

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

ALLEN-BRADLEY

1769-IF4

FOUR-CHANNEL ANALOG INPUT MODULE

Used with the applicable Allen-Bradley CompactLogix configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

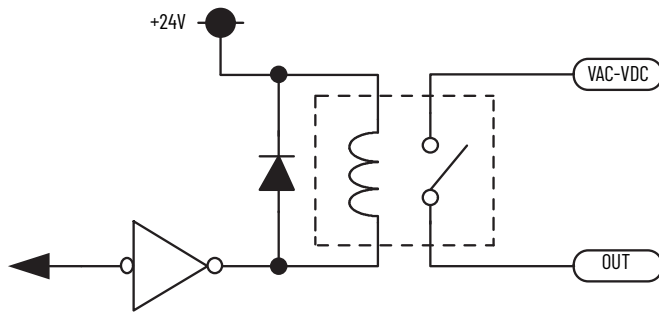
Selected official manufacturer pages follow this cover.

Source: Rockwell Automation manufacturer documentation

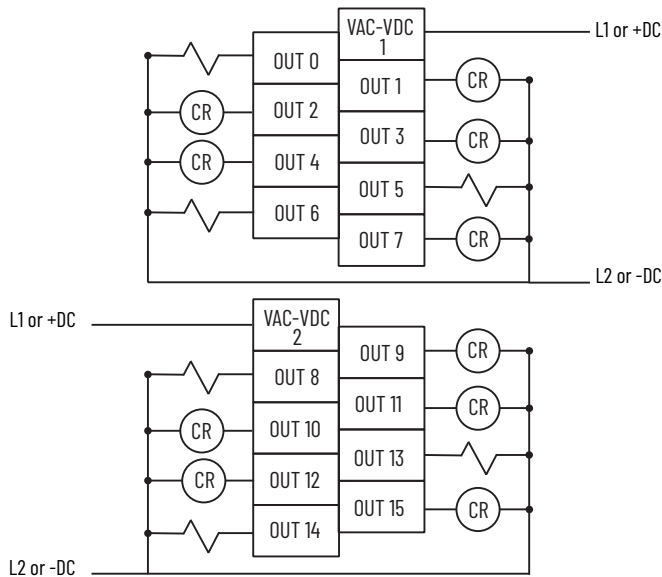
1769-OW16, 1769-OW16K

Compact AC/DC relay contact module

Simplified Output Circuit Diagram



Output Wiring



Technical Specifications - 1769-OW16, 1769-OW16K

Attribute	1769-OW16, 1769-OW16K
Outputs	16 normally open (8 points/group)
Operating voltage range	5...265V AC 5...125V DC
Delay, on	10 ms
Delay, off	10 ms
Current draw @ 5.1V	205 mA
Current draw @ 24V	180 mA

Technical Specifications - 1769-OW16, 1769-OW16K

Attribute	1769-OW16, 1769-OW16K
Heat dissipation, max	4.75 W
Off-state leakage, max	0 mA
On-state current, min	10 mA @ 5V DC
Current per point, max	2.5 A
Current per module, max	20 A
Isolation voltage	Verified by one of these dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s, output point to bus 265V AC working voltage (IEC Class II reinforced insulation) Verified by one of these dielectric tests: 1836V AC for 1 s or 2596V DC for 1 s, group to group 265V AC working voltage (basic insulation) 150V AC 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
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 label	1769-RL1 (2 per kit)
Replacement door	1769-RD (2 per kit)
Vendor ID code	1
Product type code	7
Product code	85
Enclosure type rating	None (open style)

Relay Contact Ratings - 1769-OW16, 1769-OW16K

Volts, Max	Continuous Amps per Point, Max	Amperes ⁽¹⁾		Voltamperes		NEMA ICS 2-125
		Make	Break	Make	Break	
240V AC	2.5 A	7.5 A	0.75 A	1800VA	180VA	C300
120V AC		15 A	1.5 A			
125V DC	1.0 A	0.22 A ⁽²⁾		28VA		R150
24V DC	2.0 A	1.2 A ⁽²⁾		28VA		—

(1) If you connect surge suppressors across your external inductive load, you extend the life of the relay contacts.

(2) For DC voltage applications, you can determine the make/break ampere rating for relay contacts by dividing 28VA by the applied DC voltage. For example, 28VA/48V DC = 0.58 A. For DC voltage applications less than 48V, the make/break ratings for relay contacts cannot exceed 2 A.

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

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

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
- Overrange 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.

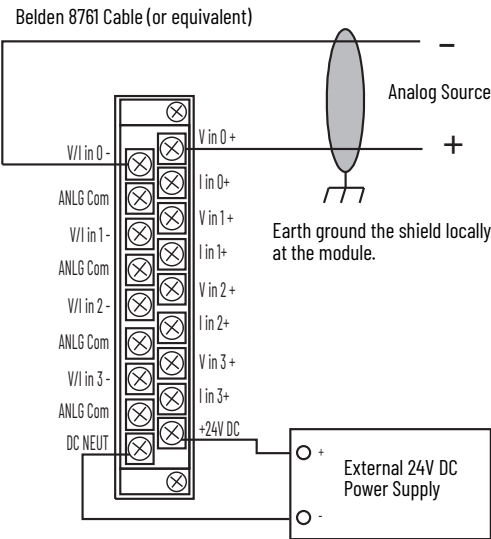
These analog modules are available.

