

5069 Compact I/O Modules Specifications

Digital I/O Module Catalog Numbers 5069-IA16, 5069-IB16, 5069-IB16F, 5069-IB6F-3W, 5069-OA16, 5069-OB8, 5069-OB16, 5069-OB16F, 5069-OW4I, 5069-OW16, 5069-OX4I

Analog I/O Module Catalog Numbers 5069-IF8, 5069-IY4, 5069-OF4, 5069-OF8

High-speed Counter Module Catalog Number 5069-HSC2xOB4

Field Potential Distributor Catalog Number 5069-FPD

Address Reserve Module Catalog Number 5069-ARM

EtherNet/IP Adapter Catalog Number 5069-AENTR, 5069-AEN2TR

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The 5069 Compact I/O™ architecture provides a wide range of input and output modules to span many applications, from high-speed digital to process control. The architecture uses Producer/Consumer technology that allows input information and output status to be shared among multiple Logix5000™ controllers.

5069 Compact I/O systems are used as local I/O modules in CompactLogix™ 5380 controller systems or as remote I/O modules with CompactLogix 5380 controllers and some other Logix5000 controllers. The modules are configured with the Studio 5000 Logix Designer® application.

The I/O modules require a removable terminal block (RTB) to connect field-side wiring. RTBs are not included with the I/O modules. You must order RTBs separately.



Summary of Changes

Changes to the publication are listed in this table.

Topic	Page
Addition of information for the 5069-AENTR adapter	83
Addition of EAC certification for all modules	Throughout

Digital I/O Modules

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AC digital input	5069-IA16	3
DC digital input	5069-IB16	8
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AC digital output	5069-OA16	18
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5069-IA16 Compact I/O Digital 16-point 120/240V AC Input Module

This figure shows a wiring diagram for the 5069-IA16 module.

5069-IA16 Wiring Diagram

Connections to an external power supply that provides SA Power via the SA Power RTB on one of the following:

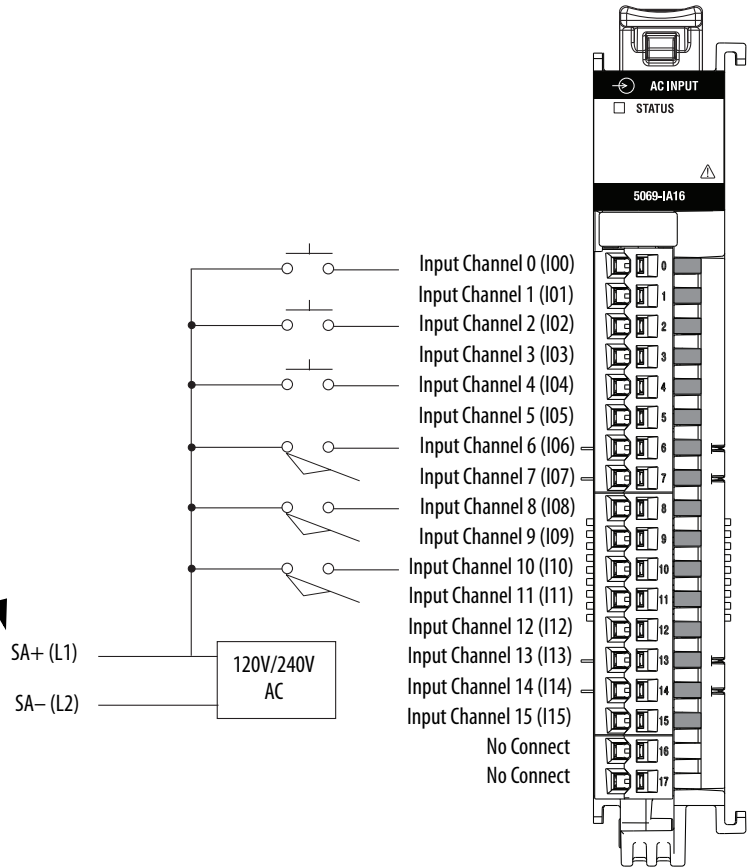
- CompactLogix 5380 Controller
- 5069 Compact I/O EtherNet/IP Adapter
- 5069-FPD Field Potential Distributor

IMPORTANT: Remember the following:

- The 5069-IA16 module inputs use a shared common. The inputs have a return through internal module circuitry to the SA (-) terminal on the SA Power RTB.
- If you install modules in a 5069 Compact I/O system that use AC SA power and DC SA power, you must install them on separate SA Power buses.

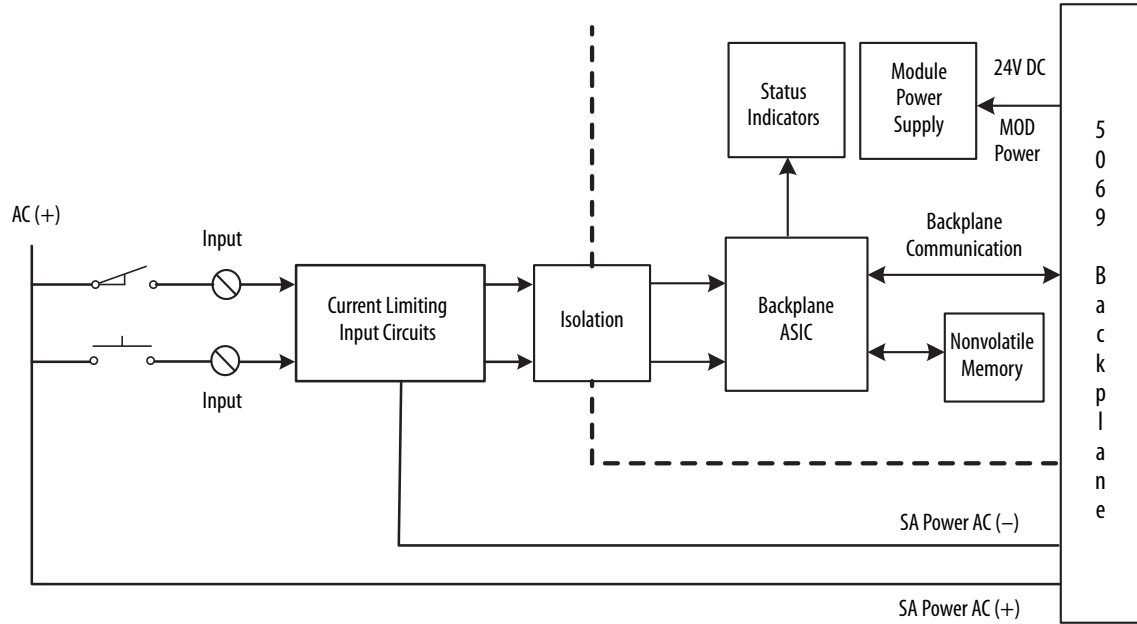
You use the 5069-FPD field potential distributor to establish a new SA Power bus in a 5069 Compact I/O system. SA Power buses are isolated from each other. To keep the modules on separate SA Power buses, complete the following steps.

1. Install the modules that use one type of SA power, for example AC, to the right of the adapter or controller, that is, the first SA Power bus.
2. Install the 5069-FPD field potential distributor to establish a second SA Power bus.
3. Install the modules that use the other type of SA power, for example DC, on the second SA Power bus.



This figure shows a functional block diagram for the 5069-IA16 module.

5069-IA16 Functional Block Diagram



Technical Specifications - 5069-IA16

Attribute	5069-IA16
On-state voltage, min	79V AC
On-state voltage, nom	120/240V AC
On-state voltage, max	264V AC
Off-state voltage, max	40V AC
Input current per channel, max	15 mA @ 264V AC
On-state current, min	2 mA @ 79V AC 3 mA @ 164V AC
On-state current, nom	5 mA @ 120V AC/50 Hz 6 mA @ 120V AC/60 Hz 9 mA @ 240V AC/50 Hz 11 mA @ 240V AC/60 Hz
On-state current, max	15 mA @ 264V AC
Off-state current, max	2 mA
Input impedance, nom	24 kΩ @ 120V AC/50 Hz 20 kΩ @ 120V AC/60 Hz 27 kΩ @ 240V AC/50 Hz 22 kΩ @ 240V AC/60 Hz
Input impedance, min	17.6 kΩ @ 264V AC/63 Hz
Inrush current, max	600 mA
Input delay time	
Off to On	10 ms (typ) @ 0...60 °C (32... 140 °F)
On to Off	10 ms (typ) @ 0...60 °C (32... 140 °F)

Technical Specifications - 5069-IA16

Attribute	5069-IA16
Input filter times Off to On	Hardware delay: 10 ms (typ) + filter time User-selectable filter times: <ul style="list-style-type: none"> • 120V AC input - 1 ms • 240V AC input - 1 ms, 2 ms, 5 ms
On to Off	Hardware delay: 10 ms (typ) + filter time User-selectable filter times: <ul style="list-style-type: none"> • 120V AC input - 10 ms, 20 ms • 240V AC input - 5 ms, 10 ms, 20 ms

With the 5069-IA16 module, the Logix Designer application lets you choose multiple filter values, including values that are invalid for some input signals. For example, the only valid Off to On filter value when a 120V AC signal is connected to the module is 1 ms. However, you can choose 1 ms, 2 ms, or 5 ms. If you select an invalid input filter value, the module can read signal levels incorrectly. For more information, see the 5000 Series Digital I/O Modules in Logix5000 Control Systems User Manual, publication 5000-UM004.

General Specifications - 5069-IA16

Attribute	5069-IA16
Number of inputs	16 (One group of 16)
Voltage category	120/240V AC
Input voltage range	79...264V AC
Input voltage frequency	47...63 Hz
MOD Power	75 mA @ 18...32V DC
MOD Power (Passthrough) ⁽¹⁾	9.55 A @ 18...32V DC
SA Power	240 mA @ 79...264V AC
SA Power (Passthrough) ⁽²⁾	9.975 A @ 79...264V AC

Do not exceed 10 A MOD or SA Power (Passthrough) current draw.

The 5069-IA16 module complies to ATEX/IECEx when used at or below 125V AC.

Power dissipation	3.5 W
Thermal dissipation	11.9 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type Type tested at 1800V AC for 60 s No isolation between individual channels
Module keying	Electronic keying via programming software
Indicators	1 green/red module status indicator 16 yellow I/O status indicators
Slot width	1
Dimensions (HxWxD)	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, chromate-passivated steel DIN rail. EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.)
RTB	One of the following RTB types. <ul style="list-style-type: none"> • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW RTB only)	0.4 N·m (3.5 lb·in)
RTB keying	None
Wire category	2 - input ports 2 - power ports 1 wire per terminal for each signal port
Wire size	
5069-RTB18-SPRING connections	0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only.
5069-RTB18-SCREW connections	0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only.

General Specifications - 5069-IA16

Attribute	5069-IA16
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)
Weight, approx	175 g (0.39 lb)
Enclosure type rating	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4
IEC Input Compatibility	Type 1

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.

Environmental Specifications - 5069-IA16

Attribute	5069-IA16
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C < Ta < +60 °C (+32 °F < Ta < +140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±4 kV @ 5 kHz on signal ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Corrosion resistance classification	ISA S71.04 G2

Certifications - 5069-IA16

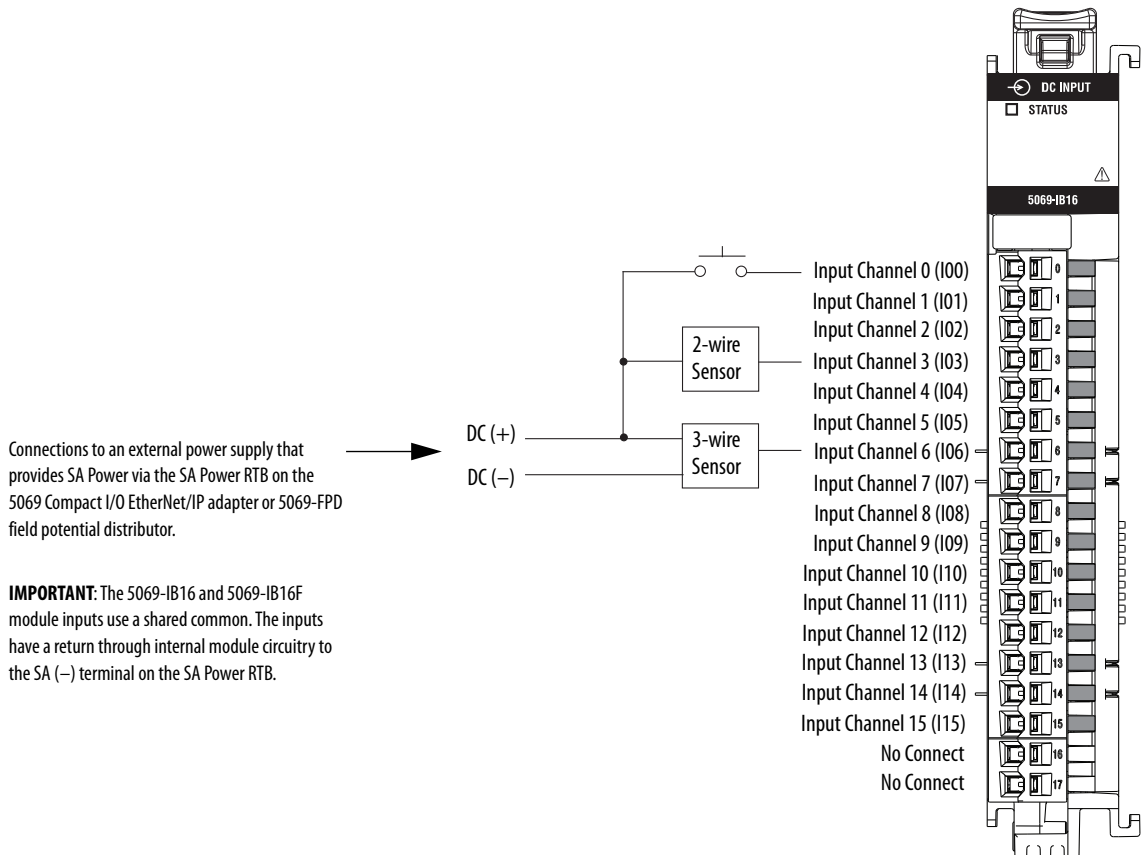
Certification ⁽¹⁾	5069-IA16
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> • EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1484X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-IB16 and 5069-IB16F Digital 16-point Sinking Input Modules

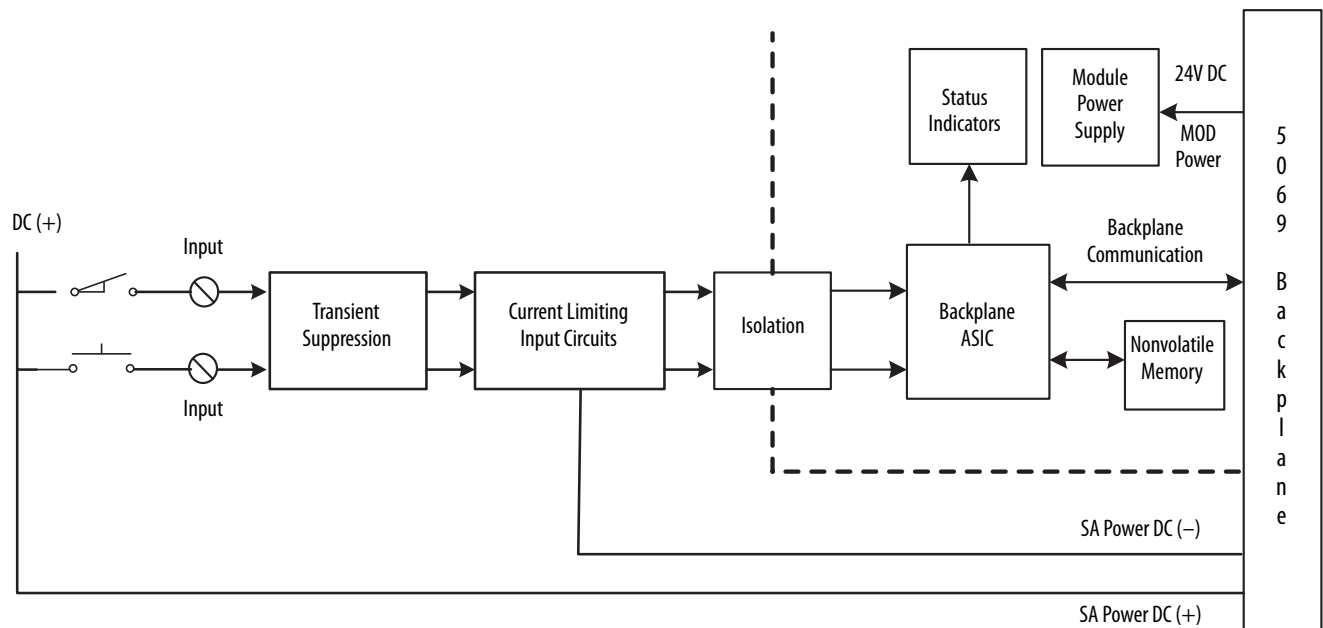
This figure shows a wiring diagram for the 5069-IB16 and 5069-IB16F modules.

