Allen-Bradley 1746 1747 Series Service Manual

1746-FIO4V

1. Description

The Allen-Bradley 1746-FIO4V is a SLC 500 Analog Combination Module. This Analog Combination Module has Two (2) Inputs configurable for 0 to 20 mA or 0 to +10VDC and Two (2) Voltage outputs with nominal range of -10 to +10VDC. Technical specifications for 1746-FIO4V

2. Specifications

Specification	Value
Manufacturer	**Rockwell Automation**
Brand	**Allen-Bradley**
Part	**Number/Catalog No. 1746-FIO4V**
Series	**SLC 500**
Inputs	**2**
Module	**Type Analog Combination Module**
Outputs	**2**
No.	**of Inputs Two (2)**
Backplane	**Current (5 Volts) 55 milliamps**
Input	**Signal Type Voltage / Current**
Backplane	**Current (24 Volts) 150 milliamps**
Input	**Signal Range 0...20 mA (nom); 0...30 mA (max)**
B	**7 kilohertz**
Output	**Signal Type Voltage**
Output	**Signal Range -10 ... 10V - 1 LSB (normal)**
Update	**Time 512 microseconds**
Backplane	**Current (5 Volts) 55 milliamps; (24 Volts) 150 milliamps**
Step	**Response 100 milliseconds in, 2.5 milliseconds out**
Resolution	**12 bits in, 14 bits out Description**
The	**Allen-Bradley 1746-FIO4V SLC 500 fast analog combination module has Four (4) channels. In particular, it has Two (2) fast analog, differential voltage or current input channels, which are selectable by channel, and Two (2) voltage outputs which are grouped together. Its input channels have a 0-20 mA input range, a maximum absolute input voltage of +/- 7.5V**

3. Product Information

The Allen-Bradley 1746-FIO4V is a SLC 500 Analog Combination Module. This Analog Combination Module has Two (2) Inputs configurable for 0 to 20 mA or 0 to +10VDC and Two (2) Voltage outputs with nominal range of -10 to +10VDC. Technical specifications for 1746-FIO4V

Manufacturer Rockwell Automation

Brand Allen-Bradley

Part Number/Catalog No. 1746-FIO4V

Series SLC 500

Inputs 2

Module Type Analog Combination Module

Outputs 2

No. of Inputs Two (2)

Backplane Current (5 Volts) 55 milliamps

Input Signal Type Voltage / Current

Backplane Current (24 Volts) 150 milliamps

Input Signal Range 0...20 mA (nom); 0...30 mA (max)

B 7 kilohertz

Output Signal Type Voltage

Output Signal Range –10 ... 10V – 1 LSB (normal)

Update Time 512 microseconds

Backplane Current (5 Volts) 55 milliamps; (24 Volts) 150 milliamps

Step Response 100 milliseconds in, 2.5 milliseconds out

Resolution 12 bits in, 14 bits out Description

The Allen-Bradley 1746-FIO4V SLC 500 fast analog combination module has Four (4) channels. In particular, it has Two (2) fast analog, differential voltage or current input channels, which are selectable by channel, and Two (2) voltage outputs which are grouped together. Its input channels have a 0-20 mA input range, a maximum absolute input voltage of +/- 7.5V DC or of 7.5V AC RMS, a maximum absolute input current of 0-30 mA. The output channels of this module come with -10 to +10VDC -1 LSB. The 1746-FIO4V also comes with field wiring to a backplane isolation of 500V DC.

This module makes use of a 16-bit two's complement binary communication. The backplane current ratings are 55 mA at 5 V and 150 mA at 24V while the step response time of the 1746-FIO4V is 100 milliseconds in and 2.5 milliseconds out at 95%, while its update time is 512 milliseconds. Its resolution is 12 bits in and 14 bits out, and its bandwidth is 7 KHz. This module comes with a LED status indicator. 1746-FIO4V uses a chassis mount and it is enclosed in an open-type enclosure, with the 1746-FIO4V module compatible with a 14 AWG connecting cable. Its non-condensing relative humidity is 5-95%.

The Allen-Bradley 1746-FIO4V is a Fast Analog Combination module that features Two (2) Current input and Two (2) Voltage output channels. This module is exclusively used for the SLC 500 controller platform from Rockwell Automation.

The module's input current range is 0 to 20 mA nominal and a maximum of 0-30mA. With each channel configurable Electrical Standard signal of 0-20 mA or 4-20 mA. If configured for Voltage input, input voltage range is 0 to 10VDC with configurable standard signals of 0 to 5VDC, 1 to 5 VDC and 0 to 10VDC. This analog input represents the Process Variable (PV) of the process whether Open loop, Closed Loop or monitoring loop. Typically, the received analog signal is conditioned to convert to engineering units which is more popularly known as Scaling.

The module's analog output range is -10 to +10VDC. It may also be configured to provide standard voltage outputs of 0 to 5 VDC, 1 to 5 VDC, 0 to 10VDC and -10 to 10VDC. The analog output may come from an internal computation, scaling logic or an output of a Proportional-Integral-Derivative (PID) control. This output may be used to implement modulating control of Valves, Variable Frequency Drives (VFD), Positioners, Converters and transducers as well as interface to indicators, data loggers and recorders.

When installing this module to the chassis, consider the effects of Ambient Temperature and Electrical Noise. As much as possible, install this module away from AC voltage or high level of DC voltage, away from the rack power supply or in a IO rack that is exposed in more ambient temperature.