



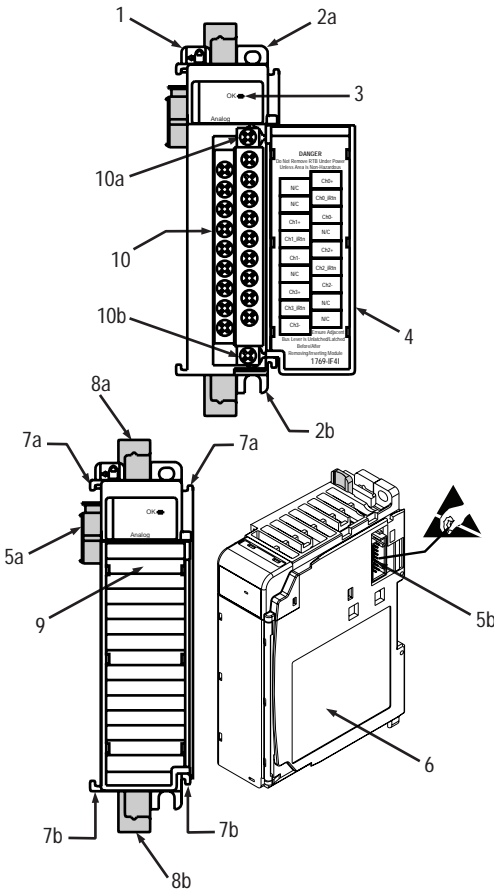
Compact 1769-IF4I Isolated Analog Input Module

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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

Module Installation

Compact I/O is suitable for use in an industrial environment when installed in accordance with these instructions. Specifically, this equipment is intended for use in clean, dry environments (Pollution degree 2⁽¹⁾) and to circuits not exceeding Over Voltage Category II⁽²⁾ (IEC 60664-1).⁽³⁾

Prevent Electrostatic Discharge

ATTENTION



Electrostatic discharge can damage integrated circuits or semiconductors if you touch bus connector pins or the terminal block. Follow these guidelines when you handle the module:

- Touch a grounded object to discharge static potential.
- Wear an approved wrist-strap grounding device.
- Do not touch the bus connector or connector pins.
- Do not touch circuit components inside the module.
- If available, use a static-safe work station.
- When not in use, keep the module in its static-shield box.

Remove Power

ATTENTION



Remove power before removing or inserting this module. When you remove or insert a module with power applied, an electrical arc may occur. An electrical arc can cause personal injury or property damage by:

- sending an erroneous signal to your system's field devices, causing unintended machine motion
- causing an explosion in a hazardous environment

Electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance.

⁽¹⁾ Pollution Degree 2 is an environment where, normally, only non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation shall be expected.

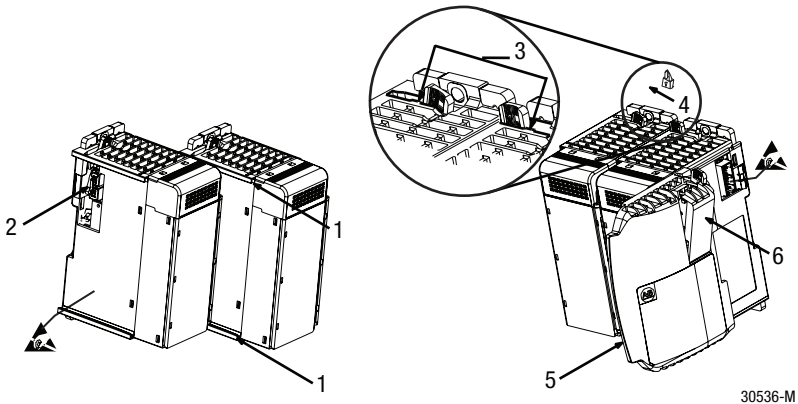
⁽²⁾ Over Voltage Category II is the load level section of the electrical distribution system. At this level transient voltages are controlled and do not exceed the impulse voltage capability of the product's insulation.

⁽³⁾ Pollution Degree 2 and Over Voltage Category II are International Electrotechnical Commission (IEC) designations.

System Assembly

The module can be attached to the controller or an adjacent I/O module *before* or *after* mounting. For mounting instructions, see “Panel Mounting” on page 6, or “DIN Rail Mounting” on page 7. To work with a system that is already mounted, see “Replacing a Single Module within a System” on page 7.