5069-IB16 and 5069-IB16F Wiring Diagram



This figure shows a functional block diagram for the 5069-IB16 and 5069-IB16F modules.

5069-IB16 and 5069-IB16F Functional Block Diagram



Technical Specifications - 5069-IB16 and 5069-IB16F

Attribute	5069-IB16	5069-IB16F
On-state voltage, min ⁽¹⁾	10V DC	
On-state voltage, nom ⁽¹⁾	24V DC	
On-state voltage, max ⁽¹⁾	32V DC	
On-state current, min ⁽¹⁾	5 mA @ 10V	
On-state current, nom ⁽¹⁾	6 mA @ 24V DC	
On-state current, max ⁽¹⁾	7.4 mA @ 32V DC	
Off-state voltage, max ⁽¹⁾	5V DC	
Off-state current, min ⁽¹⁾	1.5 mA	
Input impedance, nom	4.1 kΩ	
Input impedance, max	7.0 kΩ	
Inrush current, max	< 250 mA peak (decaying to, 37% in 22 ms, without activation)	
Input delay time (screw to backplane) Off to On On to Off	≤ 100 μs, ±10 μs @ 25 °C (77 °F) ≤ 100 μs, ±10 μs @ 25 °C (77 °F)	≤ 10 μs, ±10 μs @ 25 °C (77 °F) ≤ 10 μs, ±10 μs @ 25 °C (77 °F)
Input drift	10 ns/°C (°F)	< 10 ns/°C (°F)
Input drift over temperature span	±100 ns/°C (°F) 0...60 °C (32...140 °F)	±10 ns/°C (°F) 0...60 °C (32...140 °F)
Input On to Off minimum pulse width	≤ 60 μs	≤ 6 μs
Input Off to On minimum pulse width	≤ 60 μs	≤ 6 μs
Input filter time Off to On On to Off	Hardware delay: 50 μs + filter time User-selectable filter time: 0...50 ms Hardware delay: 50 μs + filter time User-selectable filter time: 0...50 ms	Hardware delay: 2 μs + filter time User-selectable filter time: 0...50 ms Hardware delay: 3 μs + filter time User-selectable filter time: 0...50 ms
Reverse polarity protection	Yes	
Overvoltage protection, max	36V (fuse protected)	
Pulse and period measurements	Not supported	±2 μs
Simple counters Counter frequency	0 - f _{max} = 500 Hz (inv period 2 ms)	0 - f _{max} = 30 kHz (inv period 33.3 μs)
Frequency counter	0 - f _{max} = 500 Hz (inv period 2 ms)	0 - f _{max} = 30 kHz (inv period 33.3 μs)
Timestamp of inputs	Not supported	±10 μs accuracy 1 ns resolution
CIP sync	Not supported	Transport clock, and slave only ordinary clock
Overrides	Not supported	
Pulse latching	Not supported	Supported
Events	Not supported	Four events supported (triggered by any input or simple counters)
Pattern matching	Not supported	Supported
Extended counters	Not supported	

(1) Sensor Actuator (SA) Power-related attributes.

General Specifications - 5069-IB16 and 5069-IB16F

Attribute	5069-IB16	5069-IB16F
Inputs	16 Channels (1 group of 16), sinking	
Voltage category	12/24V DC Sink	
Input voltage range	10...32V DC	
Module Power bus (MOD Power) voltage range	18...32V DC	
Module Power bus (MOD Power) current, max	75 mA	
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC	
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A	
Sensor Actuator Power bus (SA Power) voltage range	10...32V DC	
Sensor Actuator Power bus (SA Power) current, max	200 mA module	
Sensor Actuator Power bus (SA Power) Passthrough voltage range	10...32V DC	
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A	
Power dissipation, max	3.9 W	
Thermal dissipation, max	13.3 BTU/hr	
Isolation voltage	300V (continuous), Basic Insulation Type No isolation between SA Power and input ports No isolation between individual input ports	
Module keying	Electronic keying via programming software	
Indicators	1 green/red module status indicator 16 yellow I/O status indicators	
Slot width	1	
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)	
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)	
RTB	One of the following RTB types. • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.	
Terminal screw torque (5069-RTB18-SCREW RTB only)	0.4 N·m (3.5 lb-in)	
RTB keying	None	
Wire category ⁽³⁾	2 - input ports 2 - power ports 1 wire per terminal for each signal port	
Wire size	5069-RTB18-SPRING connections: 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only. 5069-RTB18-SCREW connections: 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only.	
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)	
Weight, approx	175 g (0.39 lb)	
Enclosure type	None (open-style)	

General Specifications - 5069-IB16 and 5069-IB16F

Attribute	5069-IB16	5069-IB16F
North American temp code	T4	
ATEX/IECEx temp code	T4	
IECEx temp code	T4	

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-IB16 and 5069-IB16F

Attribute	5069-IB16, 5069-IB16F
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±3 kV @ 5 kHz on input ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on input ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

Certifications - 5069-IB16 and 5069-IB16F

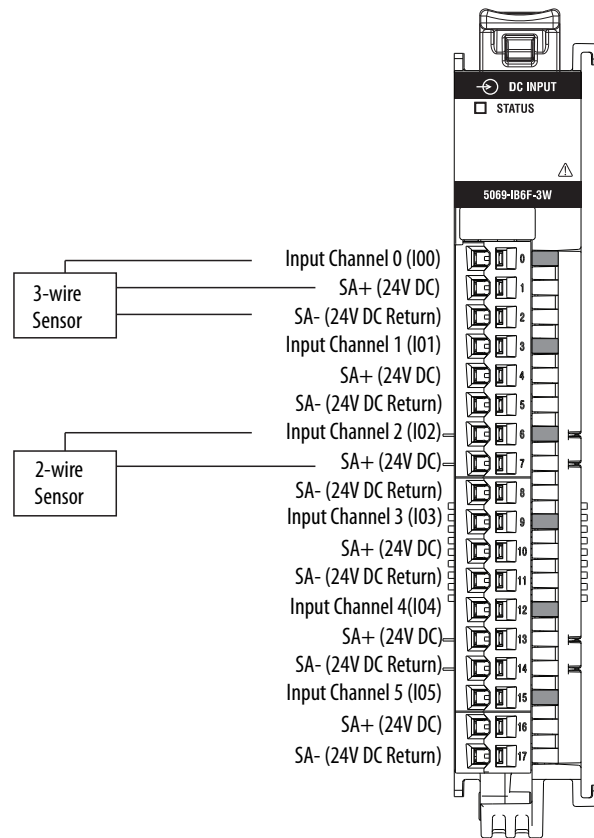
Certification ⁽¹⁾	5069-IB16, 5069-IB16F
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1484X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-IB6F-3W Digital 3-wire Sinking Input Module

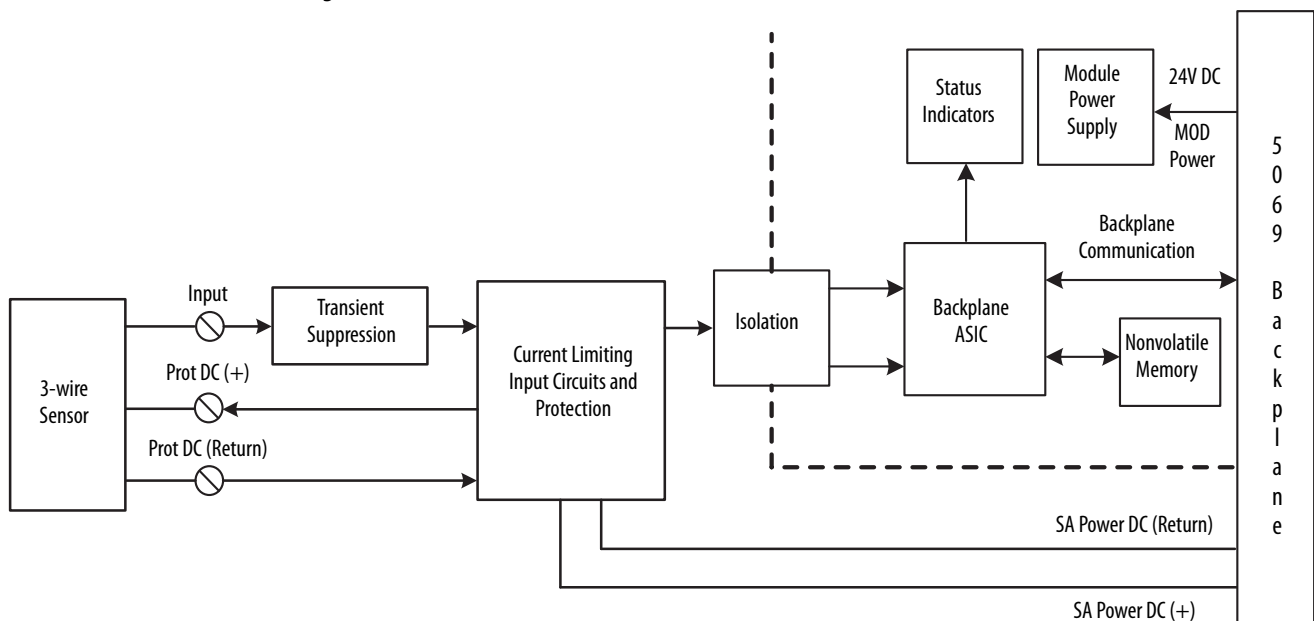
This figure shows a wiring diagram for the 5069-IB6F-3W module.

5069-IB6F-3W Wiring Diagram



This figure shows a functional block diagram for the 5069-IB6F-3W module.

5069-IB6F-3W Functional Block Diagram



Technical Specifications - 5069-IB6F-3W

Attribute	5069-IB6F-3W
On-state voltage, min ⁽¹⁾	10V DC
On-state voltage, nom ⁽¹⁾	24V DC
On-state voltage, max ⁽¹⁾	32V DC
Off-state voltage, max ⁽¹⁾	5V DC
On-state current, min ⁽¹⁾	5 mA @ 10V DC
On-state current, nom ⁽¹⁾	6 mA @ 24V DC
On-state current, max ⁽¹⁾	7.4 mA @ 32V DC
Off-state current, min ⁽¹⁾	1.5 mA
Input impedance, nom	4.1 kΩ
Input impedance, input, max	7.0 kΩ
Inrush current, max	< 250 mA peak (decaying to, 37% in 22 ms, without activation)
Input delay time (screw to backplane) Off to On On to Off	≤ 10 μs, ±10 μs @ 25 °C (77 °F) ≤ 10 μs, ±10 μs @ 25 °C (77 °F)
Input drift	<10 ns/°C (°F)
Input drift over temperature span	±10 ns/°C (°F) from 0...60 °C (32...140 °F)
Input On to Off minimum pulse width	≤ 6 μs
Input Off to On minimum pulse width	≤ 6 μs
Input filter time Off to On On to Off	Hardware delay: 2 μs + filter time User-selectable filter time: 0...50 ms Hardware delay: 3 μs + filter time User-selectable filter time: 0...50 ms
Reverse polarity protection	Yes
Overvoltage protection, max	36V (fuse protected)
Pulse width and period measurements	±2 μs
Simple counters Counter frequency	0 - f _{max} = 30 kHz (inv period 33.3 μs)
Frequency counter	0 - f _{max} = 30 kHz (inv period 33.3 μs)
Timestamp of inputs	±10 μs accuracy 1 ns resolution
CIP sync (PTPO clock)	Transport clock, and slave only ordinary clock
Overrides	Not supported
Pulse latching	Supported
Events	4 events supported (triggered by any input or simple counters)
Pattern matching	Supported
Extended counters	Not supported

(1) Sensor Actuator (SA) Field Power related attributes.

General Specifications - 5069-IB6F-3W

Attribute	5069-IB6F-3W
Inputs	6 Channels (1 group of 6), sinking
Voltage category	12/24V DC Sink
Input voltage range	10...32V DC
Module Power bus (MOD Power) voltage range	18V...32V DC
Module Power bus (MOD Power) current, max	75 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator Power bus (SA Power) voltage range	10...32V DC
Sensor Actuator Power bus (SA Power) current, max	150 mA per channel 900 mA module
Sensor Actuator Power bus (SA Power) Passthrough voltage range	10...32V DC
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A
Power dissipation, max	2.4 W
Thermal dissipation, max	8.1 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type No isolation between SA Power and input ports No isolation between individual input ports
Module keying	Electronic, module keying, software configurable
Indicators	1 green/red module status indicator 6 yellow I/O status indicators
Slot width	1
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
RTB	One of the following RTB types. • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW RTB only)	0.4 N•m (3.5 lb•in)
RTB keying	None
Wire category ⁽³⁾	2 - input ports 2 - power ports 1 wire per terminal for each signal port
Wire size	5069-RTB18-SPRING removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only. 5069-RTB18-SCREW removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only.
Insulation stripping length	5069-RTB18-SPRING removable terminal block: 10 mm (0.39 in.) 5069-RTB18-SCREW removable terminal block: 12 mm (0.47 in.)

