Allen-Bradley 1746-HSCE Manual

Brand	Allen-Bradley
Product Series	1746 1747
Product Type	High-Speed Counter module

Description

The Allen-Bradley 1746-HSCE is a High-Speed counter module. This module is part of the SLC500 Programmable Logic Controller (PLC) platform. It features bidirectional counting and comes with inputs A, B and Z compatible with nominal signal voltages of 5VDC differential input and 0-5VDC single ended input with maximum input frequency of 50 kHz. It also has a limit switch input Technical specifications for 1746-HSCE
Manufacturer Rockwell Automation
Module Type High-Speed Counter module
Series SLC 500
Part Number/Catalog No. 1746-HSCE
Brand Allen-Bradley
Backplane Current 320 mA at +5V; 0 mA at +24V
Maximum cable length 305 m (1000 ft)
Recommended cable Belden 9503 or equivalent
No. of channels One (1) counting channel
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Input voltage ±5V dc (Differential); 0-5VDC (Single-ended)
Min. Pulse width 10 µs
Min. Pulse separation 4.5 µs
Max. Input Frequency Sequencer and Range: 50k Hz Rate: 32.767k Hz
No. of outputs Four (4) open-collector outputs
On-State output Current 16 mA at 4.5V dc 40 mA at 10V dc; 40 mA at 10V dc 125 mA at 30V dc
Operating Temperature 0°C to +60°C (+32°F to +140°F)
Storage Temperature -40°C to +85°C (-40°F to +185°F)
Relative Humidity 5 to 95% (without condensation)
Inputs 1 Count Input
Outputs 4
Input Frequency Range 50 kilohertz
Backplane Current (5 Volts) 32 milliamps
I/O Connection 1746-RT25G
Update Time 4.8 milliseconds
Slots 1
Step Response 100 milliseconds in, 2.5 milliseconds out
Isolation Voltage 1500 Volts
UPC 10662073893681 Description
The Allen-Bradley 1746-HSCE is a High-Speed counter module from the SLC 500 Product family. This module is installed to any type of SLC500 chassis and mounted directly to an available slot. It may be installed locally, along the SLC500 CPU, or remotely along a SLC500 communication adapter.

The 1746-HSCE is used for bidirectional counting requirements, motion detection, totalizing and other applications that require processing of High-Speed discrete inputs. This module is typically found in factory automation applications however, highly applicable as well in process automation requirements. This high-speed counter module may be configured to operate in different modes such

as Range mode, Rate mode and Sequencer mode.

The 1746-HSCE features input A, B and Z with nominal input voltage of 5VDC for differential wiring and 0-5VDC for Single-ended wiring. It accepts a minimum pulse width of 10 µs duration with pulse separation of 4.5 µs. The accepted input frequencies of these input sets depend on the configured mode of the module. When operating as Sequencer mode, the compatible maximum input frequency is 50 kHz and 32,767kHz when operating in Range Rate mode. Additionally, the 1746-HSCE has a limit switch input with ON-state voltage range of 3.8-5.4VDC, 9.4-16.5VDC and 16.5-30VDC @ 5VDC, 12VDC and 24VDC nominal voltages, respectively.

The 1746-HSCE also has Four (4) open collector outputs which operate at voltage levels of 4.5 to 10V dc and (Switch 2 on) and 10 to 30V dc (Switch 2 off) with ON-state current ratings of 16 mA at 4.5V dc 40 mA at 10V dc and 40 mA at 10V dc 125 mA at 30V dc.

For troubleshooting and diagnostics, it has built-in diagnostic LEDs such as CPU fault LEDs, fault code, error code. It also has an internal status word residing within the input data files. It is intended for use in an industrial environment and must be installed in a NEMA rated enclosure.

Technical Specifications

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