

Allen-Bradley 1769 Series Service Manual

1769-IR6

1. Description

The Allen-Bradley 1769-IR6 is a Compact I/O module. This module is compatible for use with Resistance Temperature Detectors (RTD) and Resistance Input Signals. It has Six (6) individually configured input channels and occupies a single slot. It is compatible for use with a 1769 CompactLogix chassis or MicroLogix 1500. Technical specifications for 1769-IR6

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation / Allen-Bradley
Brand	Allen-Bradley
Part	Number/Catalog No. 1769-IR6
Product	Type: RTD / Resistance Input Module
Product	Line CompactLogix
Product	Family: Compact I/O
Module	Type RTD Module
Input	Type Resistance
No.	of Inputs: 6
Sensors	supported: 100, 200, 500, 1000 ? Platinum 385 100, 200, 500, 1000 ? Platinum 3916 120 ? Nickel 672 120 ? Nickel 618 10 ? Nickel-iron 518
Communication	Cable 6 Point
Resistance	signals: 150??, 500 ?, 1000 ? and 3000 ?.
Shipping	Weight 2 pounds
Compatible	Controllers: MicroLogix 1500; CompactLogix
Shipping	Dimensions 8 x 8 x 5 inches
Current	draw @ 5.1V: 100 mA
Series	A and B
Current	draw @ 24: 35 DC
Replacement	Door Part Number 1769-RD
Heat	dissipation, max: 1.5W
Replacement	Door Label Part Number 1769-RL2 series B
Converter	Type: Sigma Delta
Replacement	Terminal Block Part Number 1769-RTBN18
Nonlinearity:	±0.05%
Wire	Type Copper 90 degrees Celsius
Repeatability	(50/60 Hz filter): ±0.01 °C (0.018 °F) for Ni and NiFe ±0.2

3. Product Information

The Allen-Bradley 1769-IR6 is a Compact I/O module. This module is compatible for use with Resistance Temperature Detectors (RTD) and Resistance Input Signals. It has Six (6) individually configured input channels and occupies a single slot. It is compatible for use with a 1769 CompactLogix chassis or MicroLogix 1500. Technical specifications for 1769-IR6
Manufacturer Rockwell Automation / Allen-Bradley

Brand Allen-Bradley

Part Number/Catalog No. 1769-IR6

Product Type: RTD / Resistance Input Module

Product Line CompactLogix

Product Family: Compact I/O

Module Type RTD Module

Input Type Resistance

No. of Inputs: 6

Sensors supported: 100, 200, 500, 1000 Ω Platinum 385 100, 200, 500, 1000 Ω Platinum 3916 120 Ω Nickel 672 120 Ω Nickel 618 10 Ω Nickel-iron 518

Communication Cable 6 Point

Resistance signals: 150 Ω , 500 Ω , 1000 Ω and 3000 Ω .

Shipping Weight 2 pounds

Compatible Controllers: MicroLogix 1500; CompactLogix

Shipping Dimensions 8 x 8 x 5 inches

Current draw @ 5.1V: 100 mA

Series A and B

Current draw @ 24: 35 DC

Replacement Door Part Number 1769-RD

Heat dissipation, max: 1.5W

Replacement Door Label Part Number 1769-RL2 series B

Converter Type: Sigma Delta

Replacement Terminal Block Part Number 1769-RTBN18

Nonlinearity: $\pm 0.05\%$

Wire Type Copper 90 degrees Celsius

Repeatability (50/60 Hz filter): ± 0.01 $^{\circ}\text{C}$ (0.018 $^{\circ}\text{F}$) for Ni and NiFe ± 0.2 $^{\circ}\text{C}$ (0.36 $^{\circ}\text{F}$) for other RTD inputs ± 0.04 Ω for 150 Ω resistances ± 0.2 Ω for other resistances

Wire Size (Solid) 22 to 14 AWG

Open circuit detection time: 6 ms...303 s

UPC 10611320314417

Recommended Cable: 2-wire configuration: Belden 9501 or equivalent 3-wire configuration: Belden 9533 or equivalent 4-wire configuration: Belden 83503 or equivalent

UNSPSC 32151705 Description

The Allen-Bradley 1769-IR6 is a CompactLogix analog RTD/resistance input module that has Six (6) RTD input channels available. The input ranges of this module are 0 to 150 Ohms, 0 to 500 Ohms, 0 to 1000 Ohms, and 0 to 3000 Ohms and it has a maximum common mode voltage range of ± 10 Volts DC. The 1769-IR6 module has 1.5 Watts of power dissipation and it draws currents of 100 mA at 5.1 Volts and of 45 mA at 24 Volts. It also has an isolation voltage of 720 Volts DC for 1 minute from channel to bus, optical and magnetic (qualification), as well as a working voltage of 30 Volts AC/30 Volts DC. Its open circuit detection time ranges from 6 milliseconds to 303 seconds and it has impedances of 25 Ohms for the cable and of more than 10 megaohms for the input. The Allen-Bradley 1769-IR6 module has a built-in status LED available and it can be mounted using a DIN rail or panel. When using a panel, the 1769-IR6 module has an operating shock of 30 G, a relay operating shock of 7.5 G, and a non-operating shock of 40 G. A DIN-rail mounted module has an operating shock of 20 G, a relay operating shock of 5 G, and a non-operating shock of 30 G. It also has an operating vibration of 5 G at 10 to 100 Hertz and its non-condensing relative humidity range is 5 to 95%. This module has a removable terminal block (RTB) interface and an open-type enclosure. The entire 1769-IR6 module measures approximately 1.38 x 3.43 x 4.65 inches. The 1769-IR6 module supports an RTD and direct resistance signal measurement applications. This module digitally converts analog data and it stores the converted data. Each of the 6 supported channels provides open-circuit and short-circuit as well as over- and under-range detection and indication.

The Allen-Bradley 1769-IR6 is an analog input module which belong to the Compact I/O product family. This module is specifically used for Resistance Temperature Detectors (RTD) and Resistance signals. This module may be used with MicroLogix 1500 and 1769 CompactLogix controllers. This module also supports installation on distributed IO rack, provided that the communication adapters used are 1769-ADN DeviceNet and 1769-AENTR Ethernet adapter.

Up to support Six (6) RTD instruments may be wired to this module. Compatible RTD types, whether 2, 3 or 4-Wire RTDs are Copper 426, Nickel 618, Nickel 672, Nickel-Iron 518, Platinum 385, Platinum 3916. to 2, 3 and 4 wire RTDs. When using 4-wire RTD, one of the compensation wires is not terminated to the terminal. Aside from RTD sensors, this module supports direct wiring of resistance signals such as 150 Ω , 500 Ω , 1000 Ω and 3000 Ω .

Primarily, this module is designed for Temperature applications as RTD sensors are Temperature measuring devices. With resistance signal capability, this module may also be used in determining or measuring displacement or movement of a specific device. Common displacement measurement applications are found in factory automation requirements such as clamping, rotation and other similar tasks.

Each channel of the module is provided with an open circuit, short-circuit and over and under-range sensor detection. This module status may be linked to the controller's diagnostic buffered and further be used as signal quality indicator in Human Machine Interface (HMI) or Supervisory Control and Data Acquisition (SCADA). This way, a bad sensor may sensor or defective channel may be easily detected.

Signal filters are also provided and individually configured. Signal filtering frequency options include 10 Hz 50 Hz 60 Hz 250 Hz 500 Hz 1 kHz. 1769IR6 Allen Bradley INPUT MODULE
6POINT RTD/RESISTANCE AB Rockwell Automation

www.oilautotech.com