General Specifications - 5069-IB6F-3W

Attribute	5069-IB6F-3W
Weight, approx	175 g (0.39 lb)
Enclosure type rating	None (Open - style)
North American temp code	T4
ATEX/IECEX temp code	T4
IECEX temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-IB6F-3W

Attribute	5069-IB6F-3W
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max.	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharge 8 kV air discharge
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM @ 900 MHz 10V/m with 200 Hz 50% pulse 100% AM @ 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz

Environmental Specifications - 5069-IB6F-3W

Attribute	5069-IB6F-3W
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±3 kV @ 5 kHz on input ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on input ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz . . . 80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

Certifications - 5069-IB6F-3W

Certification ⁽¹⁾	5069-IB6F-3W
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1484X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-OA16 Digital 16-point 120/240V AC Output Module

This figure shows a wiring diagram for the 5069-OA16 module.

5069-OA16 Wiring Diagram

Connections to an external power supply that provides SA Power via the SA Power RTB on one of the following:

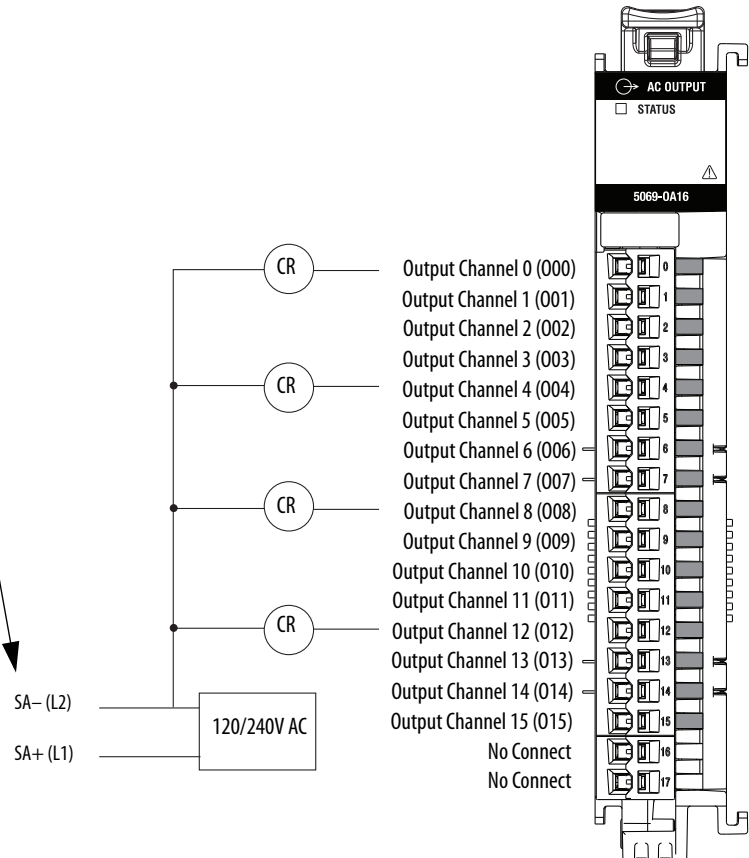
- CompactLogix 5380 controller
- 5069 Compact I/O EtherNet/IP adapter
- 5069-FPD field potential distributor

IMPORTANT: Remember the following:

- The 5069-OA16 module inputs use a shared common. The outputs return through the external load to the SA- terminal on the SA Power RTB.
- If you install modules in a 5069 Compact I/O system that use AC SA power and DC SA power, you must install them on separate SA Power buses.

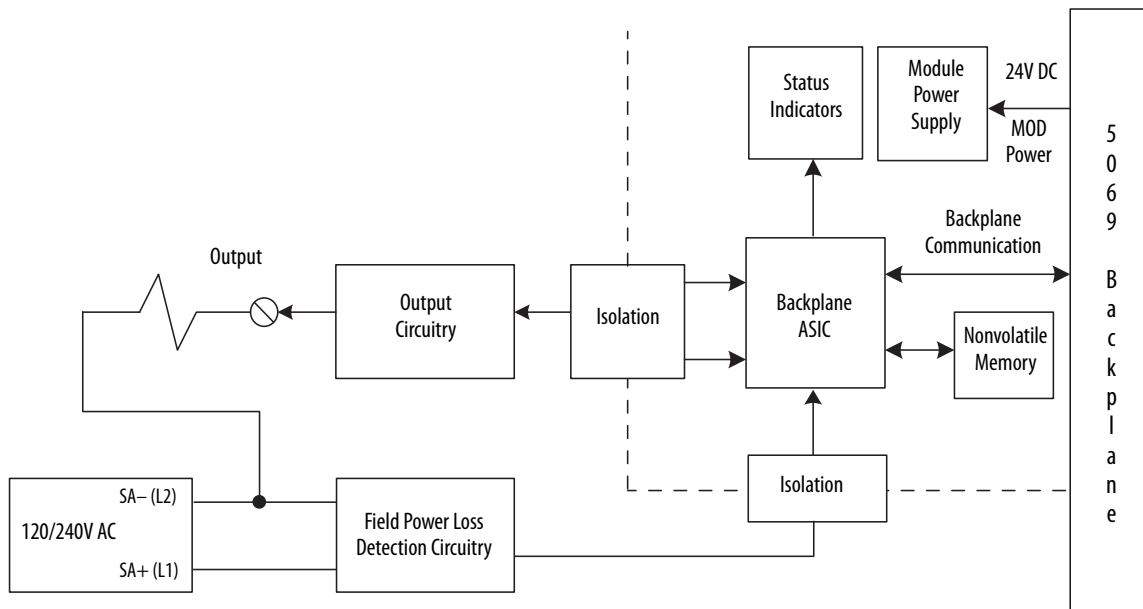
You use the 5069-FPD field potential distributor to establish a new SA Power bus in a 5069 Compact I/O system. SA Power buses are isolated from each other. To keep the modules on separate SA Power buses, complete the following steps.

1. Install the modules that use one type of SA power, for example AC, to the right of the adapter or controller, that is, the first SA Power bus.
2. Install the 5069-FPD field potential distributor to establish a second SA Power bus.
3. Install the modules that use the other type of SA power, for example DC, on the second SA Power bus.



This figure shows a functional block diagram for the 5069-OA16 module.

5069-OA16 Functional Block Diagram



Technical Specifications - 5069-0A16

Attribute	5069-0A16
On-state voltage, min	85V AC
On-state voltage, nom	120/240V AC
On-state voltage, max	264V AC
On-state voltage drop, max	1.5V AC @ 0.5 A
Output current per channel, max	0.5 A
Output current per module, max	4 A
Off-state leakage current, max ⁽¹⁾	1 mA
Surge current per point	5 A max for 25 ms per point, repeatable every 2 s
Output delay time (backplane to screw) Off to On On to Off	1/2 cycle time (typ) @ 0...60 °C (32...140 °F) 1/2 cycle time (typ) @ 0...60 °C (32...140 °F)
Field power loss detection	Yes
Open load detection diagnostics	Not supported
Output short circuit/overload/overtemp detection	Not supported
Output short circuit/overload protection	Not supported
Reverse polarity protection	Not supported
Overvoltage protections, max	Not supported
Scheduled outputs	Not supported
Pilot duty rating	Resistive/General Pilot Duty 0.5 A pilot duty
Increased output current capability	16 outputs can be paralleled to increase current capability by 0.25 A per channel 8 outputs can be paralleled to increase current capability by 0.5 A per channel
Output control in fault state per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Output states in program mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Output states in fault mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Duration of fault mode per point	<ul style="list-style-type: none"> • 1 s • 2 s • 5 s • 10 s • Forever (default)

(1) Recommended Loading Resistor - To limit the effects of leakage current through solid state outputs, you can connect a loading resistor in parallel with your load. For 120V AC operation, use a 15 kΩ, 2 W resistor. For 240V AC operation, use a 15 kΩ, 5 W resistor.

General Specifications - 5069-0A16

Attribute	5069-0A16
Number of outputs	16 (One group of 16)
Voltage category	120/240V AC
Output voltage range	85...264V AC
Output voltage frequency	47...63 Hz
MOD Power	100 mA @ 18...32V DC
MOD Power (Passthrough) ⁽¹⁾	9.55 A @ 18...32V DC
SA Power	4 A @ 85...264V AC
SA Power (Passthrough) ⁽²⁾	9.975 A @ 85...264V AC
Do not exceed 10 A MOD or SA Power (Passthrough) current draw. The 5069-0A16 module complies to ATEX/IECEx when used at or below 125V AC.	
Power dissipation	3.4 W
Thermal dissipation	11.6 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type Type tested at 1800V AC for 60 s No isolation between individual channels
Module keying	Electronic keying via programming software
Indicators	1 green/red module status indicator 16 yellow I/O status indicators
Slot width	1
Dimensions (HxWxD)	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, chromate-passivated steel DIN rail. EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.)
RTB	One of the following RTB types. <ul style="list-style-type: none"> • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW RTB only)	0.4 N·m (3.5 lb-in)
RTB keying	None
Wire category	2 - output ports 2 - power ports 1 wire per terminal for each signal port
Wire size	5069-RTB18-SCREW connections 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only. 5069-RTB18-SPRING connections 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only.
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)

General Specifications - 5069-0A16

Attribute	5069-0A16
Weight, approx	175 g (0.39 lb)
Enclosure type rating	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEX temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.

Environmental Specifications - 5069-0A16

Attribute	5069-0A16
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C < Ta < +60 °C (+32 °F < Ta < +140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±4 kV @ 5 kHz on signal ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Corrosion resistance classification	ISA S71.04 G2

Certifications - 5069-0A16

Certification ⁽¹⁾	5069-0A16
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> • EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1484X When used at or below 125V DC or 30V DC
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

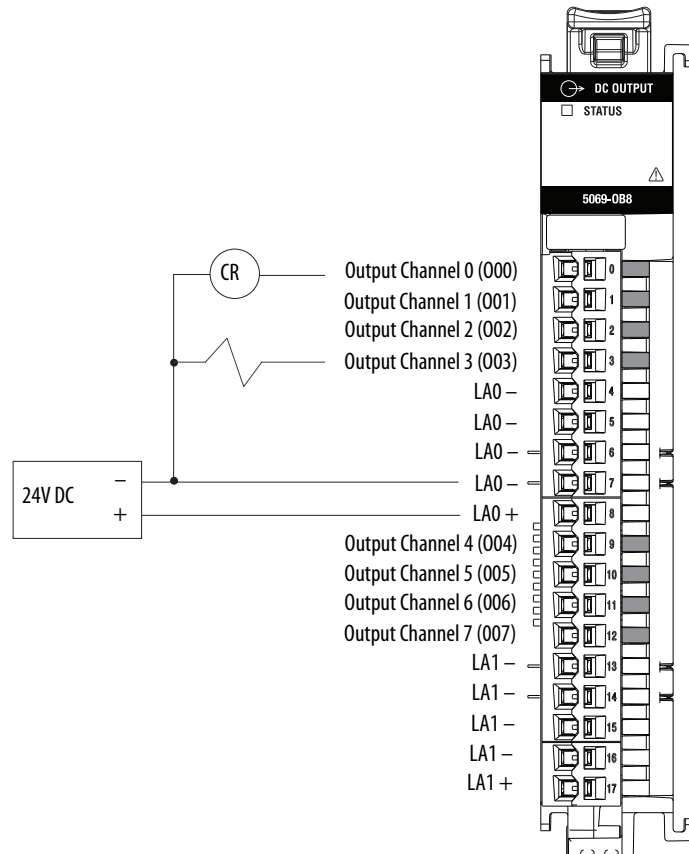
(1) See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-OB8 Digital 8-point 24V DC Output Module

This figure shows a wiring diagram for the 5069-OB8 module.

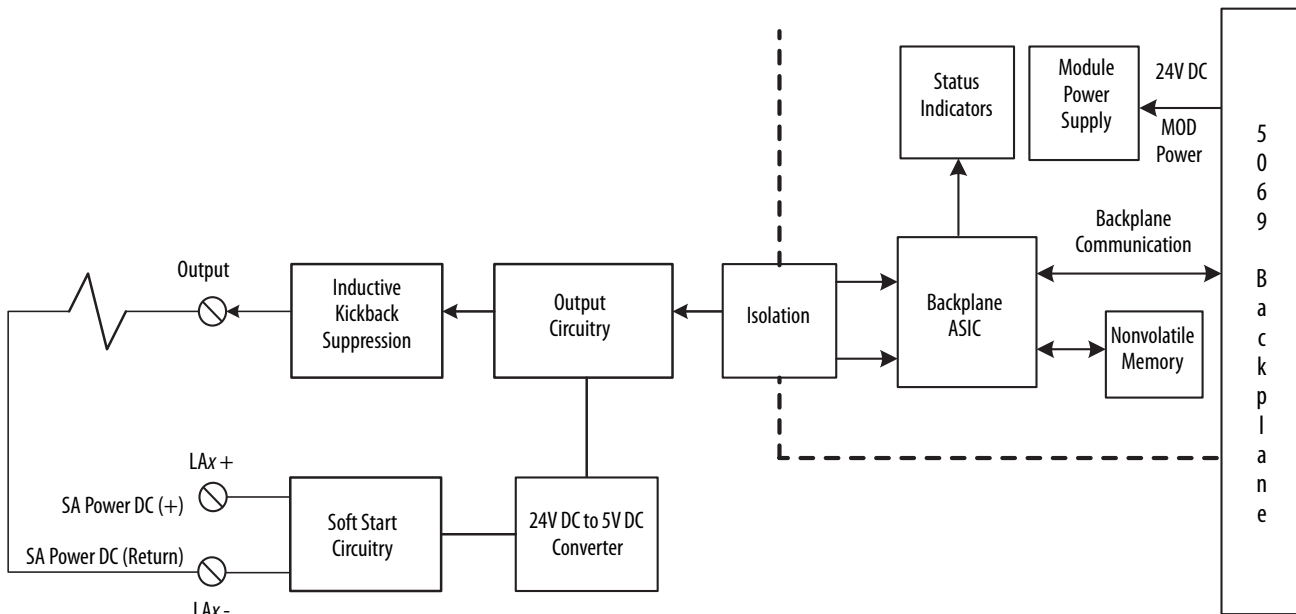
5069-OB8 Wiring Diagram

IMPORTANT: The Local Actuator (LA+ and LA-) connections are used to supply field-side power to the module. The module does not draw current from the SA power bus that is internal to the system. Output channels 0...3 use LA0 +/-, and output channels 4...7 use LA1 +/-.



This figure shows a functional block diagram for the 5069-OB8 module.

5069-OB8 Functional Block Diagram



Technical Specifications - 5069-0B8

Attribute	5069-0B8
On-state voltage, min ⁽¹⁾	10V DC
On-state voltage, nom ⁽¹⁾	24V DC
On-state voltage, max ⁽¹⁾	32V DC
On-state voltage drop, max ⁽¹⁾	0.25V DC
Off-state voltage, max ⁽¹⁾	< 10V DC
On-state current per channel, min ⁽¹⁾	1 mA
Off-state leakage current per point, max ⁽²⁾	0.5 mA
Output current per channel, max	2 A
Output current per group, max	8 A
Output current per module, max	16 A
Surge current per point	4 A max for 10 ms per point, repeatable every 2 s
Output delay time (backplane to screw) Off to On On to Off	≤ 100 μs @ 25 °C (77 °F) @ 2 A ≤ 100 μs @ 25 °C (77 °F) @ 2 A
Pulse width, min	≤ 200 μs T _{on} min + T _{off} min @ 2 A @ 25 °C (77 °F)
Output drift	±100 ns/°C (°F) from 0...60 °C (32...140 °F) @ 2 A
Field power loss detection	Yes
Open load detection diagnostics	Yes (per channel diagnostics)
Output short circuit/overload/overtemp detection	Yes (per channel diagnostics)
Output short circuit/overload protection	Yes
Reverse voltage protection	Yes
Overvoltage protection, max	36V (fuse protected)
Pilot duty rating	Resistive/General Pilot Duty 2 A pilot duty
Increased output current capability	Outputs can be paralleled to increase current capability by 2 A per channel
Output control in fault state per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Output states in program mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Output states in fault mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Duration of fault mode per point	<ul style="list-style-type: none"> • 1 s • 2 s • 5 s • 10 s • Forever (default)

(1) Local Actuator (LA) Field Power related attributes.

