Allen-Bradley 1756 Series Service Manual

1756-IB16

1. Description

Mfr. Part Number:

2. Specifications

Specification	Value
Manufacturer	**Rockwell Automation**
Brand	**Allen-Bradley**
Part	**Number/Catalog No. 1756-IB16**
Series	**ControlLogix**
Inputs	**16**
Module	**Type Digital DC Input Module**
No.	**of Inputs Thirty-Two (32) Inputs**
Input	**Voltage 12-24 Volts DC Sink**
Operating	**Voltage Range 10-31.2 Volts DC**
Module	**Keying Electronic**
Maximum	**Operating Current 10 milliamperes at 31.2 Volts DC**
Input	**Delay Time 2 milliseconds plus selected filter time**
Maximum	**Input Current, Off-State 1.5 milliamperes**
Minimum	**Operating Current 2 milliamperes at 10 Volts DC**
Input	**Delay Time, OFF to ON Hardware delay: 290 µs nom/1 ms max + filter time**
Input	**Delay Time, ON to OFF Hardware delay: 700 µs nom/2 ms max + filter time**
Power	**Dissipation (Max) 5.1 W @ 60 °C (140 °F)**
Backplane	**Current at 24 Volts 2 milliamperes**
Backplane	**Current at 5.1 Volts 120 milliamperes**
UPC	**10612598171290**
Thermal	**Dissipation 21.1 BTU/hr @ 60 °C (140 °F)**
Removeable	**Terminal Block(s) 1756-TBCH 1756-TBS6H Description**
The	**Allen-Bradley 1756-IB16 is ControlLogix I/O module. This**

3. Product Information

Mfr. Part Number:

1756-IB16

Manufacturer: Allen-Bradley / Rockwell Automation

Description: Allen-Bradley 1756-IB16 ControlLogix Input Module, 10-31 VDC, 16 Points (20 Pin)

Full Description: Allen-Bradley 1756-IB16 ControlLogix Input Module, 10-31 VDC, 16 Points (20 Pin). Number of Inputs: 16; Voltage, On-State Input, Nom: 12/24V DC; Operating Voltage: 10-31.2V DC; Allen-Bradley 1756-IB16 ControlLogix Input Module can be used with 1756-TBNH or 1756-TBSH Removable Terminal Block Housing. The 1756-IB16 is a ControlLogix Discrete input module which operate at a voltage category of 10 to 31.2 VDC with a nominal voltage of 24VDC. This module has Sixteen sinking (16) input channels in Two (2) groups. This module is directly installed to a 1756 local or remote chassis. Technical specifications for 1756-IB16

Manufacturer Rockwell Automation

Brand Allen-Bradley

Part Number/Catalog No. 1756-IB16

Series ControlLogix

Inputs 16

Module Type Digital DC Input Module

No. of Inputs Thirty-Two (32) Inputs

Input Voltage 12-24 Volts DC Sink

Operating Voltage Range 10-31.2 Volts DC

Module Keying Electronic

Maximum Operating Current 10 milliamperes at 31.2 Volts DC

Input Delay Time 2 milliseconds plus selected filter time

Maximum Input Current, Off-State 1.5 milliamperes

Minimum Operating Current 2 milliamperes at 10 Volts DC

Input Delay Time, OFF to ON Hardware delay: 290 µs nom/1 ms max + filter time

Input Delay Time, ON to OFF Hardware delay: 700 µs nom/2 ms max + filter time

Power Dissipation (Max) 5.1 W @ 60 °C (140 °F)

Backplane Current at 24 Volts 2 milliamperes

Backplane Current at 5.1 Volts 120 milliamperes

UPC 10612598171290

Thermal Dissipation 21.1 BTU/hr @ 60 °C (140 °F)

Removeable Terminal Block(s) 1756-TBCH, 1756-TBSH Description

The Allen-Bradley 1756-IB16 is ControlLogix I/O module. This 16-point DC input module, with 8 points per group, can be connected to a 1756 ControlLogix chassis. The compatible removable terminal block housings, or RTB, are the 1756-TBNH 20 positions NEMA RTB and the 1756-TBSH 20 position spring clamp RTB. Note that before installation, users should have the compatible RTB on hand and that the 1756 chassis and power supply should be installed and grounded. The nominal input voltage of the 1756-IB16 module is 24 Volts DC, while the voltage category is 12/24 Volt DC sink. Its operating voltage range is 10 to 31.2 Volts DC and the total backplane power is 0.56W. The current draw at 5.1 Volts DC is 100 mA. At 24 Volts, the current draw is 2 mA. This module also has a maximum inrush current of 250 mA peak, which decays to 37% in 22 milliseconds, without activation. Its isolation voltage is 250 Volts continuous. The power dissipation of this module is around is 5.1 Watts at 60 Degrees Celsius and the thermal dissipation is 17.39 BTU/hour. The on-state current of this module ranges from 2.0 mA at 10 Volts DC to 10 mA at 31.2 Volts DC. At an off-state, it has a maximum voltage of 5V and a maximum current of 1.5 mA. The module's input delay time has a maximum of 1 ms hardware delay plus the user-configurable filter time (0, 1, or 2 milliseconds). It has a maximum hardware delay time of 2 milliseconds plus the user-configurable filter time (0, 1, 2, 9, or 18 milliseconds).

The Allen-Bradley 1756-IB16 is a DC sinking input module that operates at a nominal input voltage of 24VDC. This module is used with 24VDCinput signals however, may still be used with AC input voltages provided that an appropriate interposing circuitry or component is installed.

This module supports single-rack, stand-alone controller configuration for smaller and less critical application. It may also be used in larger applications where a higher degree of criticality is involved such a Remote I/O system or a Distributed Control System (DCS).

This module may be used as Discrete Input module of any ControlLogix configuration even, PlantPaX DCS platform of Allen-Bradley. There is virtually no limit with the number of installations of this module. The number of instances or installation depends on the Processor’s memory capability and the Physical chassis used or available slot.

The 1756-IB16 uses a Removable Terminal lock that provides a modular way of terminating input signals. It may be replaced with RTB part number of 1756-TBNH 1756-TBSH. It has a change of state property that is user-configurable and useful in applications that require immediate action when a certain input signal has changed to the defined state. Change of State (COS) bypasses the normal scan cycle of the processor for a faster logic execution.