

Allen-Bradley 1756 Series Service Manual

1756-IT6I2

1. Description

The Allen-Bradley 1756-IT6I2 analog I/O module is manufactured by Allen-Bradley/Rockwell Automation. This module is a superior thermocouple analog input unit. It is equipped with 6 separately isolated thermocouple inputs along with 2 CJC's. The accuracy of both the local and remote CJC sensor is +/- 0.3 degrees Celsius. The 1756-IT6I2 module can be attached to the ControlLogix chassis by using a removable terminal block (RTB casing) or 1756-TBNH to be precise. Both the operating input ranges as w

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation
Brand	Allen-Bradley
Part	Number/Catalog No. 1756-IT6I2
Series	ControlLogix
Inputs	6 Isolated Thermocouple, 2 CJC
Module	Type Analog Thermocouple Module
No.	of Inputs Six (6) Point Isolated Thermocouple Inputs
Input	Resolution 16 bits -12...78 mV: 1.4 μ V/bit (typical) -12...30 mV: 0.7 μ V/bit (high resolution range)Input Range
Module	Scan Time 25 ms min floating point (millivolt) 50 ms min floating point (temperature) 10 ms min integer (millivolt)(1)
Backplane	Current (24Volts) 120 milliamps
Data	Format Integer mode (left justified, 2s complement) IEEE 32-bit floating point
Supported	Sensors B, C, D, E, J, K, L, N, R, S, T
Backplane	Current (5Volts) 200 milliamps
Removeable	Terminal Blocks 1756-TBNH, 1756-TBSH
Backplane	Current (24 Volts) 150 milliamps
Backplane	Current at 24 Volts 2 milliamperes
Power	Dissipation (Max) 4.6 Watts
Removeable	Terminal Blocks 1756-TBNH
UPC	10612598299680 Description
The	Allen-Bradley 1756-IT6I2 is an analog I/O module. This modul

3. Product Information

The Allen-Bradley 1756-IT6I2 analog I/O module is manufactured by Allen-Bradley/Rockwell Automation. This module is a superior thermocouple analog input unit. It is equipped with 6 separately isolated thermocouple inputs along with 2 CJC's. The accuracy of both the local and remote CJC sensor is +/- 0.3 degrees Celsius. The 1756-IT6I2 module can be attached to the ControlLogix chassis by using a removable terminal block (RTB casing) or 1756-TBNH to be precise. Both the operating input ranges as well as the resolutions of the 1756-IT6I2 module are -12 to 30 mV (for a high-resolution range 0.7 microvolts per bit) and -12 to 78 microvolts (1.4 microvolts per bit). It also supports the 16-bit resolution. The 1756-IT6I2 module has an input impedance of more than 10MΩ and a maximum overvoltage protection of 120 Volts AC/DC. Both the maximum power dissipation and total backplane power are 4.6 Watts. There are types of thermocouple for this module which are the B, E, K, T, R, J, D S, N, C, and L (TXK/XK). The thermocouple linearization of the 1756-IT6I2 is ITS-90 while the offset drift is 0.5 microvolts per degree Celsius.

The Allen-Bradley 1756-IT6I2 comes with a settling time of more than 80 milliseconds to 5% of full-scale as well as 15 Hertz channel bandwidth. It has a thermal dissipation of 15.7 BTU/hour. The 1756-IT6I2 is an open circuit detection time that comes with positive full-scale reading in only 2 seconds. Also, this module has noise rejection, it is 60 dB at 60 Hertz in normal mode, and a minimum of 160 dB in common mode, tested at 600 Volts AC at 60 Hertz and applied with 100Ω differential resistance. The 1756-IT6I2 module allows users to choose the data format they want to use, whether it is an integer mode or a floating point mode. Other features of the 1756-IT6I2 module are multiple input ranges, a notch filter, cold junction compensation, a sensor type, temperature units, real-time sampling, wire off detection, 10 ohms offset, under-range/over-range detection, a digital filter which is only available in the applications via the floating point mode, process alarms, and a rate alarm. The 1756-IT6I2 is a ControlLogix analog input module. This is an enhanced Thermocouple input module that has Six (6) individually isolated Thermocouple and millivolt input channels. Compatible Thermocouple types are B, E, J, K, R, S, T, N, C, D, L (TXK/XK) with 16-bit resolution. It comes with a pair of CJC sensors. Technical specifications for 1756-IT6I2