(2) Recommended Loading Resistor - To limit the effects of leakage current through solid state outputs, you can connect a loading resistor in parallel with your load. For 24V DC operation, use a 5.6 KΩ, 0.5 W resistor for transistor outputs.

General Specifications - 5069-OB8

Attribute	5069-OB8
Number of outputs	8 (Two groups of 4)
Voltage category	24V DC
Output voltage range	10...32V DC
MOD Power	75 mA @ 18...32V DC
MOD Power (Passthrough) ⁽¹⁾	9.55 A @ 18...32V DC
LA Power	2 A per channel @ 10...32V DC 8 A per group @ 10...32V DC 16 A per module @ 10...32V DC
SA Power (Passthrough) ⁽²⁾	9.95 A @ 10...32V DC
Do not exceed 10 A MOD or SA Power (Passthrough) current draw.	
Power dissipation	3.2 W
Thermal dissipation	10.9 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type Type tested at 1800V AC for 60 s No isolation between LA power and output ports No isolation between individual output ports
Module keying	Electronic keying via programming software
Indicators	1 green/red module status indicator 8 yellow I/O status indicators
Slot width	1
Dimensions (HxWxD)	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, chromate-passivated steel DIN rail. EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.)
RTB	One of the following RTB types. • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW RTB only)	0.4 N·m (3.5 lb-in)
RTB keying	None
Wire category	2 - output ports 2 - power ports 1 wire per terminal for each signal port
Wire size	5069-RTB18-SPRING connections 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only. 5069-RTB18-SCREW connections 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only.
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)

General Specifications - 5069-0B8

Attribute	5069-0B8
Terminal screw torque (5069-RTB18-SCREW RTB only)	0.4 N·m (3.5 lb-in)
Weight, approx	175 g (0.39 lb)
Enclosure type rating	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.

Environmental Specifications - 5069-0B8

Attribute	5069-0B8
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C < Ta < +60 °C (+32 °F < Ta < +140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±4 kV @ 5 kHz on signal ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on signal ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Corrosion resistance classification	ISA S71.04 G2

Certifications - 5069-0B8

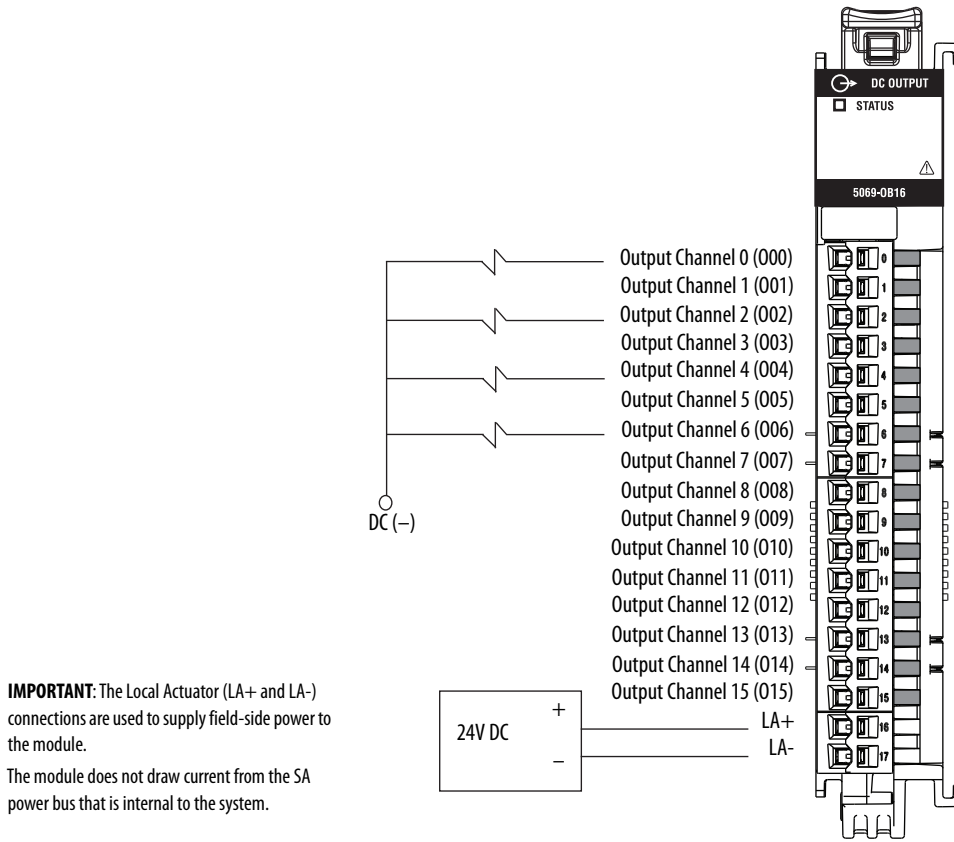
Certification ⁽¹⁾	5069-0B8
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1484X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-OB16 and 5069-OB16F Digital 16-point Sourcing Output Modules

This figure shows a wiring diagram for the 5069-OB16 and 5069-OB16F modules.

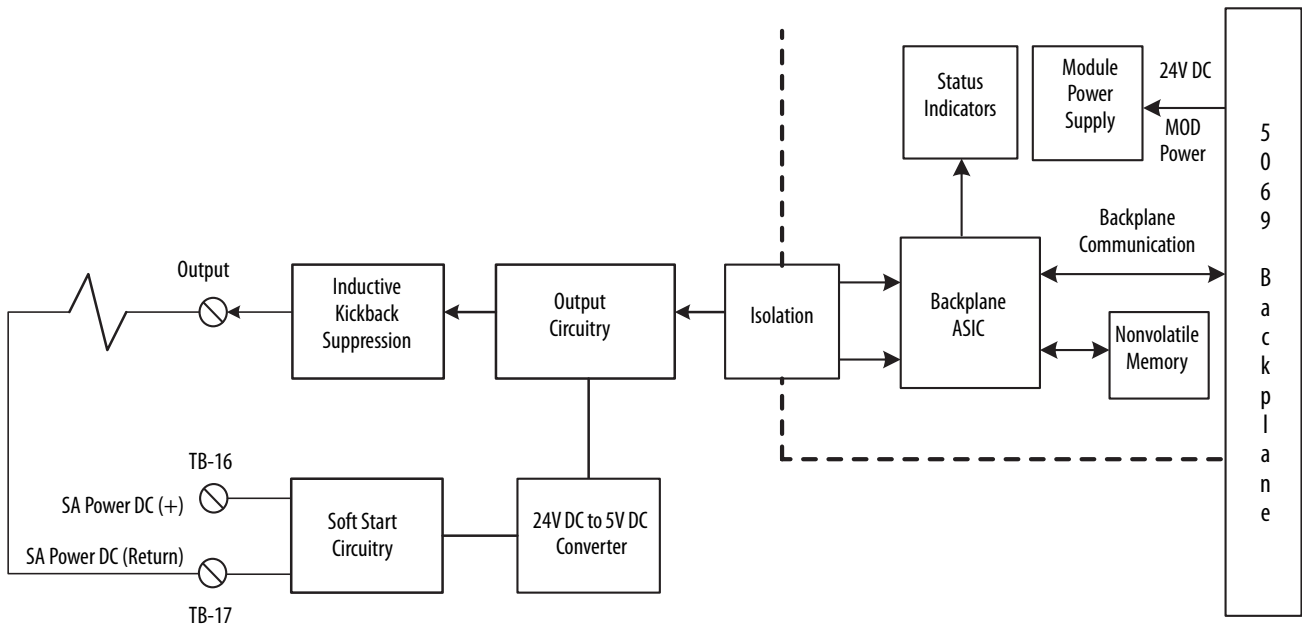
5069-OB16 and 5069-OB16F Wiring Diagram



IMPORTANT: The Local Actuator (LA+ and LA-) connections are used to supply field-side power to the module.
The module does not draw current from the SA power bus that is internal to the system.

This figure shows a functional block diagram for the 5069-OB16 and 5069-OB16F modules.

5069-OB16 and 5069-OB16F Functional Block Diagram



Technical Specifications - 5069-OB16 and 5069-OB16F

Attribute	5069-OB16	5069-OB16F
On-state voltage, min ⁽¹⁾	10V DC	
On-state voltage, nom ⁽¹⁾	24V DC	
On-state voltage, max ⁽¹⁾	32V DC	
On-state voltage drop, max ⁽¹⁾	< 0.2V DC	
On-state current per channel, min ⁽¹⁾	1 mA	
Off-state voltage, max ⁽¹⁾	5V DC with 1 mA min load	
Off-state leakage current per point, max ⁽²⁾	< 0.5 mA per point	
Output current rating	0.5 A per channel 8 A per module, max	
Surge current per point	1 A max for 10 ms per point, repeatable every 2 s	
Output delay time (backplane to screw) Off to On On to Off	≤ 100 μs, ±10 μs @ 25 °C (77 °F) @ 0.5 A ≤ 100 μs, ±10 μs @ 25 °C (77 °F) @ 0.5 A	≤ 10 μs @ 25 °C (77 °F) @ 0.5 A ≤ 10 μs, @ 25 °C (77 °F) @ 0.5 A
Pulse width, min	≤ 200 μs T _{on} min + T _{off} min @ 0.5 A @ 25 °C (77 °F)	≤ 20 μs T _{on} min + T _{off} min @ 0.5 A @ 25 °C (77 °F)
Output drift	±100 ns/°C (°F) from 0...60 °C (32...140 °F) @ 0.5 A	±10 ns/°C (°F) from 0...60 °C (32...140 °F) @ 0.5 A
Open load detection diagnostics	Yes (per channel diagnostics)	
Output short circuit/overload/overtemp detection	Yes (per channel diagnostics)	
Output short circuit/overload protection	Yes	
Reverse voltage protection	Yes	
Overvoltage protection, max	36V (fuse protected)	
Pilot duty	0.5 A pilot duty rating per channel @ 10...32V DC	
Increased output current capability	Outputs can be paralleled to increase current capability by 0.5 A per channel	
Output control in fault state per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default) 	
Output states in program mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default) 	
Output states in fault mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default) 	
Duration of fault mode per point	<ul style="list-style-type: none"> • 1 s • 2 s • 5 s • 10 s • Forever (default) 	
Scheduled outputs	Not supported	±10 μs accuracy 1 ns resolution
CIP sync	Not supported	Supported

(1) Local Actuator (LA) Field Power related attributes.

(2) Recommended Loading Resistor - To limit the effects of leakage current through solid state outputs, you can connect a loading resistor in parallel with your load. For 24V DC operation, use a 5.6 KΩ, 0.5 W resistor for transistor operation.

General Specifications - 5069-OB16 and 5069-OB16F

Attribute	5069-OB16	5069-OB16F
Outputs	16 Channels (1 group of 16), sourcing	
Voltage category	12/24V DC source	
Output voltage range	10...32V DC	
Module Power bus (MOD Power) voltage range	18...32V DC	
Module Power bus (MOD Power) current, max	75 mA	
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC	
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A	
Local Actuator Power bus (LA Power) voltage range	10...32V DC	
Local Actuator Power bus (LA Power) current, max	0.5 A per channel 8 A module	
Sensor Actuator Power bus (SA Power) Passthrough voltage range	10...32V DC	
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A	
Power dissipation, max	3.25 W (16 channels @ 0.5 A)	
Thermal dissipation, max	11.09 BTU/hr	
Isolation voltage	300V (continuous), Basic Insulation Type No isolation between LA power and output ports No isolation between individual output ports	
Module keying	Electronic, module keying, software configurable	
Indicators	1 green/red module status indicator 16 yellow/red I/O status indicators	
Slot width	1	
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)	
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)	
RTB	One of the following RTB types. • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.	
Terminal screw torque (5069-RTB18-SCREW)	0.4 N•m (3.5 lb•in)	
RTB keying	None	
Wire category ⁽³⁾	2 - output ports 2 - power ports 1 wire per terminal for each signal port	
Wire size	5069-RTB18-SPRING removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation 5069-RTB18-SCREW removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation	

General Specifications - 5069-OB16 and 5069-OB16F

Attribute	5069-OB16	5069-OB16F
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)	
Weight, approx	175 g (0.39 lb)	
Enclosure type	None (open - style)	
North American temp code	T4	
ATEX temp code	T4	
IECEx temp code	T4	

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-OB16 and 5069-OB16F

Attribute	5069-OB16, 5069-OB16F
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max.	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±3 kV @ 5 kHz on output ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on output ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD power port

Certifications - 5069-OB16 and 5069-OB16F

Certification ⁽¹⁾	5069-OB16, 5069-OB16F
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1484X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

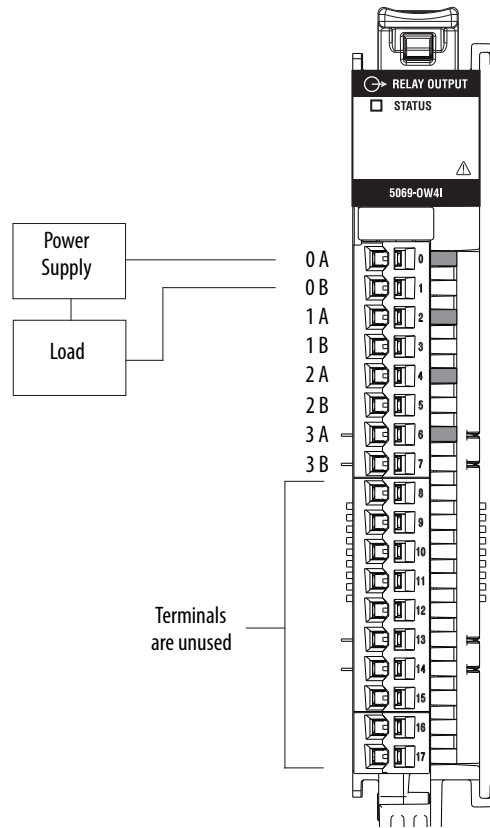
(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-OW4I Digital 4-point Isolated Relay Output Module

This figure shows a wiring diagram for the 5069-OW4I module.

