

Allen-Bradley 1746-NI16I

The Allen-Bradley 1746-NI16I is a SLC 500 Analog I/O Module. This Analog I/O Module has Sixteen (16) Inputs configurable for 0 to 20 mA, 4 to 20 mA, ± 20 mA, and 0 to 1 mA. This module is a single-slot module.

Technical specifications for 1746-NI16I

Manufacturer Rockwell Automation

Brand Allen-Bradley

Part Number/Catalog No. 1746-NI16I

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 0 to 20 mA, 4 to 20 mA, ± 20 mA, and 0 to 1 mA

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

Thermal Dissipation 2.43 Watts

Conversion type Sigma - Delta

Applications Combination 120 Volts AC I/O

Input Filtering Low-pass digital filter with programmable filter frequencies

UPC 10611320228196

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

The Allen Bradley 1746-NI16I is an Analog Input Module, with 16-bit resolution and 16 input channels. This module falls into a Voltage Category of -20 to 20 mA. Its backplane current at 5 Volts is 125 mA, while 24 Volts results in 75 mA. Its backplane power consumption is 2.425 Watts maximum (0.625 Watts at 5 Volts DC and 1.8 Watts at 24 Volts DC). The common mode voltage range of this module is +/-10.25 Volts relative to the analog common terminal.

This unit has a relative humidity of 5% to 95% without condensation. Its operating temperature range is -25 to 60 degrees Celsius (-13 to 140 degrees Fahrenheit) while its nonoperating temperature lies between -40 and 85 degrees Celsius (-40 and 185 degrees Fahrenheit). Its Input impedance is 249; its maximum voltage input is ± 8 Volts between analog common and any input terminal, and the maximum current input is ± 30 mA. The thermal dissipation of this module is 2.43 Watts, and the AIFM Connector of this module is 25-pin D-shell. When installing

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modules in the chassis, it is not necessary to remove the terminal blocks from the module. However, if the terminal block is removed, use the label located next to the terminal block to identify the location and type of module.

Analog inputs are used to interface analog process variables to measure its magnitude. It is primarily used to monitor or used as feedback signal for closed loop control systems to implement manual or automatic control with the use of control methods typically Proportional-Integral-Derivative (PID) algorithm. Without this feedback signal, automatic control cannot be fully implemented.

Other parameters may also be defined to fine tune the module 's operation. It has a user selectable Data Format that such as Engineering Units, Scaled for PID, Proportional Counts with -32,768 to +32,767 range and Proportional Counts with User-Defined Range, Class 3 only. This module also features capability of detecting an open circuit with reference to the input channel. The module 's time to actuate is less than 5 Seconds. When wiring signals to the module, recommended cable is Belden #8761 or any equivalent may be used. Use a maximum wire size of 14 AWG. Up to Two (2) wires may be terminated per terminal. These are recommended to avoid cluttering and difficulty to close the module door.

This High-Resolution Analog Input module has 5 green status indicators one for each group of 4 channels, and one for module status to provide visual indication regarding the module 's state and channel operation.

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