Manufacturer Rockwell Automation

Brand Allen-Bradley

Part Number/Catalog No. 1756-IT6I2

Series ControlLogix

Inputs 6 Isolated Thermocouple, 2 CJC

Module Type Analog Thermocouple Module

No. of Inputs Six (6) Point Isolated Thermocouple Inputs

Input Resolution 16 bits -12...78 mV: 1.4 ?V/bit (typical) -12...30 mV: 0.7 ?V/bit (high resolution range)Input Range

Module Scan Time 25 ms min floating point (millivolt) 50 ms min floating point (temperature) 10 ms min integer (millivolt)(1)

Backplane Current (24Volts) 120 milliamps

Data Format Integer mode (left justified, 2s complement) IEEE 32-bit floating point

Supported Sensors B, C, D, E, J, K, L, N, R, S, T

Backplane Current (5Volts) 200 milliamps

Removeable Terminal Blocks 1756-TBNH, 1756-TBSH

Backplane Current (24 Volts) 150 milliamperes

Backplane Current at 24 Volts 2 milliamperes

Power Dissipation (Max) 4.6 Watts

Removable Terminal Blocks 1756-TBNH

UPC 10612598299680 Description

The Allen-Bradley 1756-IT6I2 is an analog I/O module. This module is an enhanced thermocouple analog input module. That features Six (6) individually isolated thermocouple inputs and 2 CJC inputs. Thermocouple types compatible for this module are B, E, J, K, R, S, T, N, C, D, and L (TXK/XK). This module is installed to any ControlLogix chassis. It requires a Removable Terminal Block for wiring of signal wiring, specifically, only the 1756-TBNH is compatible for this module. The operating input ranges and resolutions of the 1756-IT6I2 module are -12 to 78 microvolts (1.4 microvolts per bit) and -12 to 30 mV (0.7microvolts per bit for the highest resolution range) and 16-bit resolution respectively. It has an input impedance of more than 10MΩ and a maximum overvoltage protection of 120 Volts AC/DC. Both the total backplane power and maximum power dissipation are 4.6Watts. Its thermocouple linearization is ITS-90 and offset drift is 0.5 microvolts per Degree Celsius. It also has a settling time of greater than 80 milliseconds to 5% of full scale and a channel bandwidth of 15 Hertz. Thermal dissipation is 15.7 BTU/hour. The 1756-IT6I2 has an open circuit detection time with a positive full-scale reading of 2 seconds. The integrated noise rejection in normal mode, is 60 dB at 60 Hertz while in common mode, it is a minimum of 160 dB, tested at 600 Volts AC/60 Hertz applied with 100 Ohms differential resistance. This module allows data format selection such as integer mode or a floating-point mode. Other features of the 1756-IT6I2 module include cold junction compensation, multiple input ranges, temperature units, notch filter, sensor type, real-time sampling, wire off detection, under-range/over-range detection, 10 ohms offset, a digital filter (only available in applications using floating point mode), rate alarm, and process alarms.

The Allen-Bradley 1756-IT6I2 is a ControlLogix analog input module. This module is an enhanced Thermocouple Input module that is used for Temperature measurements. It supports a wide variety of Temperature range that varies according to the thermocouple type configured. This module supports stand-alone ControlLogix implementation or Distributed I/O technology.

It is compatible for use with ControlLogix processors and communications modules. The installation limit for this module depends on the processor memory and the available slot of a specific chassis.

The 1756-ITI2 is compatible for Thermocouple sensor types such as B, E, J, K, R, S, T, N, C, D, L (TXK/XK). It features 16-Bit resolution with an analog to digital conversion method of Sigma-Delta.

The data tables are used to store the signal processed by the module, the diagnostic state and configuration parameters. Depending on the parameter, a certain bit or registers may be read, written or both.

The information within the data table is capable of being mapped to a computer-based control system for providing a readout. They may also be used in specific parts of the user program for implementation of comparison instructions to be used in dynamically configurable process alarms, arithmetic instructions and control algorithms.