



Installation Instructions

Compact 1769-OF4VI Isolated Analog Output Module

Catalog Number 1769-OF4VI

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Specifications

Specification	1769-OF4VI
Dimensions	118 mm (height) x 87 mm (depth) x 35 mm (width) height including mounting tabs is 138 mm 4.65 in. (height) x 3.43 in (depth) x 1.38 in (width) height including mounting tabs is 5.43 in.
Approximate Shipping Weight (with carton)	270g (0.6 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 (ISA 12.12-01, C-UL under CSA C22.2 No. 213)
Radiated and Conducted Emissions	IEC 61000-6-4 and CISPR 11 Group 1, class A
<i>Electrical /EMC:</i>	<i>The module has passed testing at the following levels:</i>
•ESD Immunity (IEC 61000-4-2)	•4 kV contact, 8 kV air, 4 kV indirect
•Radiated Immunity (IEC 61000-4-3)	•10 V/m, 80 to 1000 MHz, 80% amplitude modulation
•Fast Transient Burst (IEC 61000-4-4)	•2 kV, 5 kHz
•Surge Immunity (IEC 61000-4-5)	•1 kV galvanic gun
•Conducted Immunity (IEC 61000-4-6)	•10V dc, 0.15 to 80 MHz ⁽¹⁾
Analog Normal Operating Ranges ⁽²⁾	± 10V dc, 0 to 10V dc, 0 to 5V dc, 1 to 5V dc

Specification	1769-OF4VI
Full Scale Analog Ranges ⁽²⁾	$\pm 10.5\text{V dc}$, -0.5 to 10.5V dc , -0.5 to 5.25V dc , 0.5 to 5.25V dc
Number of Outputs	4 isolated differential
Bus Current Draw (max.)	5V, 165mA 24V, 110mA
Heat Dissipation	2.0 Total Watts (all points - 10V dc into 2 k - worst case calculated)
Digital Resolution Across Full Range	15 bits plus sign (bipolar) $\pm 10\text{V dc}$: 15.89 bits, 330 $\mu\text{V/bit}$ 0 to $+5\text{V dc}$: 13.89 bits, 330 $\mu\text{V/bit}$ 0 to $+10\text{V dc}$: 14.89 bits, 330 $\mu\text{V/bit}$ $+1$ to $+5\text{V dc}$: 13.57 bits, 330 $\mu\text{V/bit}$
Conversion Rate (all channels) max.	120 ms
Step Response to 63% ⁽³⁾	<2.9 ms
Load Output Current	5 mA max.
Load Range Output	$\geq 2\text{K } \Omega$
Max. Capacitive Load	1 μF
Field Calibration	None required
Overall Accuracy ⁽⁴⁾	$\pm 0.5\%$ full scale at 25°C

- (1) Conducted Immunity frequency range may be 150 kHz to 30 MHz if the Radiated Immunity frequency range is 30 MHz to 1000 MHz.
- (2) 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 output up to the maximum full scale range. The flag automatically resets when within the normal operating range unless configured to latch.
- (3) Step response is the period of time between when the D/A converter was instructed to go from minimum to full range until the device is at 63% of full range.
- (4) Includes offset, gain, drift, non-linearity and repeatability error terms.

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Specification	1769-OF4VI
Accuracy Drift with Temperature	±0.0086% FS per °C
Output Ripple ⁽¹⁾ range 0 to 50 kHz (referred to output range)	±0.05%
Non-linearity (in percent full scale)	±0.05%
Repeatability ⁽²⁾ (in percent full scale)	±0.05%
Output Error Over Full Temperature Range (0 to 60°C [+32 to +140°F])	±0.8%
Output Impedance	<1 Ω
Open and Short-Circuit Protection	Yes
Short-Circuit Current	35 mA typical, 42 mA max.
Output Overvoltage Protection	Yes
Output Response at System Power Up and Power Down	Power up: ±1.2V dc spike for less than 0.4 ms Power down: 1.2V dc spike for less than 21 ms
Rated Working Voltage ⁽³⁾	30V ac/30V dc
Output 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)
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

- (1) Output ripple is the amount a fixed output varies with time, assuming a constant load and temperature.
- (2) Repeatability is the ability of the output module to reproduce output readings when the same controller value is applied to it consecutively, under the same conditions and in the same direction.
- (3) Rated working voltage is the maximum continuous voltage that can be applied at the output terminal, including the output signal and the value that floats above ground potential (for example, 10V dc output signal and 20V dc potential above ground).

Specification	1769-OF4VI
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	42
Input Words	6
Output Words	5
Configuration Words	32

Hazardous Location Considerations

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, D or non-hazardous locations only. The following ATTENTION statement applies to use in hazardous locations.



WARNING: EXPLOSION HAZARD

- Substitution of components may impair suitability for Class I, Division 2.
- When in hazardous locations, turn off power before wiring or replacing modules.
- Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- This product must be installed in an enclosure.
- All wiring must comply with N.E.C. article 501-4(b).

Environnements dangereux

Cet équipement est conçu pour être utilisé dans des environnements de Classe 1, Division 2, Groupes A, B, C, D ou non dangereux. La mise en garde suivante s'applique à une utilisation dans des environnements dangereux.



AVERTISSEMENT: DANGER D'EXPLOSION

La substitution de composants peut rendre cet équipement impropre à une utilisation en environnement de Classe 1, Division 2.

Ne pas remplacer de composants ou déconnecter l'équipement sans s'être assuré que l'alimentation est coupée et que l'environnement est classé non dangereux.

Ne pas connecter ou déconnecter des composants sans s'être assuré que l'alimentation est coupée ou que l'environnement est classé non dangereux.

Ce produit doit être installé dans une armoire.

Additional Resources

These documents contain additional information concerning related Rockwell Automation products.

Resource	Description
Compact I/O Analog Modules User Manual, publication 1769-UM002	Provides detailed information on installing, programming, and troubleshooting Compact analog I/O modules.
MicroLogix 1500 Programmable Controllers User Manual, publication 1764-UM001	Provides a detailed description for installing and using Compact I/O modules with a MicroLogix 1500 programmable controller.
1769-ADN DeviceNet Adapter User Manual, publication 1769-UM001	Provides a detailed description of how to install and use Compact I/O modules with the 1769-ADN DeviceNet Adapter.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Rockwell Automation distributor or sales representative.