

Allen-Bradley 1756 Series Service Manual

1756-RIO

1. Description

The Allen-Bradley 1756-RIO is a ControlLogix Remote I/O (RIO) communication module. This module provides RIO connection and capable of functioning as a scanner or adapter in the RIO network. This module is capable of block transfer instruction as well as transfer analog and specialty data. It has One (1) RIO port and supports connection to 32 physical racks (0...76), any combination of rack Technical specifications for 1756-RIO

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation
Operating	Temperature 32-140 Fahrenheit (0-60 Celsius)
Dimensions	5.51 x 4.41 x 5.71 inches
Wire	Size 20 AWG
Power	Dissipation (Max) 2.5 Watts
Enclosure	None
Isolation	Voltage 50 Volts Continuous
Backplane	Current (24 Volts DC) 5 milliamps
Backplane	Current (5.1 Volts DC) 450 milliamps
Location	Chassis
Module	Type Remote I-O Adapter Module
Series	ControlLogix
Part	Number/Catalog No. 1756-RIO
Brand	Allen-Bradley
Chassis	1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17
Power	supply, standard 1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B
Power	supply, redundant 1756-PA75R, 1756-PB75R, 1756-PSCA2
UPC	10612598553843 Description
The	Allen-Bradley 1756-RIO connects a ControlLogix processor to a Remote I/O network. It serves as an adapter or scanner on the network. Aside from block-transfer and digital data, it also transports specialty and analog data without message instructions. It sends data regularly between the controller and

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Module Type Remote I-O Adapter Module

Series ControlLogix

Part Number/Catalog No. 1756-RIO

Brand Allen-Bradley

Chassis 1756-A4, 1756-A7, 1756-A10, 1756-A13, 1756-A17

Power supply, standard 1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, 1756-PH75/B

Power supply, redundant 1756-PA75R, 1756-PB75R, 1756-PSCA2

UPC 10612598553843 Description

The Allen-Bradley 1756-RIO connects a ControlLogix processor to a Remote I/O network. It serves as an adapter or scanner on the network. Aside from block-transfer and digital data, it also transports specialty and analog data without message instructions. It sends data regularly between the controller and the I/O adapter connections. It is a standard module in the 1756 ControlLogix Communication Module Series. The 1756-RIO Remote I/O Module is shipped in a default scanner mode. As a scanner with one remote I/O channel, it supports up to 32 physical adapters, all remote I/O baud rates, and all partial rack combinations. It automatically updates block transfers (BTs) at all possible locations. When used as an adapter, the module allows the controller to monitor or exchange data with an existing system scanner. The 1756-RIO Module is powered by a 1756-chassis power supply. It has a continuous isolation voltage of 50V with basic insulation, from RIO communication lines to backplane. It requires two power sources from the backplane and has a maximum current of 450 mA at 5.1V DC and 5 mA at 24V DC. Upon installation, it is best to turn off the chassis power to prevent electrical arcing. Multiple 1756-RIO modules can be installed in the same chassis the number will depend on the power supply rating.

This module is a single slot module and installs in any slot of any ControlLogix chassis. It may be used with 1756-A4, 1756-A7, 1756-A10, 1756-A13, and 1756-A17. It supports simplex and redundant controller topology and compatible for use with standard power supplies such as 1756-PA72/C, 1756-PA75/B, 1756-PB72/C, 1756-PB75/B, 1756-PC75/B, and 1756-PH75/B. Additionally, compatible redundant power supply modules include 1756-PA75R, 1756-PB75R, 1756-PSCA2.

This module can be used to interface with Human Machine Interface (HMI), Supervisory Control and Data Acquisition (SCADA) via an Allen-Bradley communication cards. It is also capable of sending messages to other controllers in the RIO network. The physical cable used to established RIO connection is the 1771-CD or Belden 9463 (Blue Hose) cable.

The 1756-RIO may accommodate Ten (10) scheduled I/O connections. It receives power from the chassis' electronic bus and draws 450 mA 5.1V DC and 5mA at 24VDC. It has a power dissipation of 2.5 Watts and Thermal dissipation of 8.5 BTU/hr with an isolation voltage of 50V (continuous), basic insulation type, RIO communication lines to backplane Type tested at 500V AC for 60 s. The 1756-RIO is a Remote I-O Adapter Module manufactured by Allen Bradley under the Allen Bradley ControlLogix Series. The module serves as an adapter or network scanner connecting the ControlLogix processor to Remote I/O Network. The module updates data regularly between controller and also the I/O adapter connections as a standard module in the 1756 ControlLogix Communication Module series. The 1756-RIO module is shipped in a default scanner module and as a scanner with a single remote I/O channel, it supports up to 32 physical adapters, all Remote I/O baud rates and all partial rack combinations. The module automatically sends the signals updating the block transfers at all the possible locations. Used as an adapter, the 1756-RIO operates as a controller that monitors the exchange of data with the existing system scanner. Powered by a 1756-Chassis power supply, the 1756-RIO module has a continuous isolation voltage of 50 Volts and has a basic isolation from the RIO communication lines to the backplane. The 1756-RIO requires two power supplies from the backplane and maximum current of 450 mA at 5.1 Volts DC and 5 mA at 24 Volts DC. The maximum power dissipation for the 1756-RIO is 2.5 Watts and it is installed on any chassis location. The maximum operating temperature for the 1756-RIO is 60 degrees Celsius and a minimum of 0 degrees Celsius.