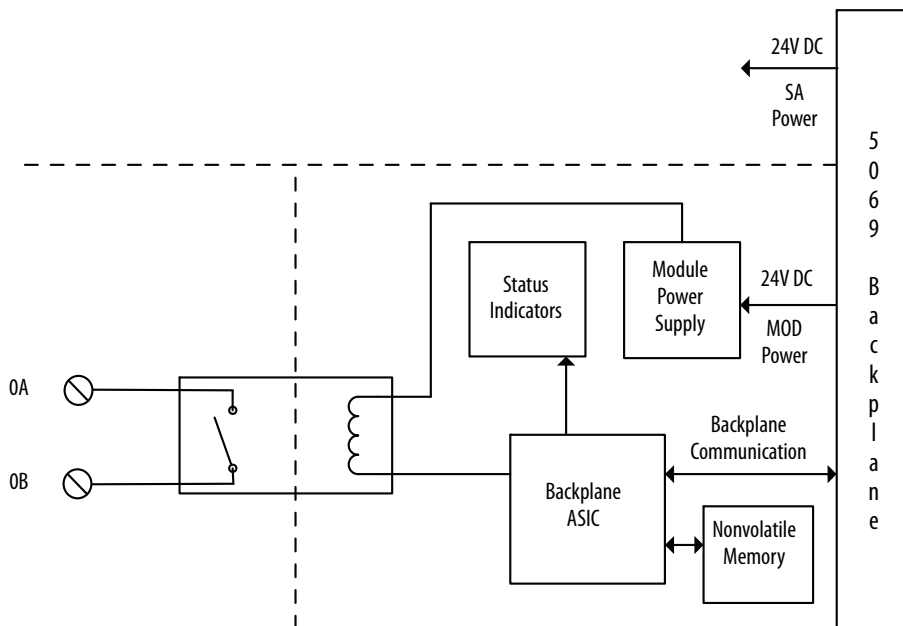
5069-OW4I Wiring Diagram

IMPORTANT: The 5069-OW4I module does not use SA power. That is, it does not draw current from the SA Power bus. The module passes it through to the next 5069 Compact I/O module in the system.



This figure shows a functional block diagram for the 5069-OW4I module.

5069-OW4I Functional Block Diagram



Technical Specifications - 5069-0W4I

Attribute	5069-0W4I
Relay rating ⁽¹⁾	5...30V DC, 2 A resistive/channel 5...264V AC, 50/60 Hz, 2 A resistive/channel 5...250V AC, 50/60 Hz, 2 A general use/channel 5...125V AC, 50/60 Hz, 2 A ATEX/IECEX 8 A maximum per module
Off-state leakage	0 mA (dry contact, no onboard snubbers)
Output current rating	2 A per channel 8 A per module, max
Output delay time, max Off to On On to Off	10 ms 10 ms
Switching frequency	1 operation every 3 seconds (0.3 Hz at rated load)
Initial contact resistance, max	30 mΩ
Bounce time, mean	500 μs
Output control in fault state per point	<ul style="list-style-type: none"> • Hold last state • On • Off (default)
Output states in program mode per point	<ul style="list-style-type: none"> • Hold last state • On • Off (default)
Output states in fault mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Duration of fault mode per point	<ul style="list-style-type: none"> • 1 s • 2 s • 5 s • 10 s • Forever (default)
Delay to fault	Supported
Fusing	Outputs are not fused.
Minimum load current	1 mA
Expected contact life	300K cycles resistive, 100K cycles inductive
Pilot duty rating	5...240V AC, 50/60 Hz, C300 pilot duty per channel 5...125V DC, R150 pilot duty per channel

(1) **Surge Suppression** - Connecting surge suppressors across your external inductive load extends the life of the module. For additional details, see the Industrial Automation Wiring and Grounding Guidelines, Allen-Bradley publication [1770-4.1](#).

General Specifications - 5069-0W4I

Attribute	5069-0W4I
Outputs	4 - Form A (normally open)
Output voltage range	5...125V DC 5...264V AC
Module Power bus (MOD Power) voltage range	18...32V DC
Module Power bus (MOD Power) current, max	75 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator Power bus (SA Power) Passthrough voltage range	0...32V DC
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A
Power dissipation, max	2.3 W

General Specifications - 5069-0W4I

Attribute	5069-0W4I
Thermal dissipation, max	7.85 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type
Slot width	1
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: <ul style="list-style-type: none"> • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
RTB	One of the following RTB types. <ul style="list-style-type: none"> • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW)	0.4 N•m (3.5 lb•in)
RTB keying	None
Wire category ⁽³⁾	1 - relay ports 2 - power ports 1 wire per terminal for each signal port
Wire size	5069-RTB18-SPRING removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation Use minimum 18 AWG, 105 °C (221 °F) rated wire for load connections to relay output modules. 5069-RTB18-SCREW removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation Use minimum 18 AWG, 105 °C (221 °F) rated wire for load connections to relay output modules.
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)
Weight, approx	175 g (0.39 lb)
Enclosure type	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-0W4I

Attribute	5069-0W4I
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, storage IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz

Environmental Specifications - 5069-0W4I

Attribute	5069-0W4I
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80 . . . 2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000 . . . 2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±4 kV @ 5 kHz on relay ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on relay ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz . . . 80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

Certifications - 5069-0W4I

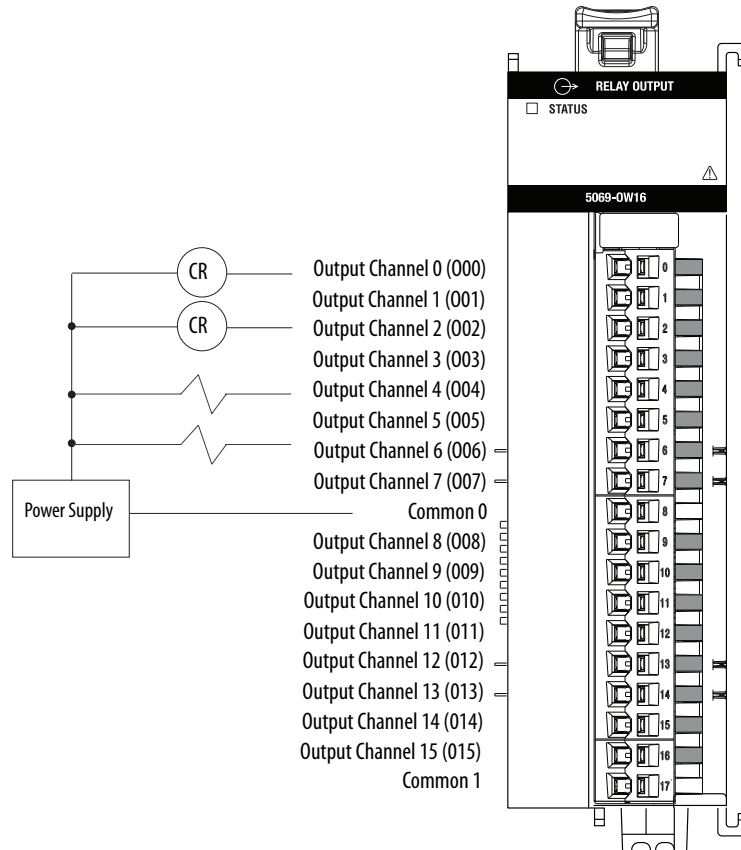
Certification ⁽¹⁾	5069-0W4I
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-0; General Requirements EN 60079-15; Potentially Explosive Atmospheres, Protection "n" II 3 G Ex nA nC IIC T4 Gc DEMKO 15 ATEX 1484X When used at or below 125V DC or 30V DC
IECEX	IECEX System, compliant with: <ul style="list-style-type: none"> IEC 60079-0; General Requirements IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" II 3 G Ex nA nC IIC T4 Gc IECEX UL 15.0055X When used at or below 125V DC or 30V DC
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-OW16 Digital 16-point Relay Output Module

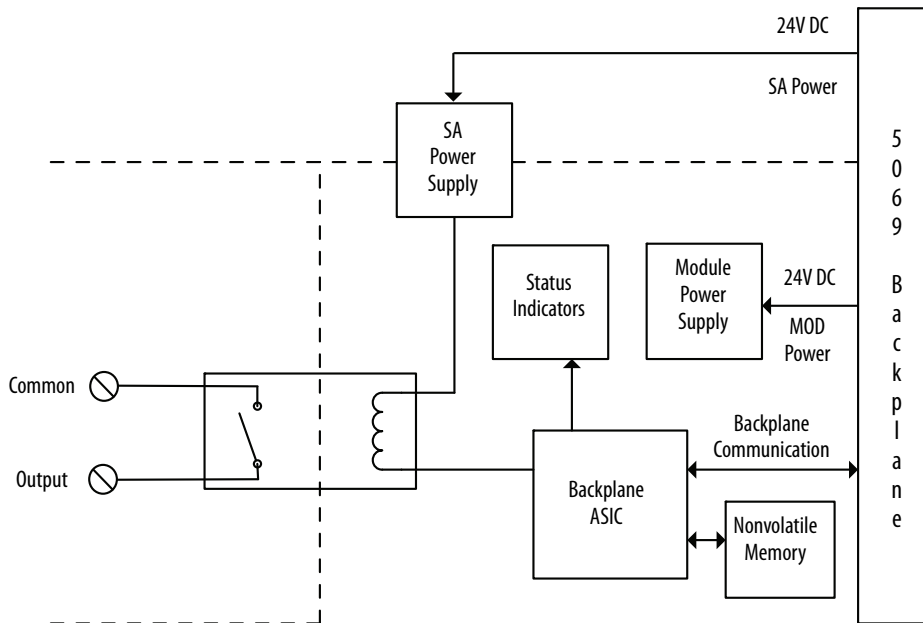
This figure shows a wiring diagram for the 5069-OW16 module.

5069-OW16 Wiring Diagram



This figure shows a functional block diagram for the 5069-OW16 module.

5069-OW16 Functional Block Diagram



Technical Specifications - 5069-0W16

Attribute	5069-0W16
Relay ratings	2 A resistive per channel @ 5...30V DC 2 A resistive per channel @ 5...264V AC, 50/60 Hz 2 A general use per channel @ 5...250V AC, 50/60 Hz 2 A @ 5...125V AC, ATEX/IECEX
Off-state leakage current per point, max	0 mA (dry contact, no onboard snubbers)
Output current per group, max	8 A
Output current per module, max	16 A
Output delay time, max Off to On On to Off	10 ms 10 ms
Switching frequency	1 operation every 3 seconds (0.3 Hz at rated load)
Initial contact resistance, max	30 mΩ
Bounce time, mean	500 μs
Delay to fault	Supported
Fusing	Outputs are not fused
Minimum load current	1 mA
Expected contact life	300K cycles resistive, 100K cycles inductive
Pilot duty rating	5...240V AC, 50/60 Hz, C300 pilot duty per channel 5...125V DC, R150 pilot duty per channel
Increased output current capability	16 outputs can be paralleled to increase current capability by 1 A per channel 8 outputs can be paralleled to increase current capability by 2 A per channel
Output control in fault state per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Output states in program mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Output states in fault mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Duration of fault mode per point	<ul style="list-style-type: none"> • 1 • 2 • 5 • 10 s • Forever (default)

General Specifications - 5069-0W16

Attribute	5069-0W16
Outputs	16 (Two groups of 8) - Form A (normally open)
Output voltage range	5...125V DC 5...264V AC
MOD Power	75 mA @ 18...32V DC
MOD Power (Passthrough) ⁽¹⁾	9.55 A @ 18...32V DC
SA Power	150 mA @ 18...32V DC
SA Power (Passthrough) ⁽²⁾	9.95 A @ 18...32V DC
Do not exceed 10 A MOD or SA Power (Passthrough) current draw. The 5069-0W16 module complies with ATEX/IECEX when used at or below 125V AC or 30V DC.	
Power dissipation	3.0 W
Thermal dissipation	10.2 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type Type tested at 1800V AC for 60 s No isolation between individual channels

General Specifications - 5069-0W16

Attribute	5069-0W16
Module keying	Electronic keying via programming software
Indicators	1 green/red module status indicator 16 yellow I/O status indicators
Slot width	1.5
Dimensions (HxWxD), approx	138 x 36 x 105 mm (5.43 x 1.42 x 4.15 in.)
DIN rail	Compatible zinc-plated, chromate-passivated steel DIN rail. EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.)
RTB	One of the following RTB types. <ul style="list-style-type: none"> • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW RTB only)	0.4 N-m (3.5 lb-in)
RTB keying	None
Wire category	1 - relay ports 2 - power ports 1 wire per terminal for each signal port
Wire size	5069-RTB18-SPRING connections 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only. Use minimum 18 AWG, 105 °C (221 °F) rated wire for load connections to relay output modules. 5069-RTB18-SCREW connections 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only. Use minimum 18 AWG, 105 °C (221 °F) rated wire for load connections to relay output modules.
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)
Weight, approx	240 g (0.53 lb.)
Enclosure type rating	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.

Environmental Specifications - 5069-0W16

Attribute	5069-0W16
Temperature, operating IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0 °C < Ta < +60 °C (+32 °F < Ta < +140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g

Environmental Specifications - 5069-0W16

Attribute	5069-0W16
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±3 kV @ 5 kHz on relay ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on relay ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Corrosion resistance classification	ISA S71.04 G2

Certifications - 5069-0W16

Certification ⁽¹⁾	5069-0W16
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-0; General Requirements EN 60079-15; Potentially Explosive Atmospheres, Protection "n" II 3 G Ex nA nC IIC T4 Gc DEMKO 15 ATEX 1484X When used at or below 125V DC or 30V DC
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> IEC 60079-0; General Requirements IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" II 3 G Ex nA nC IIC T4 Gc IECEx UL 15.0055X When used at or below 125V DC or 30V DC
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

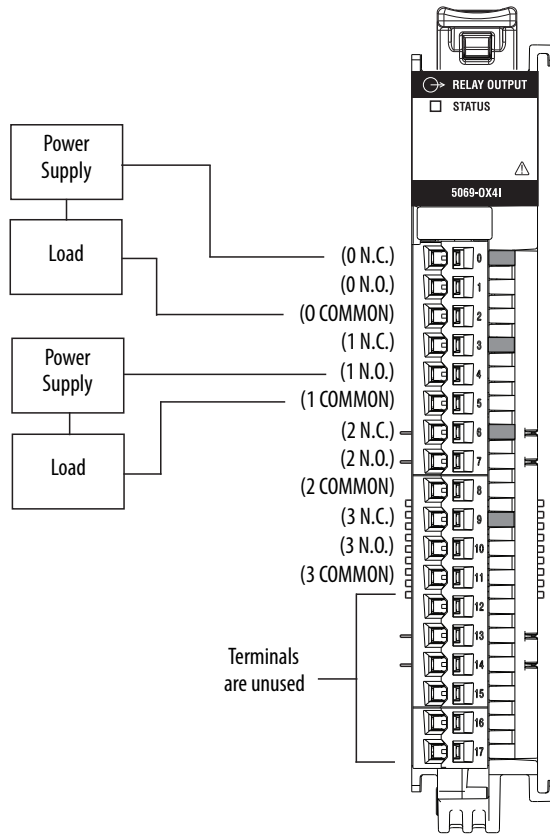
(1) See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-OX4I Digital 4-point Isolated Normally-open/Normally-closed Output Module

This figure shows a wiring diagram for the 5069-OX4I module.