The following procedure shows you how to assemble the Compact I/O system.



1. Disconnect power.
2. Check that the bus lever of the module to be installed is in the unlocked (fully right) position.
3. Use the upper and lower tongue-and-groove slots (1) to secure the modules together (or to a controller).
4. Move the module back along the tongue-and-groove slots until the bus connectors (2) line up with each other.
5. Push the bus lever back slightly to clear the positioning tab (3). Use your fingers or a small screwdriver.

- To allow communication between the controller and module, move the bus lever fully to the left (4) until it clicks. Ensure it is locked firmly in place.

ATTENTION

When attaching I/O modules, it is very important that the bus connectors are securely locked together to ensure proper electrical connection.

- Attach an end cap terminator (5) to the last module in the system by using the tongue-and-groove slots as before.
- Lock the end cap bus terminator (6).

IMPORTANT

A 1769-ECR or 1769-ECL right or left end cap must be used to terminate the end of the communication bus.

Mounting Expansion I/O

ATTENTION

During panel or DIN rail mounting of all devices, be sure that all debris (metal chips, wire strands, etc.) is kept from falling into the module. Debris that falls into the module could cause damage on power up.

Minimum Spacing

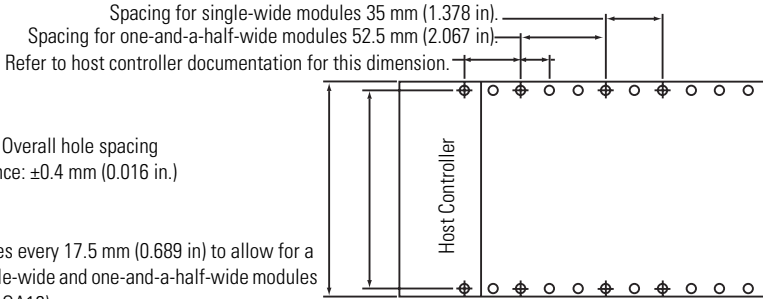
Maintain spacing from enclosure walls, wireways, adjacent equipment, etc. Allow 50 mm (2 in.) of space on all sides for adequate ventilation, as shown:

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Panel Mounting

Mount the module to a panel using two screws per module. Use M4 or #8 panhead screws. Mounting screws are required on every module.

Panel Mounting Using the Dimensional Template



Panel Mounting Procedure Using Modules as a Template

The following procedure allows you to use the assembled modules as a template for drilling holes in the panel. If you have sophisticated panel mounting equipment, you can use the dimensional template provided on page 6. Due to module mounting hole tolerance, it is important to follow these procedures:

1. On a clean work surface, assemble no more than three modules.
2. Using the assembled modules as a template, carefully mark the center of all module-mounting holes on the panel.
3. Return the assembled modules to the clean work surface, including any previously mounted modules.
4. Drill and tap the mounting holes for the recommended M4 or #8 screw.
5. Place the modules back on the panel and check for proper hole alignment.
6. Attach the modules to the panel using the mounting screws.

NOTE

If mounting more modules, mount only the last one of this group and put the others aside. This reduces remounting time during drilling and tapping of the next group.

7. Repeat steps 1 to 6 for any remaining modules.

DIN Rail Mounting

The module can be mounted using the following DIN rails: 35 x 7.5 mm (EN 50 022 - 35 x 7.5) or 35 x 15 mm (EN 50 022 - 35 x 15).

Before mounting the module on a DIN rail, close the DIN rail latches. Press the DIN rail mounting area of the module against the DIN rail. The latches will momentarily open and lock into place.

Replacing a Single Module within a System

The module can be replaced while the system is mounted to a panel (or DIN rail). Follow these steps in order:

1. Remove power. See important note on page 3.
2. On the module to be removed, remove the upper and lower mounting screws from the module (or open the DIN latches using a flat-blade or phillips-style screwdriver).
3. Move the bus lever to the right to disconnect (unlock) the bus.
4. On the right-side adjacent module, move its bus lever to the right (unlock) to disconnect it from the module to be removed.
5. Gently slide the disconnected module forward. If you feel excessive resistance, check that the module has been disconnected from the bus and that both mounting screws have been removed (or DIN latches opened).

