6) POINT I/O modules. The controllers current draw at 5VDC is 1A while

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at 24VDC is 3A - Combined total for all devices that draw current from field power connections. It has a power dissipation of 11.5 W with internal installed fuse for short circuit protection. Recommended wire size for termination of input and output signals is 0.051-3.31 sq. mm or 30-12 AWG solid or stranded copper wire with rated insulation of 75 C (167 F), or greater and insulation thickness of 1.2 mm or 3/64 in. Each terminal accepts 1 or 2 wires.

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