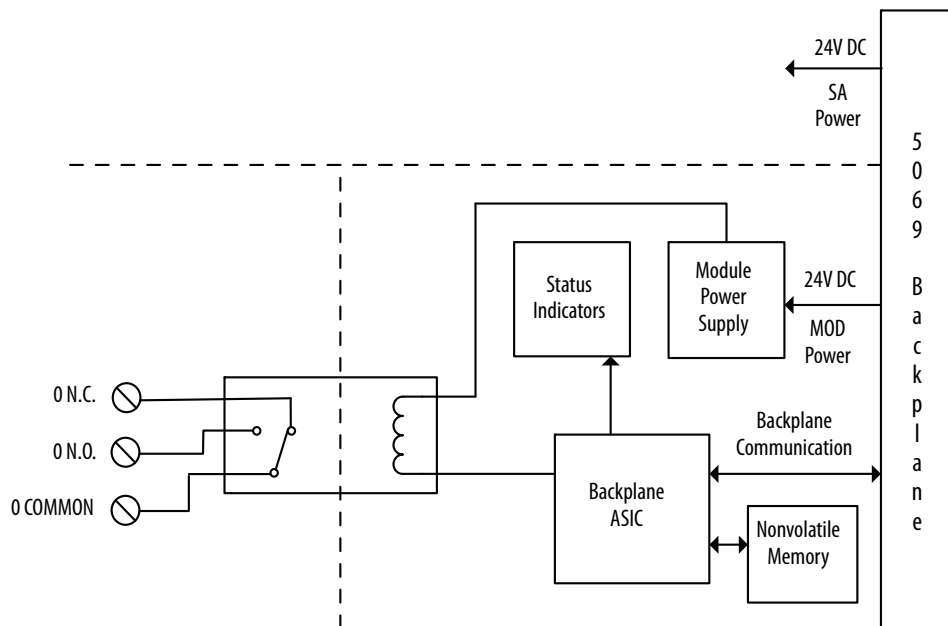
5069-OX4I Wiring Diagram

IMPORTANT: The 5069-OX4I module does not use SA power. That is, it does not draw current from the SA Power bus. The module passes it through to the next 5069 Compact I/O module in the system.



This figure shows a functional block diagram for the 5069-OX4I module.

5069-OX4I Functional Block Diagram



Technical Specifications - 5069-0X4I

Attribute	5069-0X4I
Contact current rating ⁽¹⁾	5...30V DC, 2 A resistive/channel 5...264V AC, 50/60 Hz, 2 A resistive/channel 5...250V AC, 50/60 Hz, 2 A general use/channel 5...125V AC, 50/60 Hz, 2 A ATEX/IECEX 8 A maximum per module
Off-state leakage	0 mA (dry contact, no onboard snubbers)
Output current rating	2 A per channel 8 A per module, max
Output delay time, max Off to On On to Off	15 ms 15 ms
Switching frequency	1 operation every 3 seconds (.3 Hz at rated load)
Initial contact resistance, max	30 mΩ
Bounce time, mean	500 μs
Output control in fault state per point	<ul style="list-style-type: none"> • Hold last state • On • Off (default)
Output states in program mode per point	<ul style="list-style-type: none"> • Hold last state • On • Off (default)
Output states in fault mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Duration of fault mode per point	<ul style="list-style-type: none"> • 1 s • 2 s • 5 s • 10 s • Forever (default)
Delay to fault	Supported
Fusing	Outputs are not fused.
Minimum load current	10 mA
Expected contact life	300K cycles resistive, 100K cycles inductive
Pilot duty rating	5...240V AC, 50/60 Hz, C300 pilot duty per channel 5...125V DC, R150 pilot duty per channel

(1) **Surge Suppression** - Connecting surge suppressors across your external inductive load extends the life of the module. For additional details, see the Industrial Automation Wiring and Grounding Guidelines, Allen-Bradley publication [1770-4.1](#).

General Specifications - 5069-0X4I

Attribute	5069-0X4I
Outputs	4 - Form C (SPDT)
Output voltage range	5...125V DC 5...264V AC
Module Power bus (MOD Power) voltage range	18...32V DC
Module Power bus (MOD Power) current, max	75 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator Power bus (SA Power) Passthrough voltage range	0...32V DC
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A
Power dissipation, max	2.6 W

General Specifications - 5069-0X4I

Attribute	5069-0X4I
Thermal dissipation, max	8.88 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type
Slot width	1
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: <ul style="list-style-type: none"> • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
RTB	One of the following RTB types. <ul style="list-style-type: none"> • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW)	0.4 N•m (3.5 lb•in)
RTB keying	None
Wire category ⁽³⁾	1 - relay ports 2 - power ports 1 wire per terminal for each signal port
Wire size	5069-RTB18-SPRING removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation Use minimum 18 AWG, 105 °C (221 °F) rated wire for load connections to relay output modules. 5069-RTB18-SCREW removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation Use minimum 18 AWG, 105 °C (221 °F) rated wire for load connections to relay output modules.
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)
Weight, approx	175 g (0.39 lb)
Enclosure type	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-0X4I

Attribute	5069-0X4I
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, storage IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat):	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz

Environmental Specifications - 5069-0X4I

Attribute	5069-0X4I
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80 . . . 2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000 . . . 2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±4 kV @ 5 kHz on relay ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±1 kV line-line (DM) and ±2 kV line-earth (CM) on relay ports
Conducted RF immunity IEC 61000-4-6	10Vrms with 1 kHz sine-wave 80% AM from 150 kHz . . . 80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

Certifications - 5069-0X4I

Certification ⁽¹⁾	5069-0X4I
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA nC IIC T4 Gc • DEMKO 15 ATEX 1484X When used at or below 125V DC or 30V DC
IECEX	IECEX System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA nC IIC T4 Gc • IECEX UL 15.0055X When used at or below 125V DC or 30V DC
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Analog I/O Modules

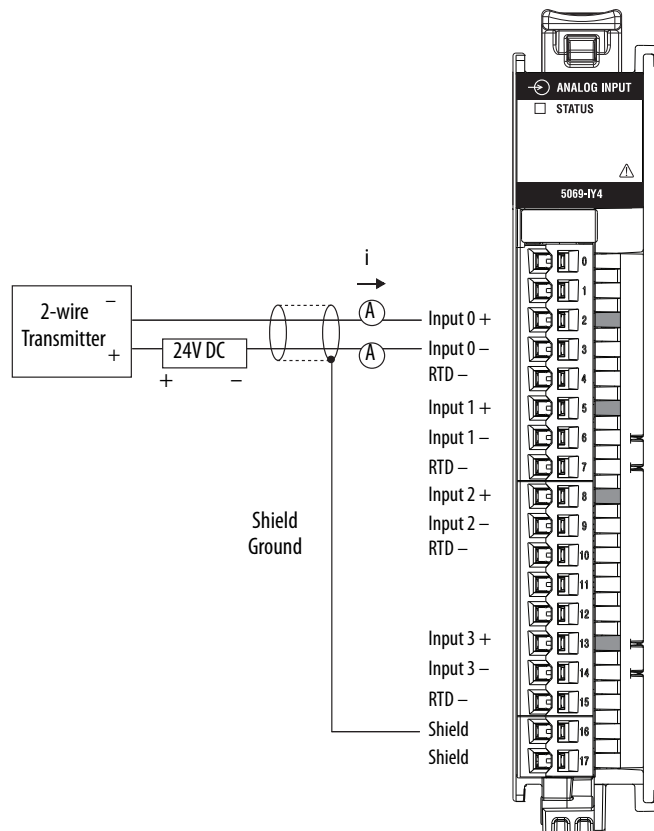
I/O Type	Cat. No.	Page
Analog input	5069-IY4	45
	5069-IF8	55
Analog output	5069-OF4 5069-OF8	61

5069-IY4 Analog Input Module

This figure shows a wiring diagram for the 5069-IY4 module when used in current mode.

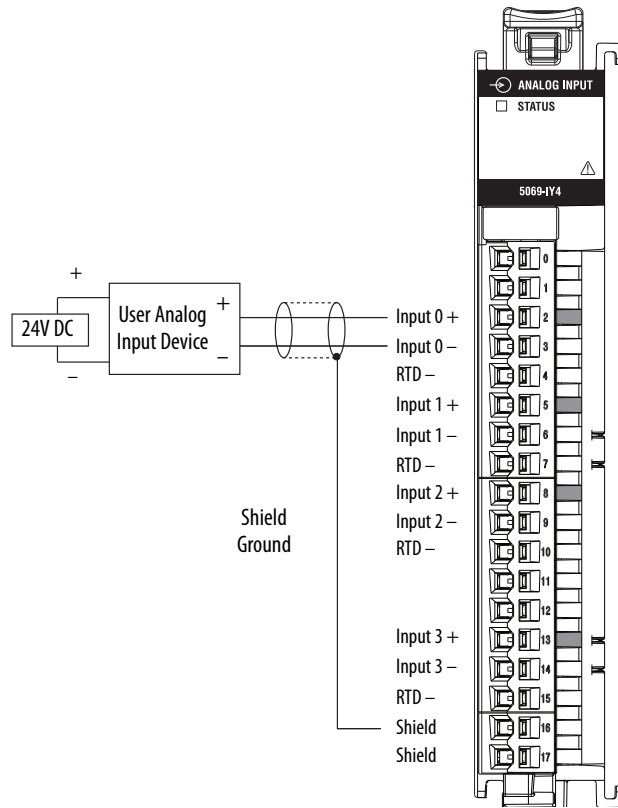
5069-IY4 Wiring Diagram - Current Mode

Place additional loop devices, for example, strip chart recorders, at either A location in the current loop.



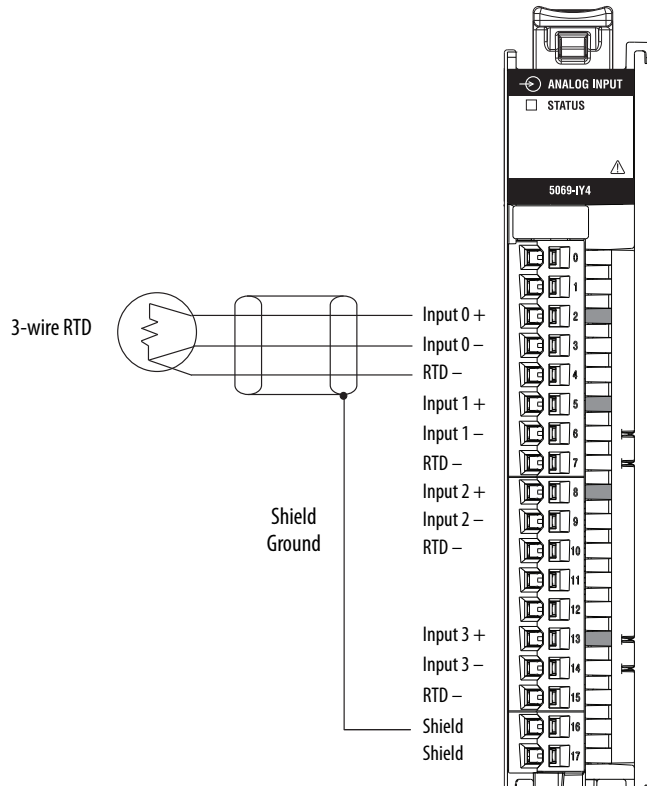
This figure shows a wiring diagram for the 5069-IY4 module when used in voltage mode.

5069-IY4 Wiring Diagram - Voltage Mode



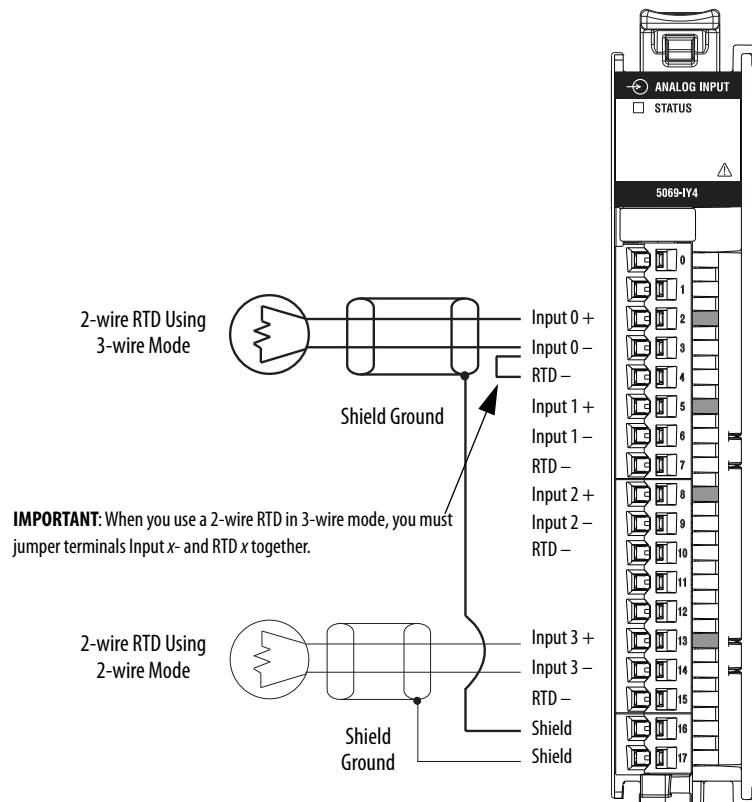
This figure shows a wiring diagram for the 5069-IY4 module when used in 3-wire RTD mode.

5069-IY4 Wiring Diagram - 3-wire RTD



This figure shows a wiring diagram for the 5069-IY4 module when used in 2-wire RTD mode.

5069-IY4 Wiring Diagram - 2-wire RTD

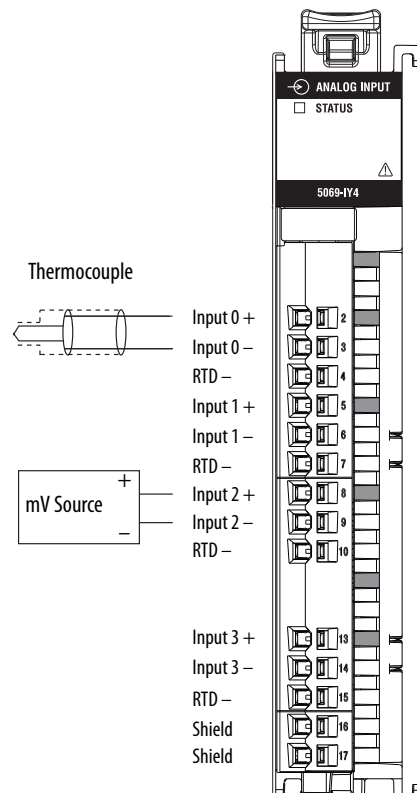


This figure shows a wiring diagram for the 5069-IY4 module when used in thermocouple mode.