NOTE

It may be necessary to rock the module slightly from front to back to remove it, or, in a panel-mounted system, to loosen the screws of adjacent modules.

6. Before installing the replacement module, be sure that the bus lever on the module to be installed, and on the right-side adjacent module are in the unlocked (fully right) position.
7. Slide the replacement module into the open slot.
8. Connect the modules together by locking (fully left) the bus levers on the replacement module and the right-side adjacent module.
9. Replace the mounting screws (or snap the module onto the DIN rail).

Module Spare/Replacement Parts

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

Field Wiring Connections

Grounding the Module

This product is intended to be mounted to a well-grounded mounting surface such as a metal panel. Additional grounding connections from the module's mounting tabs or DIN rail (if used), are not required unless the mounting surface cannot be grounded. Refer to *Industrial Automation Wiring and Grounding Guidelines*, Allen-Bradley publication 1770-4.1, for additional information.

System Wiring Guidelines

Consider the following when wiring your system:

- Do not use the analog module's NC terminals as connection points.
- Channels are isolated from each other.
- Use Belden™ 8761, or equivalent, shielded wire.
- Under normal conditions, the drain wire and shield junction must be connected to earth ground via a panel or DIN rail mounting screw at the analog I/O module end. Keep the shield connection to ground as short as possible.⁽¹⁾
- To ensure optimum accuracy, limit overall cable impedance by keeping your cable as short as possible. Locate the I/O system as close to your sensors or actuators as your application will permit.
- If multiple power supplies are used with analog inputs, the power supply commons must be connected.
- The 1769-IF4I module does not provide loop power for analog inputs. Use a power supply that matches the input transmitter specifications.
- Differential analog inputs are more immune to noise than single-ended analog inputs.

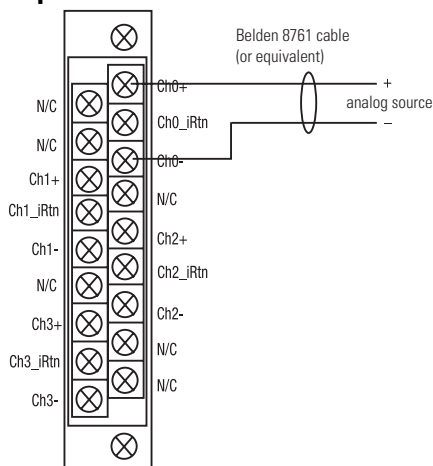
⁽¹⁾ In environments where high-frequency noise may be present, it may be necessary to directly ground cable shields to earth at the module end and via a 0.1µF capacitor at the sensor end.

- Voltages on Ch+, Ch-, and Ch_iRtn for a single, isolated channel of the 1769-IF4I module must not exceed the Maximum Overload levels detailed in the Input Specifications on page 18.

ATTENTION

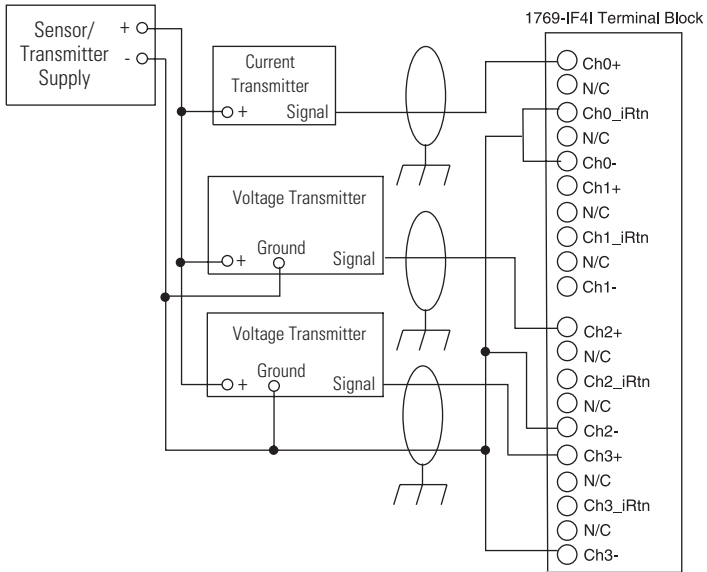
Be careful when stripping wires. Wire fragments that fall into a module could cause damage at power up. Once wiring is complete, ensure the module is free of all metal fragments.

