

1769 Compact I/O Modules Specifications

Catalog Numbers

Digital I/O Modules	1769-IA8I, 1769-IA8IK, 1769-IA16, 1769-IA16K, 1769-IM12, 1769-OA8, 1769-OA16, 1769-OA16K, 1769-IG16, 1769-IQ16, 1769-IQ16K, 1769-IQ16F, 1769-IQ32, 1769-IQ32K, 1769-IQ32T, 1769-IQ6XOW4, 1769-OB8, 1769-OB8K, 1769-OB16, 1769-OB16K, 1769-OB16P, 1769-OB32, 1769-OB32K, 1769-OB32T, 1769-OG16, 1769-OV16, 1769-OV32T
Contact I/O Modules	1769-OW8, 1769-OW8I, 1769-OW8IK, 1769-OW16, 1769-OW16K
Analog I/O Modules	1769-IF4, 1F4K, 1769-IF4I, 1769-IF4XOF2, 1769-IF4XOF2K, 1769-IF4FXOF2F, 1769-IF8, 1769-IF8K, 1769-IF16C, 1769-IF16V, 1769-IR6, 1769-IT6, 1769-OF2, 1769-OF2K, 1769-OF4, 1769-OF4K, 1769-OF4CI, 1769-OF4VI, 1769-OF8C, 1769-OF8V
Specialty Modules	1769-ARM, 1769-ASCII, 1769-BOOLEAN, 1769-HSC, 1769-SM2
Accessories	1769-ECL, 1769-ECLK, 1769-ECR, 1769-ECRK, 1769-ECL, 1769-ECLK, 1769-ECR, 1769-ECRK, 1769-CLL1, 1769-CRR1, 1769-CRL1, 1769-CLL3, 1769-CRR3, 1769-CRL3

Topic	Page
Summary of Changes	2
I/O Module Overview	2
Environmental Specifications	2
Certifications	3
Place Compact I/O Modules	4
Digital I/O Modules	5
Contact I/O Modules	25
Analog I/O Modules	29
Specialty I/O Modules	53
Compact I/O Mounting Dimensions	61
Compact I/O Accessories	61
Wiring Systems	64
Additional Resources	65

The 1769 Compact I/O™ modules can be used in these applications:

- With a 1769 CompactLogix™ controller
- For expansion I/O in a MicroLogix™ 1500 controller assembly
- In an assembly with a 1769-ADN DeviceNet® adapter
- In an assembly with a 1769-AENTR Ethernet adapter

Unless connected to a MicroLogix 1500 base, each bank of I/O modules must include its own power supply.

Install the I/O modules on a panel with two mounting screws or on a DIN rail. The modules mechanically lock together with a tongue-and-groove design and have an integrated communication bus that is connected from module to module by a movable bus connector.

Analog I/O Modules

Choose analog, thermocouple, or RTD modules for these features:

- Individually configurable channels
- Ability to enable and disable channels individually
- Onboard scaling
- Auto calibration of inputs
- Online configuration
- Selectable input filters
- Overage and underrange detection and indication
- Selectable response to a broken input sensor
- Selectable power source
- Input modules offer both single-ended or differential inputs
- Ability to direct output device operation during an abnormal condition
- High accuracy ratings

The data can be configured on board each module as:

- Engineering units in volts or milliamps.
- Scaled-for-PID.
- Percent of range.
- Raw/Proportional Data for maximum resolution.

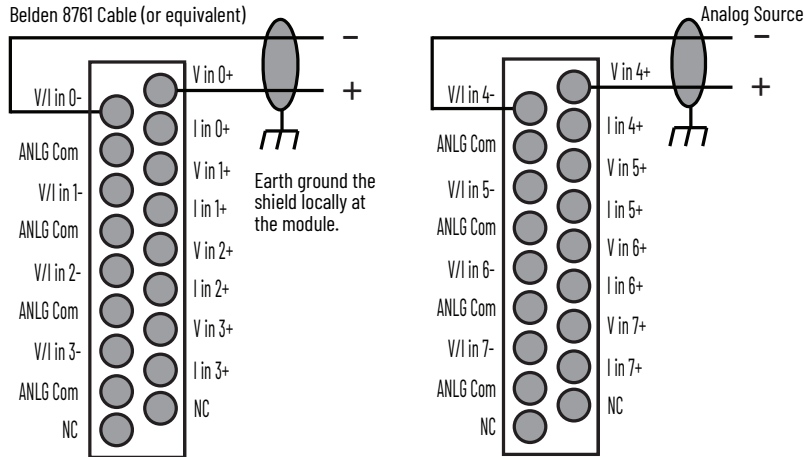
These analog I/O modules are available.

