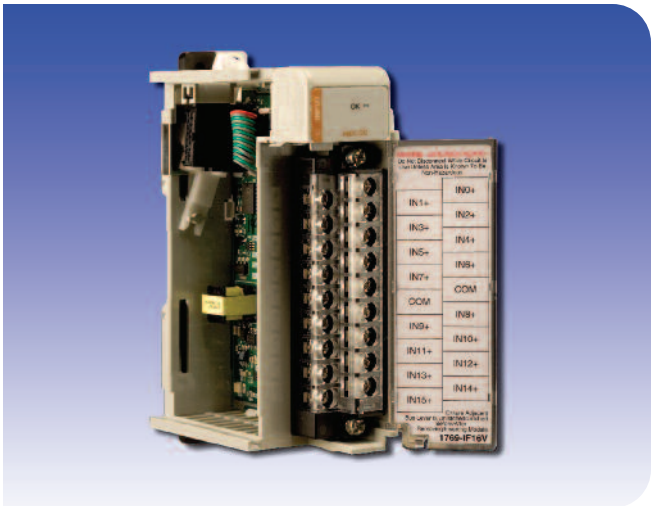
Compact High-Density Analog Input Modules
1769-IF16C and –IF16V Compact I/O Modules

A cost-effective solution for small controller applications that require considerable analog I/O

Why purchase, install and maintain two eight-channel analog modules when you can reduce panel space and maintenance requirements and save money with a single compact high-density analog I/O module that offers excellent performance? Only Rockwell Automation offers you this option with its 16-channel Compact High-Density Analog Input Modules.



High density and excellent performance

The new 16-channel Compact High-Density Analog Input Modules provide efficient use of rack space and lower cost per point as compared to competitive eight-input analog modules. They also provide excellent performance with accuracy ranging from 0.35% to 0.5% of full scale. The modules perform continuous auto-calibration to maintain high accuracy over temperature changes; no field calibration is required.

Diagnostic feedback and simple configuration

You can configure each channel simply and individually without interrupting CPU operation with easy-to-use programming software. Machine uptime is improved and troubleshooting time reduced with the help of diagnostic status bits for over-or under-range, process alarm and open circuit detection. Process alarms alert you when the module has exceeded the high or low limits you have configured for each channel. Additionally, you can configure a deadband alarm to work with the process alarms. The deadband lets the process alarm status bit remain set when an alarm condition disappears for as long as the input data remains within the deadband of the process alarm.

General Specifications

Attribute	Value
Dimensions (HxWxD), approx.	118 mm x 87 mm x 35 mm (4.65 in. x 3.43 in. x 1.38 in.) Height including mounting tabs is 138 mm (5.43 in.)
Shipping weight, approx. (with carton)	281 g (0.62 lb)
Temperature, storage	-40 °C…85 °C (-40 °F…185 °F)
Temperature, operating	0 °C…60 °C (32 °F…140 °F)
Operating humidity	5% …95% non-condensing
Operating altitude	2000 m (6561 ft)
Vibration	Operating: 10…500 Hz, 5 g, 0.030 in. peak-to-peak
Shock	Operating: 30 g, 11 ms panel-mounted (20 g, 11 ms DIN rail-mounted) Non-operating: 40 g panel-mounted (30 g DIN rail-mounted)
Bus current draw, max	190 mA @ 5V DC 70 mA @ 24V DC
Heat dissipation	1769-IF16C: 4 total Watts 1769-IF16V: 2.4 total Watts (Watts per point plus the minimum Watts with all points energized.)
Module OK status indicator	On: The module has power, has passed internal diagnostics, and is communicating over the bus. Off: Any of the above is not true.
System power supply distance rating	The module may not be more than 8 modules away from the system power supply.
Recommended cable	Belden 8761 (shielded)
Vendor I.D. code	1
Product type code	10
Product code	1769-IF16C: 47 1769-IF16V: 46
Input words	22
Output words	2
Configuration words	98

Input Specifications

Attribute	1769-IF16C	1769-IF16V
Analog normal operating ranges(1)	0…20 mA, 4…20 mA	±10V DC, 0 …10V DC, 0…5V DC, 1…5V DC
Full scale analog ranges(1)	0…21 mA, 3.2…21 mA	±10.5V DC, -0.5…10.5V DC, -0.5…5.25V DC, 0.5…5.25V DC
Number of inputs	16 single-ended	
Converter type	Sigma Delta	
Response speed per channel	Input filter and configuration dependent.	
Resolution, max(2)	16 bits (unipolar) 15 bits plus sign (bipolar)	
Rated working voltage(3)	30V AC/30V DC	
Common mode voltage range(4)	±10V DC maximum per channel	
Common mode rejection	greater than 60 dB at 50 and 60 Hz with the 16 Hz filter selected, respectively.	
Input impedance	249 Ω	Greater than 1 MΩ (typical)
Overall accuracy(5)	0.5% full scale at 25 °C (77 °F) for 16 Hz, 50 Hz, and 60 Hz filters	0.35% full scale at 25 °C (77°F) for 16 Hz, 50 Hz, and 60 Hz filters
Accuracy drift with temperature	±0.0045% per °C	±0.003% per °C
Calibration	None required	None required
Non-linearity (in percent full scale)	±0.03%	±0.03%
Repeatability(6)	±0.03% for 16 Hz filter	±0.06% for 16 Hz filter
Module error over full temperature range (0…60 °C [32 °F…140 °F])	1.25% for 16 Hz filter	1.0% for 16 Hz, 50 Hz, and 60 Hz filters
Channel diagnostics	Over- or under-range by bit reporting, process alarms	
Maximum overload at input terminals(7)	±28 mA continuous, 7.0 V DC	±30V DC continuous, 0.03 mA
Input group to bus isolation	500V AC or 710V DC for 1 minute (qualification test) 30V AC/30V DC working voltage (IEC Class 2 reinforced insulation)	

(1) The over- or under-range flag will come on when the normal operating range (over/under) is exceeded. The module will continue to convert the analog input up to the maximum full scale range. The flag automatically resets when within the normal operating range.
(2) Resolution is dependent upon your filter selection.
(3) Rated working voltage is the maximum continuous voltage that can be applied at the input terminal, including the input signal and the value that floats above ground potential (for example, 10V DC input signal and 20V DC potential above ground).
(4) For proper operation, the plus input terminals must be within ±10V DC of analog common.
(5) Includes offset, gain, non-linearity and repeatability error terms.
(6) Repeatability is the ability of the input module to register the same reading in successive measurements for the same input signal.
(7) Damage may occur to the input circuit if this value is exceeded.

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