Wiring Differential Inputs

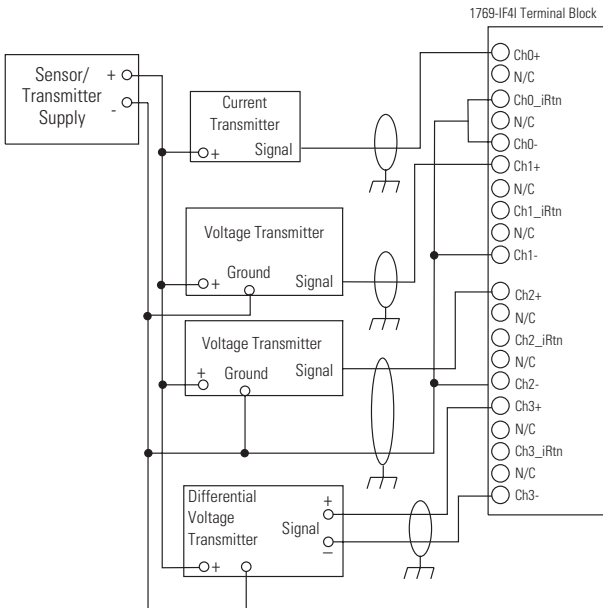


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Wiring Single-Ended Sensor/Transmitter Types

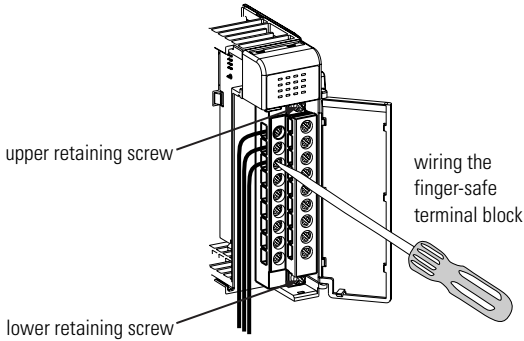


Wiring Mixed Transmitter Types



Labeling the Terminals

A removable, write-on label is provided with the module. Remove the label from the door, mark the identification of each terminal with permanent ink, and slide the label back into the door. Your markings (ID tag) will be visible when the module door is closed.



Removing the Finger-Safe Terminal Block

When wiring field devices to the module, it is not necessary to remove the terminal block. If you remove the terminal block, use the write-on label on the side of the terminal block to identify the module slot location and type. RTB position can be indicated by circling either the 'R' for right side or 'L' for left side.

To remove the terminal block, loosen the upper and lower retaining screws. The terminal block will back away from the module as you remove the screws. When replacing the terminal block, torque the retaining screws to 0.46 Nm (4.1 in-lbs).

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Wiring the Finger-Safe Terminal Block

When wiring the terminal block, keep the finger-safe cover in place.

1. Loosen the terminal screws to be wired.
2. Route the wire under the terminal pressure plate. You can use the bare wire or a spade lug. The terminals will accept a 6.35 mm (0.25 in.) spade lug.

NOTE

The terminal screws are non-captive. Therefore, it is possible to use a ring lug [maximum 1/4 inch o.d. with a 0.139 inch minimum i.d. (M3.5)] with the module.

3. Tighten the terminal screw making sure the pressure plate secures the wire. Recommended torque when tightening terminal screws is 0.68 Nm (6 in-lbs).

NOTE

If you need to remove the finger-safe cover, insert a screw driver into one of the square wiring holes and gently pry the cover off. If you wire the terminal block with the finger-safe cover removed, you will not be able to put it back on the terminal block because the wires will be in the way.

Wire Size and Terminal Screw Torque

Each terminal accepts up to two wires with the following restrictions:

Wire Type		Wire Size	Terminal Screw Torque	Retaining Screw Torque
Solid	Cu-90°C (194°F)	#14 to #22 AWG	0.68 Nm (6 in-lbs)	0.46 Nm (4.1 in-lbs)
Stranded	Cu-90°C (194°F)	#16 to #22 AWG	0.68 Nm (6 in-lbs)	0.46 Nm (4.1 in-lbs)

I/O Memory Mapping

Input Data File

For each input module, slot x, words 0-3 in the input data file contain the analog values of the inputs.

