

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	
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.

Certifications

Certification	Value
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:	The module has passed testing at the following levels:
ESD Immunity (IEC1000-4-2)	4 kV contact, 8 kV air, 4 kV indirect
Radiated Immunity (IEC1000-4-3)	10 V/m, 80...1000 MHz, 80% amplitude modulation, +900 MHz keyed carrier
Fast Transient Burst (IEC1000-4-4)	2 kV, 5 kHz
Surge Immunity (IEC1000-4-5)	1 kV galvanic gun
Conducted Immunity (IEC1000-4-6)	10V DC, 0.15...80 MHz ⁽¹⁾

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

Replacement Parts

The module has the following replacement parts:

- Terminal block, catalog number 1769-RTBN18 (1 per kit)
- Door, catalog number 1769-RD (2 per kit)