

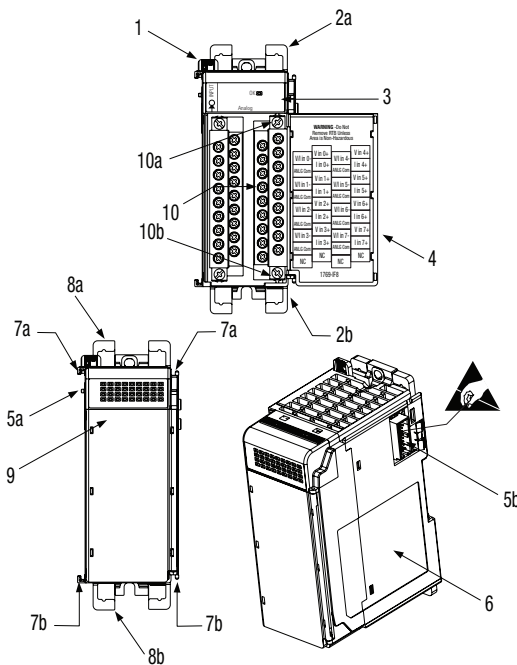


Compact I/O 1769-IF8 Analog Input Module

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Module Description



Item	Description
1	bus lever (with locking function)
2a	upper panel mounting tab
2b	lower panel mounting tab
3	module status LED
4	module door with terminal identification label
5a	movable bus connector with female pins
5b	stationary bus connector with male pins
6	nameplate label
7a	upper tongue-and-groove slots
7b	lower tongue-and-groove slots
8a	upper DIN rail latch
8b	lower DIN rail latch
9	write-on label (user ID tag)
10	removable terminal block (RTB) with finger-safe cover
10a	RTB upper retaining screw
10b	RTB lower retaining screw

Specifications

General Specifications

Specification	Value
Dimensions	118 mm (height) x 87 mm (depth) x 52.5 mm (width) height including mounting tabs is 138 mm 4.65 in. (height) x 3.43 in (depth) x 2.07 in (width) height including mounting tabs is 5.43 in.
Approximate Shipping Weight (with carton)	450g (0.99 lbs.)
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Operating Temperature	0°C to +60°C (32°F to +140°F)
Operating Humidity	5% to 95% non-condensing
Operating Altitude	2000 meters (6561 feet)
Vibration	Operating: 10 to 500 Hz, 5G, 0.030 in. peak-to-peak
Shock	Operating: 30G, 11 ms panel mounted (20G, 11 ms DIN rail mounted) Non-Operating: 40G panel mounted (30G DIN rail mounted)
Agency Certification	• C-UL certified (under CSA C22.2 No. 142) • UL 508 listed • CE compliant for all applicable directives
Hazardous Environment Class	Class I, Division 2, Hazardous Location, Groups A, B, C, D (UL 1604, C-UL under CSA C22.2 No. 213)
Radiated and Conducted Emissions	EN50081-2 Class A
Electrical /EMC:	<i>The module has passed testing at the following levels:</i>
• ESD Immunity (IEC1000-4-2)	• 4 kV contact, 8 kV air, 4 kV indirect
• Radiated Immunity (IEC1000-4-3)	• 10 V/m , 80 to 1000 MHz, 80% amplitude modulation, +900 MHz keyed carrier
• Fast Transient Burst (IEC1000-4-4)	• 2 kV, 5kHz
• Surge Immunity (IEC1000-4-5)	• 1 kV galvanic gun
• Conducted Immunity (IEC1000-4-6)	• 10 V, 0.15 to 80MHz⁽¹⁾

⁽¹⁾ Conducted Immunity frequency range may be 150 kHz to 30 MHz if the Radiated Immunity frequency range is 30 MHz to 1000 MHz.

Input Specifications

Specification	1769-IF8
Analog Normal Operating Ranges ⁽¹⁾	Voltage: $\pm 10\text{V dc}$, 0 to 10V dc, 0 to 5V dc, 1 to 5V dc Current: 0 to 20 mA, 4 to 20 mA
Full Scale Analog Ranges ⁽¹⁾	Voltage: $\pm 10.5\text{V dc}$, 0 to 10.5V dc, 0 to 5.25V dc, 0.5 to 5.25V dc Current: 0 to 21 mA, 3.2 to 21 mA
Number of Inputs	8 differential or single-ended
Bus Current Draw (max.)	120 mA at 5V dc 70 mA at 24V dc
Heat Dissipation	3.24 Total Watts (The Watts per point, plus the minimum Watts, with all points energized.)
Converter Type	Delta Sigma
Response Speed per Channel	Input filter and configuration dependent. See your user's manual.
Resolution (max.) ⁽²⁾	16 bits (unipolar) 15 bits plus sign (bipolar)
Rated Working Voltage ⁽³⁾	30V ac/30V dc
Common Mode Voltage Range ⁽⁴⁾	$\pm 10\text{V dc}$ maximum per channel
Common Mode Rejection	greater than 60 dB at 50 and 60 Hz with the 10 Hz filter selected, respectively.
Normal Mode Rejection Ratio	-50 dB at 50 and 60 Hz with the 10 Hz filter selected, respectively.
Input Impedance	Voltage Terminal: 220K Ω (typical) Current Terminal: 250 Ω
Overall Accuracy ⁽⁵⁾	Voltage Terminal: $\pm 0.2\%$ full scale at 25°C Current Terminal: $\pm 0.35\%$ full scale at 25°C

⁽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. The maximum resolution is achieved with the 10 Hz filter selected. For resolution with other filter selections, refer to the user manual, publication 1769-UM002A-EN-P.

⁽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, both the plus and minus input terminals must be within $\pm 10\text{V dc}$ of analog common.

⁽⁵⁾ Includes offset, gain, non-linearity and repeatability error terms.

Specification	1769-IF8
Accuracy Drift with Temperature	Voltage Terminal: $\pm 0.003\%$ per $^{\circ}\text{C}$ Current Terminal: $\pm 0.0045\%$ per $^{\circ}\text{C}$
Calibration	The module performs autocalibration on channel enable and on a configuration change between channels.
Non-linearity (in percent full scale)	$\pm 0.03\%$
Repeatability ⁽¹⁾	$\pm 0.03\%$
Module Error over Full Temperature Range (0 to $+60^{\circ}\text{C}$ [$+32^{\circ}\text{F}$ to $+140^{\circ}\text{F}$])	Voltage: $\pm 0.3\%$ Current: $\pm 0.5\%$
Input Channel Configuration	via configuration software screen or the user program (by writing a unique bit pattern into the module's configuration file). Refer to your controller's user manual to determine if user program configuration is supported.
Module OK LED	On: module has power, has passed internal diagnostics, and is communicating over the bus. Off: Any of the above is not true.
Channel Diagnostics	Over- or under-range by bit reporting, process alarms
Maximum Overload at Input Terminals ⁽²⁾	Voltage Terminal: $\pm 30\text{V}$ dc continuous, 0.1 mA Current Terminal: $\pm 32\text{ mA}$ continuous, $\pm 7.6\text{ V}$ dc
System Power Supply Distance Rating	8 (The module may not be more than 8 modules away from the system power supply.)
Recommended Cable	Belden™ 8761 (shielded)
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)
Vendor I.D. Code	1
Product Type Code	10
Product Code	38

⁽¹⁾ Repeatability is the ability of the input module to register the same reading in successive measurements for the same input signal.

⁽²⁾ Damage may occur to the input circuit if this value is exceeded.