Word	Bit Position																
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
0	SGN	Analog Input Data Channel 0															
1	SGN	Analog Input Data Channel 1															
2	SGN	Analog Input Data Channel 2															
3	SGN	Analog Input Data Channel 3															
4	Nu	Time Stamp Value															
5	Nu	Nu	Nu	Nu	Nu	Nu	Nu	Nu	Nu	Nu	Nu	Nu	Nu	S3	S2	S1	S0
6	L3	H3	U3	O3	L2	H2	U2	O2	L1	H1	U1	O1	L0	H0	U0	O0	

The bits are defined as follows:

- SGN = Sign bit in two's complement format
- Nu = Not used. Bit set to 0.
- Sx = General status bit for input channels 0 through 3.
- Lx = Low alarm flag bits for input channels 0 through 3.
- Hx = High alarm flag bits for input channels 0 through 3.
- Ux = Under-range flag bits for channels 0 through 3. When set, the input signal is under normal range or an open circuit condition exists, in the case of the 4-20 mA range.
- Ox = Over-range flag bits for channels 0 through 3. When set, the input signal is over normal range or an open circuit condition exists (open circuit detection applies to voltage input ranges only).

Output Data File

For each input module, slot x, word 0 in the output data file contains the analog values of the outputs.

Word	Bit Position															
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	Nu	Nu	Nu	Nu	Nu	Nu	Nu	Nu	UL3	UH3	UL2	UH2	UL1	UH1	UL0	UH0

The bits are defined as follows:

- Nu = Not used. Bit set to 0.
- UHx = Cancel High Process Alarm Latch x. Allows each high process alarm latch to be individually cancelled. Cancel = 1.
- ULx = Cancel Low Process Alarm Latch x. Allows each low process alarm latch to be individually cancelled. Cancel = 1.

Configuration Data File

The manipulation of the bits from this file is normally done with programming software (e.g. RSLogix 500, RSNetworkx for DeviceNet, etc.) during initial configuration of the system. In that case, graphical screens are provided by the programmer to simplify configuration. However, some systems, like the 1769-ADN DeviceNet Adapter, also allow the bits to be altered as part of the control program, using communication rungs. In that case, it is necessary to understand the bit arrangement.

Word	Bit Position															
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	Real Time Sample Value															
1	ETS	Reserved														
2	EC	Reserved			EA	AL	EI	Reserved			Input Filter Sel ChI0					
3	Reserved				Inpt Dta Fm ChI0			Reserved			Inpt Tp/RngeSel ChI0					
4	S	Process Alarm High Data Value Channel 0														
5	S	Process Alarm Low Data Value Channel 0														
6	S	Alarm Dead Band Value Channel 0														
7	Reserved															
8	EC	Reserved			EA	AL	EI	Reserved			Input Filter Sel ChI1					
9	Reserved				Inpt Dta Fm ChI1			Reserved			Inpt Tp/RngeSel ChI1					
10	S	Process Alarm High Data Value Channel 1														
11	S	Process Alarm Low Data Value Channel 1														
12	S	Alarm Dead Band Value Channel 1														
13	Reserved															
14	EC	Reserved			EA	AL	EI	Reserved			Input Filter Sel ChI2					
15	Reserved				Inpt Dta Fm ChI2			Reserved			Inpt Tp/RngeSel ChI2					
16	S	Process Alarm High Data Value Channel 2														
17	S	Process Alarm Low Data Value Channel 2														
18	S	Alarm Dead Band Value Channel 2														
19	Reserved															
20	EC	Reserved			EA	AL	EI	Reserved			Input Filter Sel ChI3					
21	Reserved				Inpt Dta Fm ChI3			Reserved			Inpt Tp/RngeSel ChI3					
22	S	Process Alarm High Data Value Channel 3														
23	S	Process Alarm Low Data Value Channel 3														
24	S	Alarm Dead Band Value Channel 3														
25	Reserved															

- EC = Enable Channel
- Inpt Dta Fm Chlx = Input Data Format Select.
- EA = Enable Alarm.
- AL = Alarm Latch.
- EI = Enable Interrupt.⁽¹⁾
- Inpt Tp/Rnge Sel Chlx = Input Type/Range Select.
- Inpt Filter Sel Chlx = Input Filter Select.
- Reserved = Allows for future expansion.
- ETS = Enable Time Stamp.

