

Allen-Bradley 1756 Series Service Manual

1756-IF6I

1. Description

Mfr. Part Number:

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation
Brand	Allen-Bradley
Part	Number/Catalog No. 1756-IF6I
Series	ControlLogix
Module	Type Analog Input
Inputs	6-Points, Isolated
Conversion	Method Sigma-Delta
Data	format Integer mode (left justified, 2 s complement) IEEE 32-bit floating point
Input	signal Range $\pm 10.5\text{V}$, 0 -10.5V, 0-5.25V and 0-21 mA
Input	Resolution 16 bits 10.5V: 343 ?V/bit 0...10.5V: 171 ?V/bit 0...5.25V: 86 ?V/bit 0...21 mA: 0.34 ?A/bit
Backplane	Current (5Volts) 250 mA
Backplane	Current (24Volts) 100 milliamps
Power	Dissipation (Max) Voltage: 3.7 W Current: 4.3 W
UPC	10612598164643
UNSPSC	32151705
Removeable	Terminal Blocks 1756-TBNH 1756-TBSH
Product	Lifecycle Status* Discontinued/Obsolete Description
The	Allen-Bradley 1756-IF6I is an Isolated Analog Voltage/Current Input Module. It has Six (6) individually isolated inputs and is part of the ControlLogix system. This module requires either the 20-pin 1756-TBNH or 1756-TBSH Removable Terminal Block (RTB) before it can be wired with input sign

3. Product Information

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1756-IF6I

Manufacturer: Allen-Bradley / Rockwell Automation

Description: Allen-Bradley 1756-IF6I ControlLogix Analog Input Module, Current/Voltage, 6 Pts

Full Description: Allen-Bradley 1756-IF6I ControlLogix Isolated Analog Input Module, Current/Voltage, 6 Point (20 Pin) The 1756-IF6I is a ControlLogix analog input module. It has 6 individually isolated Current and Voltage input channels compatible for input signal range of $\pm 10.5V$, 0 -10.5V, 0-5.25V and 0-21 mA. It has a resolution of 16 bits and compatible for interfacing with 2-Wire and 4-Wire signal transmitters. Technical specifications for 1756-IF6I

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Inputs 6-Points, Isolated

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Removeable Terminal Blocks 1756-TBNH 1756-TBSH

Product Lifecycle Status* Discontinued/Obsolete Description

The Allen-Bradley 1756-IF6I is an Isolated Analog Voltage/Current Input Module. It has Six (6) individually isolated inputs and is part of the ControlLogix system. This module requires either the 20-pin 1756-TBNH or 1756-TBSH Removable Terminal Block (RTB) before it can be wired with input signals. You can choose between two data formats for the 1756-IF6I: the integer mode and the floating-point mode. It has 16 significant bits and you can select which range to use for every channel on your module among the series of operational ranges. The available ranges and their respective resolutions are as follows: ± 10.5 Volts has 343 ?Volt/count , 0 to 10.5V has 171 ?Volt/count , 0 to 5.25 Volts has 86 ?Volt/count , and 0 to 21 milliamps has 0.34 ?A/count . When the isolated input module is operating beyond the limits set by the input range, the under-range/over-range detection feature will be activated. Line noise in your application in each channel can be removed using the module's analog-to-digital converter. Since each filter time affects the response time of your module and the highest frequency notch filter settings, limit the effective resolution of the channel. Remember to choose the notch filter that is the closest match to the anticipated noise frequency. A digital filter is also present and this smoothens out input data noise transients on each input channel. Real-time sampling, or RTS, is another feature of the 1756-IF6I. When you configure a module, you need to set a requested packet interval (RPI) period and a real-time sampling (RTS) period. Once these parameters are set, the module will scan its input channels and collect all available data and after scanning, the module will then multicast the data. It also has a wire off detection feature that triggers when a wire has been disconnected from a channel or when an RTB has been removed from the module. Additionally, the 1756-IF6I is equipped with rate alarm for applications using the floating-point mode. This monitors the rate of change between input samples. Each channel exceeding the specified trigger point for that channel will produce an alarm. Process alarms are also present and are triggered when the module has exceeded its configured high or low limits for every channel.

The Allen-Bradley 1756-IF6I is a ControlLogix analog input module. This module has Six (6) individually isolated analog input channels. This module is designed to receive $\pm 10.5V$, 0 -10.5V, 0-5.25V and 0-21 mA with resolution of 16 bits. Each channel has built-in input signal quality detection for monitoring and reference of control with reference to the signal quality.

For a $\pm 10VDC$ input, the minimum user count is 10.54688V and maximum user count of 10.54688V. Similarly, a 0-10VDC input has 0V- 10.54688V; 0-5VDC has 0V- 5.27344V; For 0-20mA has 0mA-21.09376V. These input signal range are converted by the analog input through the integrated analog to digital converter via Sigma-Delta conversion method. The actual resolution for each input signals are 343 ?V/bit for 10.5VDC, 171 ?V/bit for 0-10.5VDC; 86 ?V/bit for 0 to 5.25V and 0.34 ?A/bit for 0-21mA.

This module supports scaling to engineering units to provide a readable and usable user-data for use with Human Machine Interface (HMI) and Supervisory Control and Data Acquisition (SCADA). Aside for integration to computer-based monitoring and control systems, the scaled input is used by control logic such as arithmetic instruction or Proportional-Integral-Derivative (PID) algorithm as their Process Variable (PV) or Setpoint, depending on the control strategy implemented. The module also supports real-time data sampling with adjustable sampling times and On-board data alarming for self-diagnostics.

The Analog signals typically represent the magnitude of Process Variables (PV) such as Pressure, Level, Temperature, Flow, Speed, % Travel, Viscosity, Turbidity, Vibration and other Process Variables. Some instruments that produce analog signals are Transmitters, Transducers, Indicators, Strain-Gauges, displacers, potentiometers and other analog signaling instruments.**