I/O Type	Cat. No.	Description	Page
Analog input	1769-IF4, IF4K	Compact voltage/current analog input module	30
	1769-IF4I	Compact voltage/current analog, individually isolated input module	32
	1769-IF4XOF2, 1769-IF4XOF2K	Compact combination input/output analog module	34
	1769-IF4FXOF2F	Compact combination fast input/output analog module	36
	1769-IF8, 1769-IF8K	Compact voltage/current analog input module	38
	1769-IF16C	Compact current analog input module	40
	1769-IF16V	Compact voltage analog input module	41
	1769-IR6	Compact RTD/resistance input module	42
	1769-IT6	Compact Thermocouple/mV input module	45
Analog output	1769-OF2, 1769-OF2K	Compact voltage/current output analog module	47
	1769-OF4, 1769-OF4K	Compact voltage/current output analog module	48
	1769-OF4CI	Compact current output, individually isolated analog module	49
	1769-OF4VI	Compact voltage output, individually isolated analog module	50
	1769-OF8C	Compact current output analog module	51
	1769-OF8V	Compact voltage output analog module	52

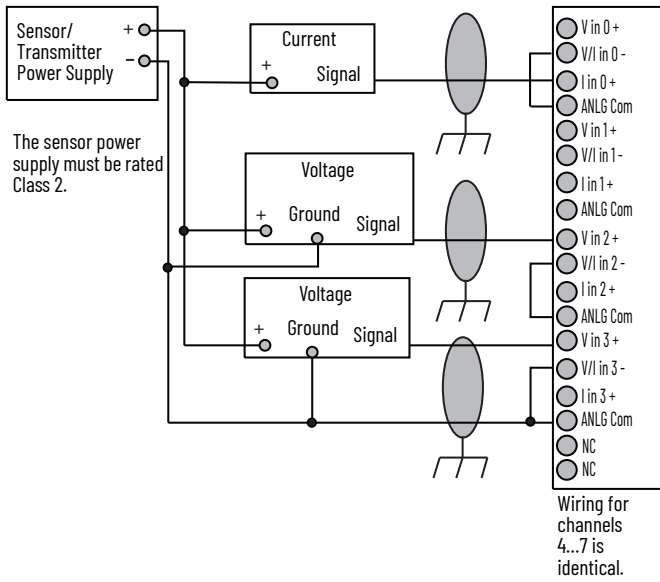
1769-IF8, 1769-IF8K

Compact voltage/current analog input module

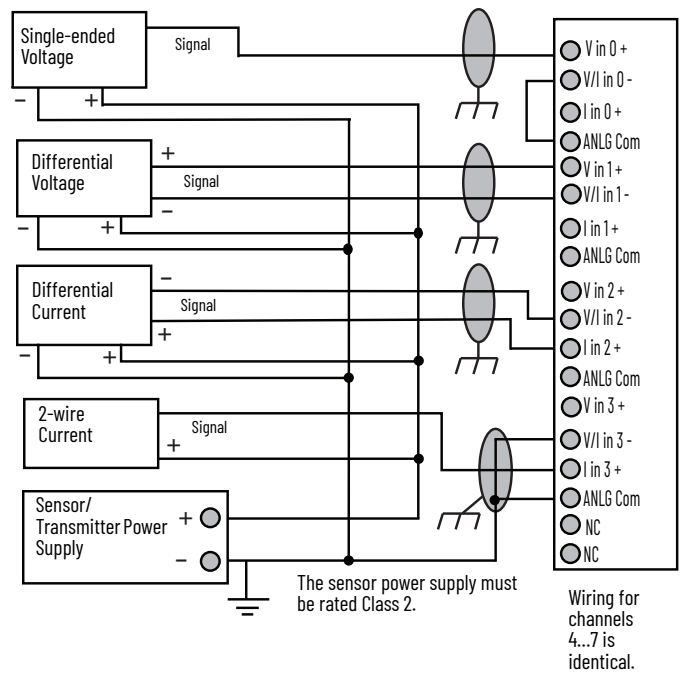
Differential Input Wiring



Single-ended Sensor/Transmitter Input Wiring



Mixed Transmitter Wiring



Technical Specifications – 1769-IF8, 1769-IF8K

Attribute	1769-IF8, 1769-IF8K
Inputs	8 differential or single-ended
Input range	±10V 0...10V 0...5V 1...5V 0...20 mA 4...20 mA
Full-scale range ⁽¹⁾	±10.5V -0.5...10.5V -0.5...5.25V 0.5...5.25V 0...21 mA 3.2...21 mA
Current draw @ 5.1V	120 mA
Current draw @ 24V	70 mA
Converter type	Delta Sigma
Heat dissipation, max	3.24 W
Resolution ⁽²⁾	16 bits (unipolar), 15 bits plus sign (bipolar)
Rated working voltage ⁽³⁾	30V AC/30V DC
Common mode voltage range ⁽⁴⁾	±10V DC max per channel
Common mode rejection	> 60 dB @ 50 Hz and 60 Hz with the 10 Hz filter selected
Normal mode rejection ratio	-50 dB @ 50 Hz and 60 Hz with the 10 Hz filter selected
Input impedance	Voltage: 220 kΩ, Current: 250 Ω
Accuracy ⁽⁵⁾	Voltage: ±0.2% full-scale @ 25 °C (77 °F) Current: ±0.35% full-scale @ 25 °C (77 °F)