5069-IY4 Wiring Diagram - Thermocouple Input

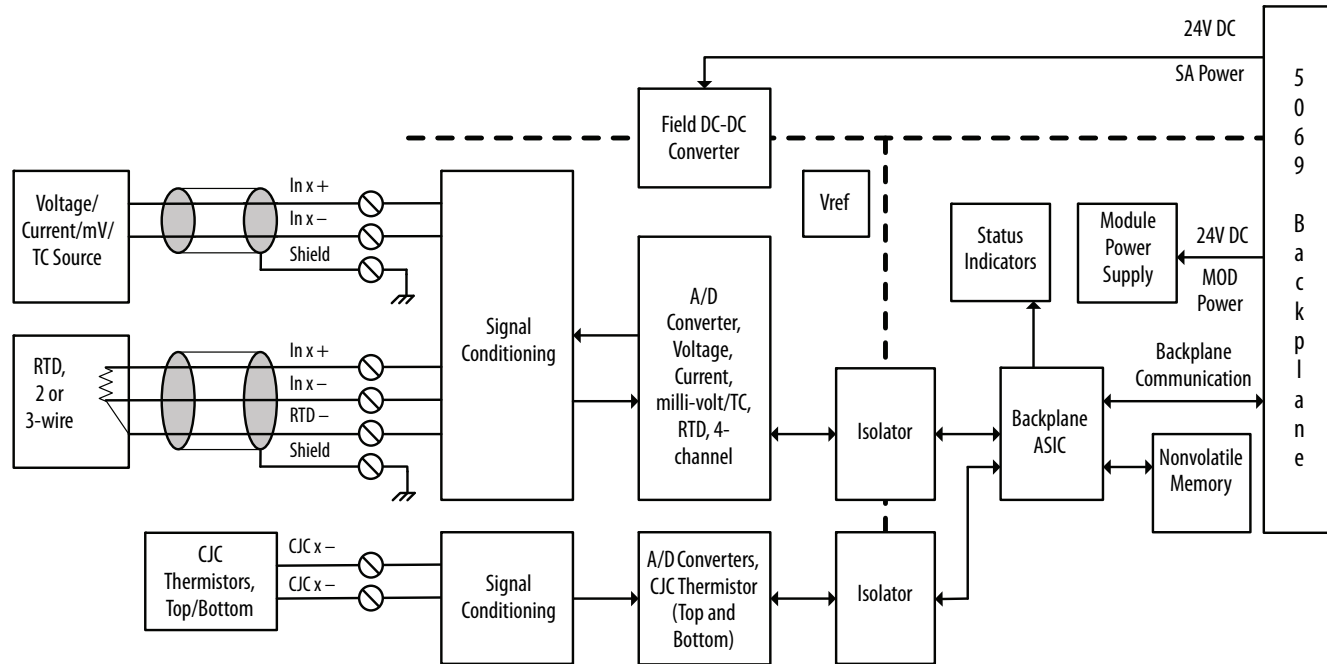
IMPORTANT: When you use the 5069-IY4 analog input module in Thermocouple mode, you must use one of the following JJC type RTBs:

- 5069-RTB14JC-SPRING (shown)
- 5069-RTB14JC-SCREW



This figure shows a functional block diagram for the 5069-IY4 module.

5069-IY4 Functional Block Diagram



Technical Specifications - 5069-IY4

Attribute	5069-IY4
Inputs	4 differential
Input range, voltage	±10V 0...10V 0...5V
Input range, current	0...20 mA 4...20 mA
Input range, RTD	1...500 Ω 2...1000 Ω 4...2000 Ω 8...4000 Ω
Input type, RTD	100, 200, 500, 1000 Ω platinum, alpha=385 100, 200, 500, 1000 Ω platinum, alpha=3916 120 Ω nickel, alpha=672 100, 120, 200, 500 Ω nickel, alpha=618 10 Ω copper 427
Input range, thermocouple / millivolt	± 100 mV
Input type, thermocouple	B, C, D, E, J, K, L (TXK/XK), N, R, S, T
Input impedance	Voltage: >1 MΩ Current: 90 Ω typical, 70...110 Ω range RTD: >1 MΩ Thermocouple/millivolt: >1 MΩ
Common mode voltage (channel to channel)	±10V

Technical Specifications - 5069-IY4

Attribute	5069-IY4
Module conversion method	Sigma-Delta, One 24-bit multiplexed ADC
Resolution, voltage ⁽¹⁾ (16 bits at 10 Hz notch filter)	±10.5V: <320 µV/count (15 bits plus sign bipolar) 0...10.5V: <160 µV/count (16 bits unipolar) 0...5.25V: <80 µV/count (16 bits unipolar)
Resolution, current ⁽¹⁾ (16 bits at 10 Hz notch filter)	0...21 mA: <0.32 µA/count (16 bits) 3.6...21 mA: <0.27 µA/count (16 bits)
Resolution, RTD ⁽¹⁾ (16 bits at 10 Hz notch filter) 3 Wire mode	< 7.9 mΩ/cnt in 1...500 Ω mode < 15.8 mΩ/cnt in 2...1000 Ω mode < 31.7 mΩ/cnt in 4...2000 Ω mode < 63.4 mΩ/cnt in 8...4000 Ω mode
Resolution, thermocouple / millivolt ⁽¹⁾ (16 bits at 10 Hz notch filter)	< 3.1 µV/cnt in ±100 mV mode
RTD excitation current	600 µA, 3 wire mode 100 µA, 2 wire mode
Wire impedance (3-wire RTD mode only)	25 Ω maximum for specified accuracy
RTD sensor types/temperature range: (Each sensor type in a cell supports all temperature ranges in the corresponding column to the right.)	
100, 200, 500, 1000 Ohm PT 385	-200...+870 °C -328...+1598 °F 73...1143 °K 132...2058 °R
100, 200, 500, 1000 Ohm PT 3916	-200...+630 °C -328...+1166 °F 73...903 °K 132...1626 °R
10 Ohm CU 247	-200...+260 °C -328...+500 °F 73...533 °K 132...960 °R
120 Ohm NI 672	-80...+320 °C -112...+608 °F 193...593 °K 348...1068 °R
100, 120, 200, 500 Ohm NI 618	-60...+250 °C -76...+482 °F 213...523 °K 384...942 °R

Technical Specifications - 5069-IY4

Attribute	5069-IY4
Thermocouple type/temperature range:	
Thermocouple Type B	21...1820 °C 68...3308 °F 293...2093 °K 528...3768 °R
Thermocouple Type C	0...2320 °C 32...4208 °F 273...2593 °K 492...4668 °R
Thermocouple Type D	0...2320 °C 32...4208 °F 273...2593 °K 492...4668 °R
Thermocouple Type E	-270...+1000 °C -454...+1832 °F 3...1273 °K 6...2292 °R
Thermocouple Type J	-210...+1200 °C -346...+2192 °F 63...1473 °K 114...2652 °R
Thermocouple Type K	-270...+1372 °C -454...+2502 °F 3...1645 °K 6...2961 °R
Thermocouple Type N	-270...+1300 °C -454...+2372 °F 3...1573 °K 6...2832 °R
Thermocouple Type R	-50...+1768 °C -58...+3215 °F 223...2041 °K 402...3674 °R
Thermocouple Type S	-50...+1768 °C -58...+3215 °F 223...2041 °K 402...3674 °R
Thermocouple Type T	-270...+400 °C -454...+752 °F 3...673 °K 6...1212 °R
Thermocouple Type TXK/XK (L)	-200...+800 °C -328...+1472 °F 73...1073 °K 132...1932 °R
Thermocouple linearization	ITS-90

Technical Specifications - 5069-IY4

Attribute	5069-IY4
CJC inputs (for thermocouple mode use only)	Two CJC sensors 2 thermistors embedded in 5069-RTB14CJC-(SCREW or SPRING) RTB -or- 2 thermistors wired to 5069-RTB18-(SCREW or SPRING) RTB Thermistor type: Measurement Specialties, Inc. 10K3A1A
Local CJC sensor accuracy	± 0.3 °C
Remote CJC sensor accuracy (Based on specified thermistor)	± 0.3 °C
Calibrated accuracy at 25 °C	Voltage 0.100% full scale Current 0.100% full scale RTD 0.100% full scale Thermocouple/millivolt 0.100% full scale
Accuracy drift with temperature	Voltage 0.200% full scale Current 0.300% full scale RTD 0.200% full scale Thermocouple/millivolt 0.200% full scale
Input Total Unadjusted Error (TUE) ⁽²⁾ (Over full temperature range)	Voltage 0.300% Full Scale Current 0.400% Full Scale RTD 0.300% Full Scale Thermocouple/millivolt 0.300% Full Scale
Scan time Per channel Per group (channel group 0 . . . 3)	625 µs 2.5 ms
Notch filter at minimum RPI (0.2 ms, 1 channel enabled)	62.5 kHz
Minimum notch filter frequency at RPI of 2.5 ms	10 kHz
Step response time to 63% of value (Notch filter 10 kHz)	7.5 ms
Input notch filter (Hz) selections	5, 10 (50/60 default), 20, 50, 60, 100, 200, 500, 1000, 2500, 5000, 10000, 15625, 25000, 31250, 62500.
Input anti-aliasing filter cutoff frequency, typical	500 Hz
Input digital filter	1st Order Lag, 0 ms (Default) - 10,000 ms (10 s)
HART handheld compliance:	Add an external 250 Ω resistor into the current loop for HART transmitter compliance.
Overvoltage protection, max	Voltage, current, RTD, and thermocouple/mV modes: ± 32V DC
Overcurrent protection, max	Current mode: ± 30 mA
Data value during overload condition	Full scale, overrange flag, Data uncertain / data bad
Open circuit detection time, nom	Voltage: + full scale, < 2 s Current: 4 . . . 20 mA range, < 2 s RTD: < 2 s Thermocouple / millivolt: + full scale, < 10 s
Onboard data alarming	Yes
Scaling to engineering units	Yes
Real-time channel sampling	Yes
Data format	IEEE 32-bit floating point

(1) Notch filter dependent.

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

General Specifications - 5069-IY4

Attribute	5069-IY4
Module Power bus (MOD Power) voltage range	18...32V DC
Module Power bus (MOD Power) current, max	75 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator (SA) Field Power voltage range	18...32V DC
Sensor Actuator (SA) Field Power current, max	100 mA
Sensor Actuator Power bus (SA Power) Passthrough voltage range	0...32V DC
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A
Power dissipation, max	Voltage mode: 1.8 W Current mode: 2.1 W RTD mode: 2.1 W Thermocouple / millivolt mode: 1.8 W
Thermal dissipation, max	Voltage mode: 6.1 BTU/hr Current mode: 7.2 BTU/hr RTD mode: 7.2 BTU/hr Thermocouple/millivolt: 6.1 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type 50V Functional Isolation between SA Power and input ports No isolation between individual input ports
Calibration methods	Factory calibrated User-performed (optional)
Module keying	Electronic, software configurable
Indicators	1 green/red module status indicator 4 yellow/red I/O status indicators 2 yellow/red CJC status indicators
Slot width	1
Common mode noise rejection ratio	130 dB @ 50/60 Hz
Normal mode noise rejection ratio	65 dB @ 50/60 Hz, notch filter dependent
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
RTB	One of the following RTB types. • 5069-RTB18-SCREW • 5069-RTB18-SPRING • 5069-RTB14CJC-SCREW (Thermocouple mode) • 5069-RTB14CJC-SPRING (Thermocouple mode) IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW, 5069-RTB14CJC-SCREW)	0.4 N•m (3.5 lb•in)
RTB keying	None

General Specifications - 5069-IY4

Attribute	5069-IY4
Wire category ⁽³⁾	2 - shielded input ports 2 - power ports 1 wire per terminal for each signal port
Wire size	5069-RTB18-SPRING and 5069-RTB14CJC-SPRING connections: 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only. 5069-RTB18-SCREW and 5069-RTB14CJC-SCREW connections: 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only.
Insulation stripping length	5069-RTB18-SPRING, 5069-RTB14CJC-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW, 5069-RTB14CJC-SCREW connections: 12 mm (0.47 in.)
Enclosure type	None (open-style)
Weight, approx	175 g (0.39 lb)
North American temperature code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-IY4

Attribute	5069-IY4
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges

Environmental Specifications - 5069-IY4

Attribute	5069-IY4
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±3 kV @ 5 kHz on shielded input ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on shielded input ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

Certifications - 5069-IY4

Certification ⁽¹⁾	5069-IY4
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-0; General Requirements EN 60079-15; Potentially Explosive Atmospheres, Protection "n" II 3 G Ex nA IIC T4 Gc DEMKO 15 ATEX 1484X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> IEC 60079-0; General Requirements IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" II 3 G Ex nA IIC T4 Gc IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

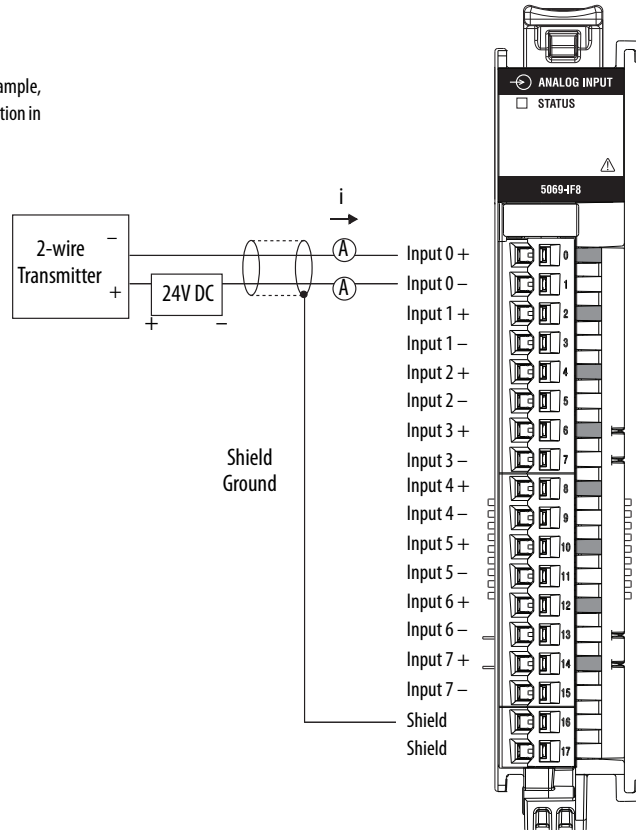
(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-IF8 Analog 8-channel Current/Voltage Input Module

This figure shows a wiring diagram for the 5069-IF8 module when used in current mode.

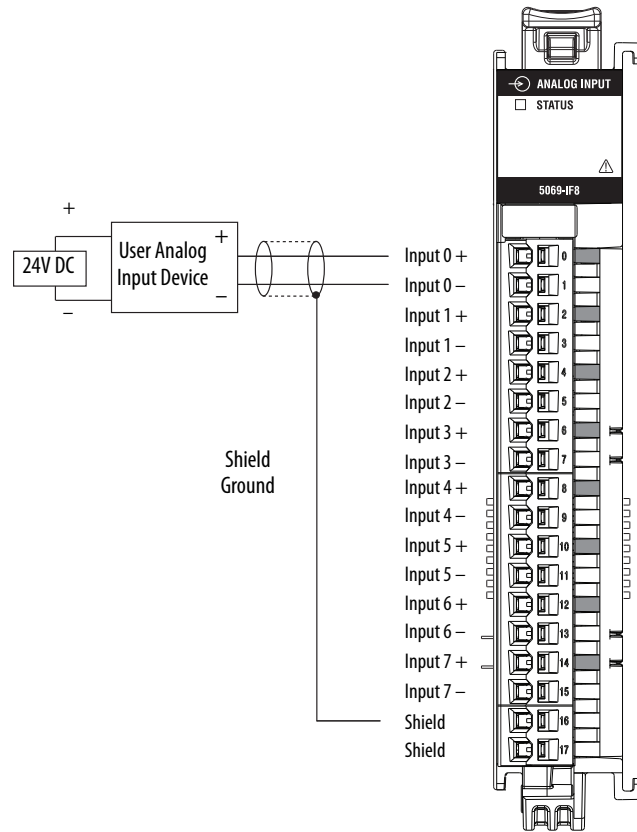
5069-IF8 Wiring Diagram - Current Mode

Place additional loop devices, for example, strip chart recorders, at either **A** location in the current loop.