Define	To Select	Make these bit settings									
		15	14-11	10	9	8	7-4	3	2	1	0
Input Filter Selection	60 Hz							0	0	0	0
	50 Hz							0	0	0	1
	28.5 Hz							0	0	1	0
	300 Hz							0	0	1	1
	360 Hz							0	1	0	0
Enable Interrupt	Enable					1					
	Disable					0					
Enable Process Alarm Latch	Enable				1						
	Disable				0						
Enable Process Alarms	Enable			1							
	Disable			0							
Enable Channel	Enable	1									
	Disable	0									

Define	Indicate this	These bit settings									
		15-11	10	9	8	7-4	3	2	1	0	
Input Range Select	-10 to +10V dc							0	0	0	0
	0 to 5V dc							0	0	0	1
	0 to 10V dc							0	0	1	0
	4 to 20 mA							0	0	1	1
	1 to 5V dc							0	1	0	0
	0 to 20 mA							0	1	0	1
Input Data Select	Raw/Proportional Counts		0	0	0						
	Engineering Units		0	0	1						
	Scaled for PID		0	1	0						
	Percent Range		0	1	1						

⁽¹⁾ MicroLogix 1500 and CompactLogix L3x controllers do not support interrupts.

Specifications

General Specifications

Specification	Value
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)	300g (0.66 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	<ul style="list-style-type: none"> • 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
<i>Electrical /EMC:</i>	<i>The module has passed testing at the following levels:</i>
<ul style="list-style-type: none"> • ESD Immunity (IEC1000-4-2) 	<ul style="list-style-type: none"> • 4 kV contact, 8 kV air, 4 kV indirect
<ul style="list-style-type: none"> • Radiated Immunity (IEC1000-4-3) 	<ul style="list-style-type: none"> • 10 V/m, 80 to 1000 MHz, 80% amplitude modulation
<ul style="list-style-type: none"> • Fast Transient Burst (IEC1000-4-4) 	<ul style="list-style-type: none"> • 2 kV, 5kHz
<ul style="list-style-type: none"> • Surge Immunity (IEC1000-4-5) 	<ul style="list-style-type: none"> • 1 kV galvanic gun
<ul style="list-style-type: none"> • Conducted Immunity (IEC1000-4-6) 	<ul style="list-style-type: none"> • 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-IF4I
Analog Normal Operating Ranges ⁽¹⁾	Voltage: $\pm 10V$ 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: $\pm 10.5V$ 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	4 isolated differential
Bus Current Draw (max.)	145 mA at 5V dc 125 mA at 24V dc
Heat Dissipation	3.0 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 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: 1M Ω (typical) Current Terminal: 249 Ω
Overall Accuracy ⁽⁴⁾	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.

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

Specification	1769-IF4I
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 only initial factory calibration.
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: $\pm 24\text{V}$ dc continuous, 0.1 mA Current Terminal: $\pm 28\text{mA}$ continuous, $\pm 7.0\text{V}$ 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	44

⁽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.

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.
- Do not replace components or disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Do not connect or disconnect components 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.

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For More Information

For	Refer to this Document	Pub. No.
A more detailed description of how to install and use your Compact I/O with MicroLogix 1500 programmable controller.	MicroLogix 1500 Programmable Controllers User Manual	1764-UM001
A detailed description of how to install and use your Compact I/O with the 1769-ADN DeviceNet Adapter.	1769-ADN DeviceNet Adapter User Manual	1769-UM001
An overview of the MicroLogix 1500 system, including Compact I/O.	MicroLogix 1500 Programmable Controller with Compact I/O for Expansion	1764-S0001
More information on proper wiring and grounding techniques.	Industrial Automation Wiring and Grounding Guidelines	1770-4.1

If you would like a manual, you can:

- download a free electronic version from the internet:
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 - contacting your local distributor or Rockwell Automation representative
 - visiting **www.theautomationbookstore.com** and placing your order
 - calling 1.800.963.9548 (USA/Canada)
or 001.330.725.1574 (Outside USA/Canada)

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Notes:

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Notes:

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Rockwell Automation Support

Rockwell Automation provides technical information on the web to assist you in using our products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running:

United States	1.440.646.3223 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell tests all of our products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned:

United States	Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for return procedure.

www.rockwellautomation.com

Corporate Headquarters

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