Accuracy drift with temperature	Voltage: ±0.003% per °C Current: ±0.0045% per °C
Nonlinearity	±0.03%
Repeatability ⁽⁶⁾	±0.03%
Module error	Voltage: ±0.3% Current: ±0.5%
Overload at input terminals, max ⁽⁷⁾	Voltage: ±30V DC continuous, 0.1 mA Current: ±32 mA continuous, ±7.6V DC
Isolation voltage	500V AC or 710V DC for 1 minute (qualification test), group to bus 30V AC/30V DC working voltage (IEC Class II reinforced insulation)
Weight, approx	450 g (0.99 lb)
Dimensions (HxWxD), Approx	118 x 52.5 x 87 mm (4.65 x 2.07 x 3.43 in.) Height with mounting tabs 138 mm (5.43 in.)
Slot width	1.5
Module location	DIN rail or panel mount
Power supply	1769-PA2, 1769-PB2, 1769-PA4, 1769-PB4
Power supply distance rating	8 modules

Technical Specifications – 1769-IF8, 1769-IF8K

Attribute	1769-IF8, 1769-IF8K
Terminal screw torque	0.68 N·m (6 lb·in)
Retaining screw torque	0.46 N·m (4.1 lb·in)
Wire size	(22...14 AWG) solid (22...16 AWG) stranded
Wire type	Cu-90 °C (194 °F)
Replacement terminal block	1769-RTBN18 (1 per kit)
Replacement door	Not available
Vendor ID code	1
Product type code	10
Product code	38
Enclosure type rating	None (open-style)

- (1) The over- or underrange flag turns on when the normal operating range (over/under) is exceeded. The module continues 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 either the 50 Hz or 60 Hz filter selected.
- (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, a 10V DC input signal and 20V DC potential above ground at the input terminal.
- (4) For proper operation, both the plus and minus input terminals must be within ±10V DC of analog common.
- (5) Includes offset, gain, nonlinearity, 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 can occur to the input circuit if this value is exceeded.

Response Speed – 1769-IF8, 1769-IF8K

Filter Frequency	Update Time Per Channel	Update Time Per Module
10 Hz	100 ms	400 ms
50 Hz	30 ms	120 ms
60 Hz	30 ms	120 ms
250 Hz	9 ms	36 ms
500 Hz	6 ms	24 ms

For **Environmental Specifications**, see [page 2](#).

For **Certifications**, see [page 3](#).