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-IF4, 1769-IF4K

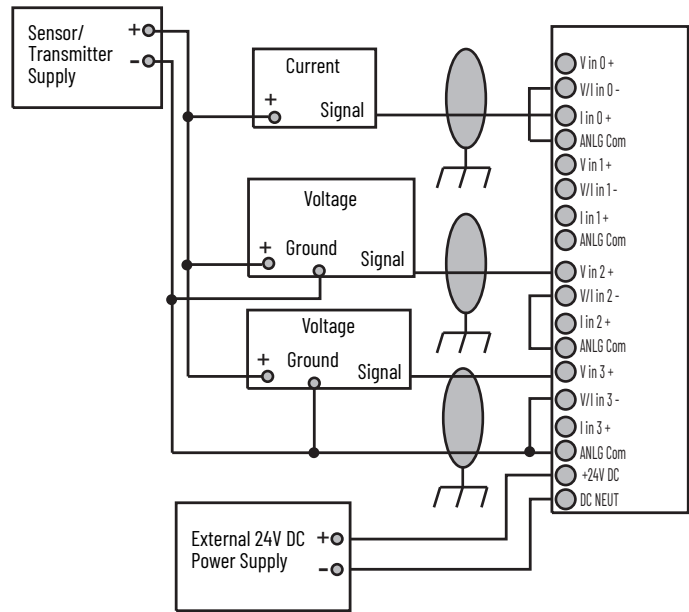
Compact voltage/current analog input module

Differential Input Wiring

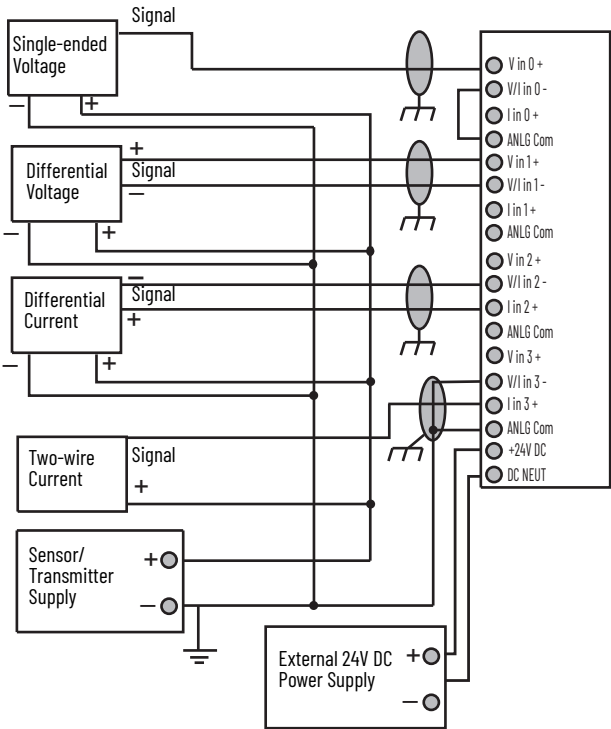


The external power supply must be rated Class 2, with a 24V DC range of 20.4...26.4V DC and 60 mA minimum. Series B and later modules support this option.

Single-ended Sensor/Transmitter Input Wiring



Mixed Transmitter Input Wiring



Technical Specifications - 1769-IF4, 1769-IF4K

Attribute	1769-IF4, 1769-IF4K
Inputs	4 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	60 mA
Heat dissipation, max	2.52 W
Converter type	Delta Sigma
Resolution ⁽²⁾	14 bits (unipolar) 14 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 50 Hz or 60 Hz filter selected, respectively
Normal mode rejection ratio	-50 dB @ 50 Hz and 60 Hz and 60 Hz with the 50 Hz or 60 Hz or 60 Hz filter selected, respectively
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	300 g (0.65 lb)
Dimensions (HxWxD), approx	118 x 35 x 87 mm (4.65 x 1.38 x 3.43 in.) Height with mounting tabs 138 mm (5.43 in.)
Slot width	1
Module location	DIN rail or panel mount
Power supply	1769-PA2, 1769-PB2, 1769-PA4, 1769-PB4
Optional 24V DC Class 2 power supply voltage range ⁽⁸⁾	20.4...26.4V DC
Power supply distance rating	8 modules

Technical Specifications - 1769-IF4, 1769-IF4K

Attribute	1769-IF4, 1769-IF4K
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 label	1769-RL2 series B (2 per kit)
Replacement door	1769-RD (2 per kit)
Vendor ID code	1
Product type code	10
Product code	35
Enclosure type rating	None (open-style)

- (1) The over- or underrange flag comes 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 terminals.
- (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.
- (8) If the optional 24V DC Class 2 power supply is used, the 24V DC current draw from the bus is 0 mA.

Response Speed - 1769-IF4, 1769-IF4K

Filter Frequency	Cutoff Frequency	Step Response	Channel Update
50 Hz	13.1 Hz	60 ms	22 ms
60 Hz	15.7 Hz	50 ms	19 ms
250 Hz	65.5 Hz	12 ms	6 ms
500 Hz	131 Hz	6 ms	4 ms

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

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