

Allen-Bradley 1746 1747 Series Service Manual

1746-NI16V

1. Description

The Allen-Bradley 1746-NI16V is a SLC 500 Analog I/O Module. This Analog I/O Module has 16 Inputs and a Backplane Current (5 Volts) of 125 milliamps. It has a Bandwidth of 6-250 Hertz and a Resolution of 16 bits. Technical specifications for 1746-NI16V

2. Specifications

Specification	Value
Manufacturer	Rockwell Automation
Brand	Allen-Bradley
Part	Number/Catalog No. 1746-NI16V
Series	SLC 500
Module	Type Analog I/O Module
Backplane	Current (5 Volts) 125 milliamps
Inputs	Sixteen (16)
Backplane	Current (24 Volts DC) 75 milliamps
Electrical	Signal type ±10V dc, 1 to 5V dc, 0 to 5V dc, 0 to 10V dc,
Bandwidth	6-250 Hertz
Chassis	location Any I/O module slot except slot 0
Step	Response 9-630 milliseconds
Backplane	Current (5 Volts) 125 mA;(24 Volts DC) 75 mA
Applications	Combination 120 Volts AC I/O
Conversion	type Sigma - Delta
Input	Filtering Low-pass digital filter with programmable filter frequencies
Input	Filter Frequencies 6 Hz, 10 Hz, 20 Hz, 40 Hz, 60 Hz, 80 Hz, 100 Hz, 250 Hz
Isolation	500V ac isolation for 1 second
LED	Indicators 5 green status indicators one for each group of 4 channels, and one for module status
Recommended	Cable Belden #8761 or equivalent Description
The	1746-NI16V is an analog input module from the SLC 500 series of Allen-Bradley. It features Sixtee

3. Product Information

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Brand Allen-Bradley

Part Number/Catalog No. 1746-NI16V

Series SLC 500

Module Type Analog I/O Module

Backplane Current (5 Volts) 125 milliamps

Inputs Sixteen (16)

Backplane Current (24 Volts DC) 75 milliamps

Electrical Signal type $\pm 10\text{V}$ dc, 1 to 5V dc, 0 to 5V dc, 0 to 10V dc,

Bandwidth 6-250 Hertz

Chassis location Any I/O module slot except slot 0

Step Response 9-630 milliseconds

Backplane Current (5 Volts) 125 mA;(24 Volts DC)75 mA

Applications Combination 120 Volts AC I/O

Conversion type Sigma - Delta

Input Filtering Low-pass digital filter with programmable filter frequencies

Input Filter Frequencies 6 Hz, 10 Hz, 20 Hz, 40 Hz, 60 Hz, 80 Hz, 100 Hz, 250 Hz

Isolation 500V ac isolation for 1 second

LED Indicators 5 green status indicators one for each group of 4 channels, and one for module status

Recommended Cable Belden #8761 or equivalent Description

The 1746-NI16V is an analog input module from the SLC 500 series of Allen-Bradley. It features Sixteen (16) Voltage input channels compatible fir signal voltages of $\pm 10\text{V}$ dc, 1 to 5V dc, 0 to 5V dc, 0 to 10V dc.

The 1746-NI16I is a component that occupies any available slot of an SLC 500 chassis. This module may be installed to the local chassis or in the expansion chassis, to any available slot except slot 0 of the main chassis as it reserved for the controller. This module occupies only single slot of the chassis. The main chassis is the chassis to where the controller is installed.

This module has a replaceable terminal with part number 1746-RT25G. Pre-wired cables may also be used with this module. These pre-wired cables are manufactured by Allen-Bradley with variety of lengths. These pre-wired cables may be partnered with Allen-Bradley terminal blocks such as 1492-AIFM8-3 and 1492-AIFM16-F-3. When these are used, errors caused by manual wiring may be eliminated as the pre-wired termination system presents color coding of wire and easy to manage terminal block assembly.

This module is UL listed, C-UL approved and CE compliant for all applicable directives. It is also approved for use in Class I Division 2 Hazardous Environment.

The Allen Bradley 1746-NI16V is an Analog Input Module from the SLC 500 series. The 1746-NI16V communicates with an SLC 500 processor through a parallel rear-facing interface, and receives power from the SLC 500 power supply via a backplane. Its operating temperature lies between -25 to 60 degrees Celsius (-13 to 140 degrees Fahrenheit), while its nonoperating temperature lies between -40 to 85 degrees Celsius (-40 to 185 degrees Fahrenheit). The relative humidity of this module ranges from 5% to 95% without condensation. This module belongs to a Voltage Category of -10 to +10 Volts DC. The backplane current at 5 Volts is 125 mA; at 24 Volts, this module's backplane current is 75 mA. The backplane power consumption of this module is 2.425 Watts max (0.625 Watts at 5 Volts DC and 1.8 Watts at 24 Volts DC). Removing or inserting a module while a power source is connected can cause an electric arc to occur; remember to disconnect the power before removing or inserting this module. The Allen Bradley 1746-NI16V has 16 input channels and a 16-bit resolution. The common mode voltage range of this module is ± 10.25 Volts relative to the analog common terminal. Its input impedance is 20 Ω and its AIFM Connector is 25-pin D-shell. This module has Standard Cable Lengths of 0.5, 1, 2.5, and 5.0 meters. It has a Gain drift of 15 ppm/degree Celsius, and the Input offset drift of this module is 90 mV/degree Celsius. The Input resolution of this module is 312 mV.

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