

Allen-Bradley 1769 Series Service Manual

1769-HSC

1. Description

Mfr. Part Number:

2. Specifications

Specification	Value
Operating	Temperature 0-60 Degree Celsius
Shipping	Weight 130 g (0.286 lb)
Part	Number/Catalog No. 1769-HSC
Brand	Allen-Bradley
Manufacturer	Rockwell Automation
Product	Type: Counter Module
No.	of Inputs: 2 quadrature (ABZ) differential inputs
No.	of Outputs: 16 total, 4 physical and 12 virtual
On-State	Current: 1 A per point; 4 A per module
Dimension:	118 x 35 x 87 mm (4.65 x 1.38 x 3.43 in.) Height including mounting tabs is 138 mm (5.43 in.)
Bus	Current Draw @ 5.14Vdc: 425 mA
Bus	Current Draw @ 24Vdc: 0 mA
Power	Supply Distance Rating: Module cannot be more than four modules away from a system power supply
Isolation	Voltage: 75V (continuous), reinforced insulation type, channel-to- system and channel-to-channel Type tested at 1200V AC for 2 s
Recommended	Cable: Individually shielded, twisted-pair cable (or the type recommended by the encoder or sensor manufacturer
Wire	size: 0.32... 2.1 mm2 (22...14 AWG) solid copper wire or 0.32...1.3 mm2 (22...16 AWG) stranded copper wire rated at 90 °C (

3. Product Information

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Mfr. Part Number:

1769-HSC

Manufacturer: Allen-Bradley / Rockwell Automation

Description: Allen-Bradley 1769-HSC CompactLogix 2/4-Ch High Speed Counter/Encoder

Full Description: Allen-Bradley 1769-HSC CompactLogix 2/4 Channel High Speed Counter/Encoder Module

UPC / GTIN: 10612598286208

Status: Current Product The Allen-Bradley 1769-HSC is a Compact I/O module. This module is a High-Speed Counter module that is compatible with CompactLogix and MicroLogix 1500 controllers. It comes with Two (2) quadrature (ABZ) differential inputs and input frequency of 1 MHz. It also has Four (4) physical and Twelve (12) virtual outputs. Technical specifications for 1769-HSC

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Wire size: 0.32... 2.1 mm2 (22...14 AWG) solid copper wire or 0.32...1.3 mm2 (22...16 AWG) stranded copper wire rated at 90 °C (194 °F) insulation max

Product Line CompactLogix

Module Type High Speed Counter Module

Shipping Dimensions 8 x 8 x 5 inches

Series A and B

Enclosure Type Open

Maximum Bus Current Draw 5 mA at 5 Volts DC

Backplane Current 1.4 Amps at 24 Volts

Power Consumption 33.6 Watts

Power Dissipation 7.5 Watts

UPC 10612598286208 Description

The Allen-Bradley 1769-HSC is a Compact I/O module that is used to interface signaling devices with high-frequency switching. Specifically, this module is typically used for counter applications, totalizer requirements and position monitoring and control.

This module is part of the 1769 Compact I/O modules and compatible for use in both the CompactLogix and MicroLogix Programmable Automation Controllers (PAC) and Programmable Logic Controllers (PLC) respectively. It can be used to directly interface with encoders, pulse output of Transmitters and direct connection with fast sensing devices. The 1769-HSC features Two (2) quadrature (ABZ) differential inputs with input voltage range of 2.6...30V DC. It accepts a minimum pulse width of 250 ns and Pulse separation of 131 ns. The output channels of this module consists of Four (4) physical and Twelve (12) virtual outputs with output voltage range of 5-30VDC. Each channel has a maximum On-state current of 1A per point, for a total of 4 Amperes per module.

The input channels of the module has a frequency of 1MHz for counter and encoder functions. The integrated channels accept an input voltage range of 2.6 - 30Vdc that includes Four (4) onboard 5-30Vdc sourcing outputs intended for high-speed control requirements such as position, speed and motion.

The 1769-HSC must be installed not more than Four (4) modules away from the power as indicated by the power supply distance rating requirement. It does not support removal under power thus, it is not recommended to install and uninstall the module under such condition.

The 1769-HSC features a 1 Mhz counter/encoder input frequency with Four (4) on-board sourcing outputs of 5 to 30 Volts DC. It is necessary for high-speed control applications that include flow control, measuring length, position, speed, frequency, or duration. The 1769-HSC module has 425 mA at a 5 Volt DC bus current draw and 0 mA at a 24 Volt DC bus current draw. It has a heat dissipation peak 6.21 Watts and an isolation voltage of 75 Volts reinforce insulation test to withstand 1200 Volts AC for 2 seconds. The 1769-HSC has a 90 degree Celsius or 194 degrees Fahrenheit wire type and its wire can reach up to 22 to 14 AWG solid copper wire or 22 to 16 AWG stranded copper wire rated at 90 degrees Celsius (194 degrees Fahrenheit) insulation. The cable should be an individually-shielded or twisted-pair cable. The module's wiring category is 2 on signal ports and the enclosure type rating is open-style. The 1769-HSC module has 2 quadrature differential inputs and input voltage that ranges 2.6 to 30 Volts DC. It has a minimal ON-state current 6.8 mA and OFF-state voltage max is 1.0 Volt DC. Its OFF-state current and leakage current is 1.5 mA. The module's input current max is 15 mA and 6.8 mA minimal input current. The module has a 1950 Ohm input impedance and a pulse width of 259 ns. It comes with a minimal phase separation of 131 ns. It has voltage output range 5 to 30 Volts DC and user power -0.1 Volts DC On-state max voltage. Its reverse polarity protection is at 30V DC. The 1769-HSC's turn-on time max is 400 µs and minimal 200 µs turn off time. Its operating temperature is 0 to 60 degrees Celsius and non-operating -40 to 85 degrees Celsius; the maximum surrounding air temperature is 40 degrees Celsius.

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