

Allen-Bradley 1769 Series Service Manual

1769 IF8

1. Description

The Allen-Bradley 1769-IF8 is a Compact I/O analog input module with Eight (8) input channels. This module is designed to interface field devices that sends 0-21 mA and +/- 10VDC analog signals. This module is compatible for use with a 1769 CompactLogix chassis or MicroLogix 1500 controller. Technical specifications for 1769-IF8

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation
Brand	Allen-Bradley
Part	Number/Catalog No. 1769-IF8
Product	Line CompactLogix
Module	Type Analog Input Module
Input	Type Analog Input
No.	of Inputs: 8 Inputs; Differential or Single Ended Inputs
Communication	Cable 8 Point
Power	Supply Distance rating: 8
Shipping	Weight 2 pounds
Input	current range: 0-21 mA
Shipping	Dimensions 8 x 8 x 5 inches
Current	signal normal ranges: 0-20mA; 4-20 mA
Series	A and B
Current	signal full range: 0-21 mA; 3.2 - 21 mA.
Distance	Rating 8 Modules
Input	voltage range: 0-10.5VDC
Working	Voltage Rating 30 Volts AC or 30 Volts DC
Voltage	signal normal ranges: $\pm 10V$ DC, 0 ...10V DC, 0...5V DC, 1...5V DC
Voltage	signal full range: $\pm 10.5V$ DC, -0.5...10.5V DC, -0.5...5.25V DC, 0.5...5.25V DC
Replacement	Terminal Block 1769-RTBN18
Compatible	Controllers: MicroLogix 1500; CompactLogix
Wire	Type: Copper 90 degree Celsius
Resolution:	16 bits (unipolar) 15 bits plus sign (bipolar)
Wire	Size (Solid) 22-14 AWG
Channel	Diagnostics: Over- or under-ran

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Communication Cable 8 Point

Power Supply Distance rating: 8

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Current signal full range: 0-21 mA; 3.2 - 21 mA.

Distance Rating 8 Modules

Input voltage range: 0-10.5VDC

Working Voltage Rating 30 Volts AC or 30 Volts DC

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Voltage signal full range: $\pm 10.5V$ DC, -0.5...10.5V DC, -0.5...5.25V DC, 0.5...5.25V DC

Replacement Terminal Block 1769-RTBN18

Compatible Controllers: MicroLogix 1500; CompactLogix

Wire Type Copper-90 degrees Celsius

Resolution: 16 bits (unipolar) 15 bits plus sign (bipolar)

Wire Size (Solid) 22-14 AWG

Channel Diagnostics: Over- or under-range by bit reporting, process alarms

UPC 10662468861134

Recommended cable: Belden™ 8761 (shielded)

Dimension: 118 mm (height) x 87 mm (depth) x 35 mm (width) [52.5 mm (width) for 1769-IF8] Height including mounting tabs is 138 mm 4.65 in (height) x 3.43 in (depth) x 1.38 in (width) [2.07 in (width) for 1769-IF8] Height including mounting tabs is 5.43 in Description

The 1769-IF8 compact I/O analog input module by Allen-Bradley is an analog input module with Eight (8) differential inputs and a voltage range of +/-10 Volts DC, 0 to 10 Volts DC, 0 to 5 Volts DC, and 1 to 5 Volts DC, and current range of 0 to 20 mA, and 4 to 0 mA.

The 1769-IF8 has a backplane draw current of 120 mA at 5 Volts DC, and 70 mA at 24 Volts DC, and it dissipates 3.64 Watts of heat when it is operational. It uses the Delta -Sigma analog to digital converter, which resolution of 16-bit unipolar or 15-bit plus sign. It has filter/configuration-dependent channel response speed. It has a maximum Bus draw current of 120 mA at 5 Volts DC and 70 mA at 24 Volts DC, with an input impedance of 220 kilohms at the voltage terminal and 250 ohms at the current terminal. The 1769-IF8 has a common offset voltage range of +/-10 Volts DC per channel, and a common mode rejection ratio greater than 60 dB at 50 to 60 Hertz. This analog input module has an overall accuracy of +/-0.2% for voltage signals and 0.35% for current signal while the overall drift accuracy of +/-0.003% for voltage and +/-0.0045% per degree Celsius for current signal. It also has +/-0.03% input non-linearity and +/-0.03% repeatability. The 1769-IF8 has an indicator light which displays the module's FAULT status. The 1769-IF8 performs automatic self-diagnostics of over- or under-range by bit reporting and it can also process alarms. It has a maximum input terminal overload of +/-30 Volts DC continuous at the voltage terminal at 0.1 mA, and an overload of +/-32 mA at +/-7.6 Volts DC. Its operational temperature range is between 0 and 60 degrees Celsius (32 and 140 degrees Fahrenheit) at a 95% limit of relative humidity with condensation. It weighs approximately 450 grams (0.99 pounds) and it has approximate dimensions of 118 x 87 x 52.5 millimeters.

The 1769-IF8 is a Compact I/O module that is manufactured by Allen-Bradley in compatibility with 1769 CompactLogix Controller and MicroLogix 1500 controllers. This controller features an embedded Eight (8) Input channels that support differential and single-ended wiring. Configurable signals are 0-20 mA and 4-20mA and +/-10VDC, 1-5VDC, 0-5VDC, 0-10VDC.

The Analog signal that is received by the input channels are individually converted using Delta-Sigma conversion method. The converted signal is stored within the processor's memory occupying 16 bits for unipolar and 15 bits for bipolar. Within the register is array of binary bits that represent the value of the input signal. To properly display the equivalent measurement or engineering values, the data is used conditioned using a Scale instruction. The data processed can be configured as engineering units, scaled for PID, percent range and raw data.

The power supply distance rating of 1769-IF8 is 8 modules. This refers to the physical module location which means it must not be installed 8 modules away from the 1769 CompactLogix power supply. This power supply distance rating ensures that the module will receive the appropriate backplane power. The catalog number 1769-IF8 is used for an analog input module produced by Allen-Bradley/Rockwell Automation in the CompactLogix I/O module series. The 1769-IF8 analog input module is customized for use in demanding industrial conditions and it complies with standards like the C-UL (CSA C22.2 No. 142), CE, and UL 508 standards. The environmental specifications include an operating temperature range of 0 to 60 degrees Celsius (32 to 140 degrees Fahrenheit), a storage temperature range of -40 to 85 degrees Celsius (-40 to 185 degrees Fahrenheit), shock resistance, vibration resistance, and a maximum operating altitude of 2000 meters (6561 feet) without derating.

The 1769-IF8 input module has an operating voltage range of +/-10 Volts DC, 0 to 10 Volts DC, 0 to 5 Volts DC, and 1 to 5 Volts DC. The module has 8 inputs which can be used as both differential and single-ended inputs. The module has a maximum bus current draw of 120 milliamps at 5 Volts DC or 70 milliamps at 24 Volts DC and a heat dissipation rating of 3.24 Watts. The 1769-IF8 module has 16 bits of resolution and it has an input filter and configuration-dependent response speed rating for each channel. The unit has a normal mode

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rejection ration of -50 decibels at 50/60 Hertz when the 10 Hertz filter is selected. The 1769-IF8 module has an overall accuracy of +/-0.2% full scale at the voltage terminal and +/-0.35% full scale at the current terminal. The dimensions of the 1769-IF8 module include 118 millimeters (4.65 inches) in height, 87 millimeters (3.43 inches) in depth, and 52.5 millimeters (2.07 inches) in width. In addition to that, the module weighs 450 grams (0.99 pounds).

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