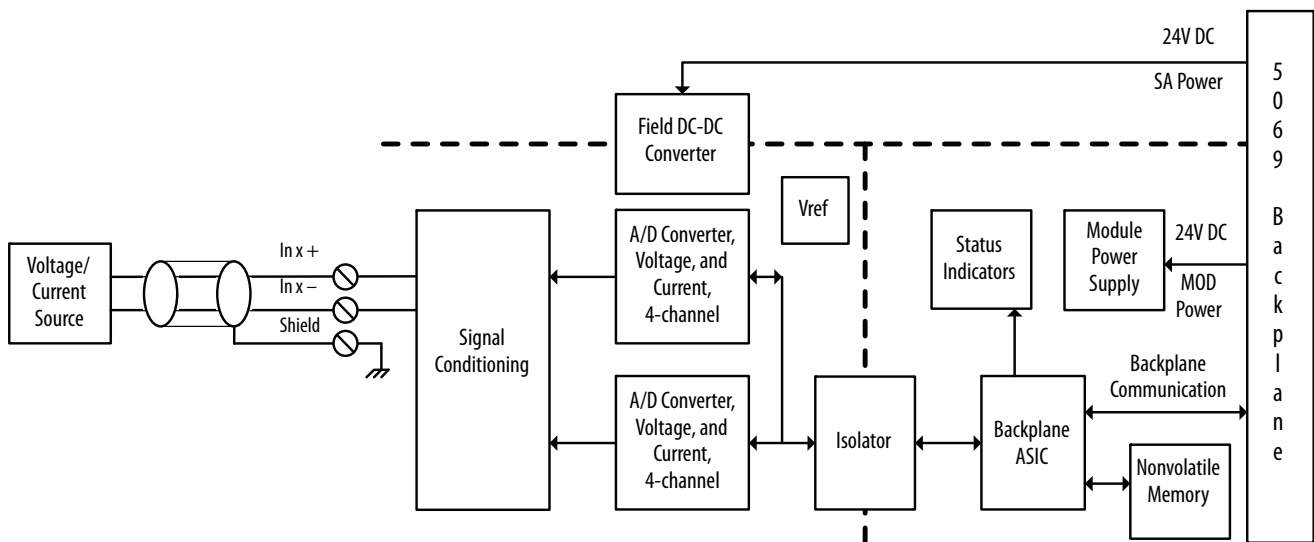
This figure shows a wiring diagram for the 5069-IF8 module when used in voltage mode.

5069-IF8 Wiring Diagram - Voltage Mode



This figure shows a functional block diagram for the 5069-IF8 module.

5069-IF8 Functional Block Diagram



Technical Specifications - 5069-IF8

Attribute	5069-IF8
Inputs	8 differential
Input range, voltage	$\pm 10V$ 0...10V 0...5V
Input range, current	0...20 mA 4...20 mA
Input impedance	Voltage: >1 M Ω Current: 90 Ω typical, 70...110 Ω range
Common mode voltage (channel to channel)	$\pm 10V$
Module conversion method	Sigma-Delta, Two 24-bit multiplexed ADC
Resolution, voltage ⁽¹⁾ (16 bits at 10 Hz notch filter)	$\pm 10.5V$: <320 μV /count (15 bits plus sign bipolar) 0...10.5V: <160 μV /count (16 bits unipolar) 0...5.25V: <80 μV /count (16 bits unipolar)
Resolution, current ⁽¹⁾ (16 bits at 10 Hz notch filter)	0...21 mA: <0.32 μA /count (16 bits) 3.6...21 mA: <0.27 μA /count (16 bits)
Calibrated accuracy at 25 °C	Voltage 0.100% full scale Current 0.100% full scale
Accuracy drift with temperature	Voltage 0.200% full scale Current 0.300% full scale
Input Total Unadjusted Error (TUE) ⁽²⁾ (Over full temperature range)	Voltage 0.300% Full Scale Current 0.400% Full Scale
Scan Time Per channel Per group (channel group 0...3 or channel group 4...7)	625 μs 2.5 ms
Notch filter at minimum RPI (0.2 ms, 1 channel enabled)	62.5 kHz
Minimum notch filter frequency at RPI of 2.5 ms	10 kHz
Step response time to 63% of value (Notch filter 10 kHz)	7.5 ms
Input notch filter (Hz) selections	5, 10 (50/60 Default), 20, 50, 60, 100, 200, 500, 1000, 2500, 5000, 10000, 15625, 25000, 31250, 62500.
Input anti-aliasing filter cutoff frequency, nom	500 Hz
Input digital filter	1st order lag, 0 ms (Default) - 10,000 ms (10 s)
HART handheld compliance	Add an external 250 Ω resistor into the current loop for HART transmitter compliance.
Overvoltage protection, max	Voltage and Current modes: $\pm 32V$ DC
Overcurrent protection, max	Current mode: ± 30 mA
Data value during overload condition	Full scale, overrange flag, Data uncertain / data bad

Technical Specifications - 5069-IF8

Attribute	5069-IF8
Open circuit detection time	Voltage: + full scale, < 2 s Current: 4...20 mA range, <2 s
Onboard data alarming	Yes
Scaling to engineering units	Yes
Real-time channel sampling	Yes
Data format	IEEE 32-bit floating point

(1) Notch filter dependent.

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

General Specifications - 5069-IF8

Attribute	5069-IF8
Module Power bus (MOD Power) voltage range	18...32V DC
Module Power bus (MOD Power) current, max	75 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator (SA) Field Power voltage range	18...32V DC
Sensor Actuator (SA) Field Power current, max	100 mA
Sensor Actuator Power bus (SA Power) Passthrough voltage range	0...32V DC
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A
Power dissipation, max	Voltage mode: 2.1 W Current mode: 2.4 W
Thermal dissipation, max	Voltage mode: 7.2 BTU/hr Current mode: 8.2 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type 50V Functional Isolation between SA power and input ports No isolation between individual Input ports
Calibration methods	Factory calibrated User-performed (optional)
Module keying	Electronic, software configurable
Indicators	1 green/red module status indicator 8 yellow/red I/O status indicator
Slot width	1
Common mode noise rejection ratio	130 dB @ 50/60 Hz
Normal mode noise rejection ratio	65 dB @ 50/60 Hz, notch filter dependent
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)

General Specifications - 5069-IF8

Attribute	5069-IF8
RTB	One of the following RTB types. <ul style="list-style-type: none"> • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB18-SCREW)	0.4 N•m (3.5 lb•in)
RTB keying	None
Wire category ⁽³⁾	2 - shielded input ports 2 - power ports 1 wire per terminal for each signal port
Wire size	5069-RTB18-SPRING removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation 5069-RTB18-SCREW removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)
Weight, approx	175 g (0.39 lb)
Enclosure type	None (open-style)
North American temperature code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-IF8

Attribute	5069-IF8
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4

Environmental Specifications - 5069-IF8

Attribute	5069-IF8
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 880% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±3 kV @ 5 kHz on shielded input ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on shielded input ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

Certifications - 5069-IF8

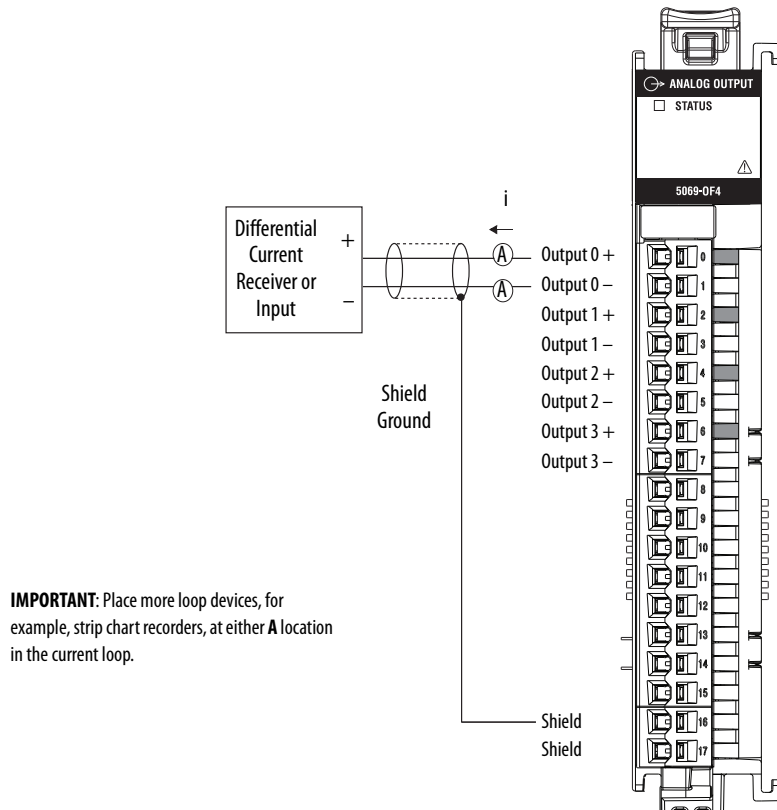
Certification ⁽¹⁾	5069-IF8
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IICT4 Gc • DEMKO 15 ATEX 1484X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IICT4 Gc • IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-OF4 and 5069-OF8 Analog Current/Voltage Output Modules

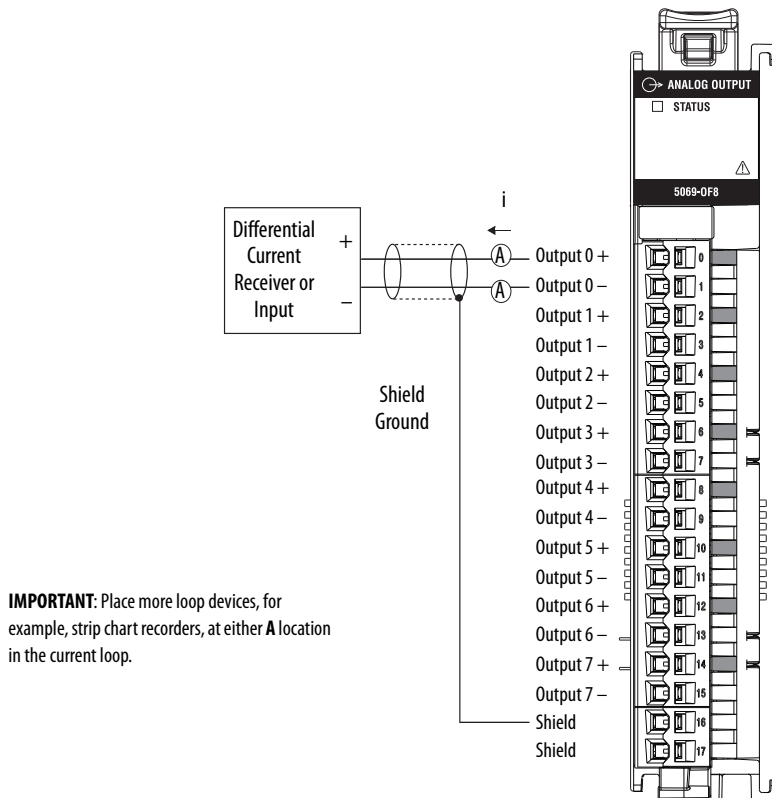
This figure shows a wiring diagram for the 5069-OF4 module when used in current mode.

5069-OF4 Wiring Diagram - Current Mode



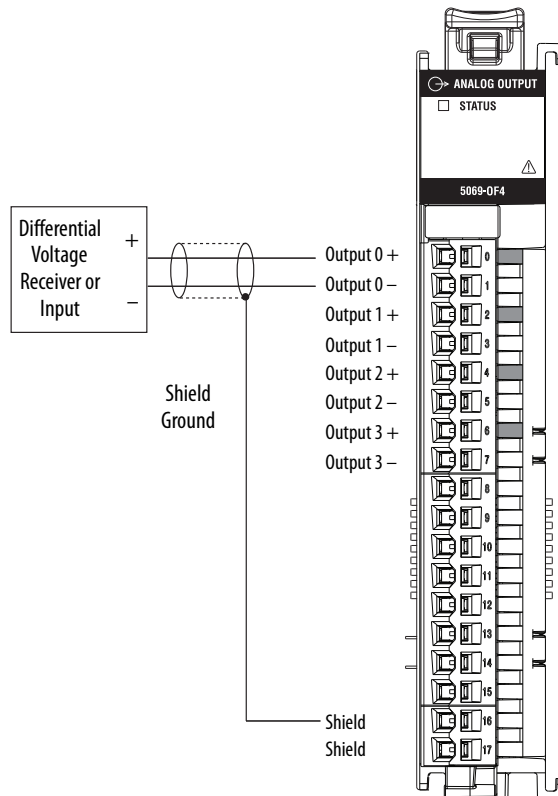
This figure shows a wiring diagram for the 5069-OF8 module when used in current mode.

5069-OF8 Wiring Diagram - Current Mode



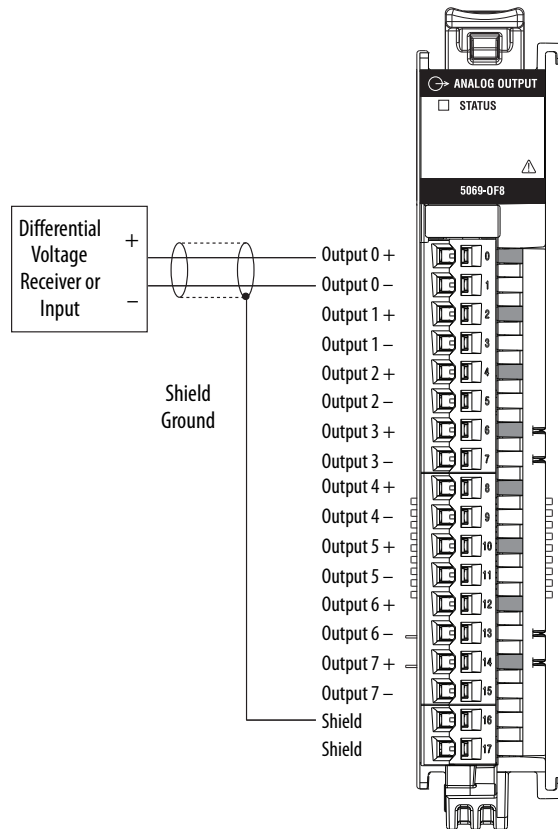
This figure shows a wiring diagram for the 5069-OF4 module when used in voltage mode.

5069-OF4 Wiring Diagram - Voltage Mode



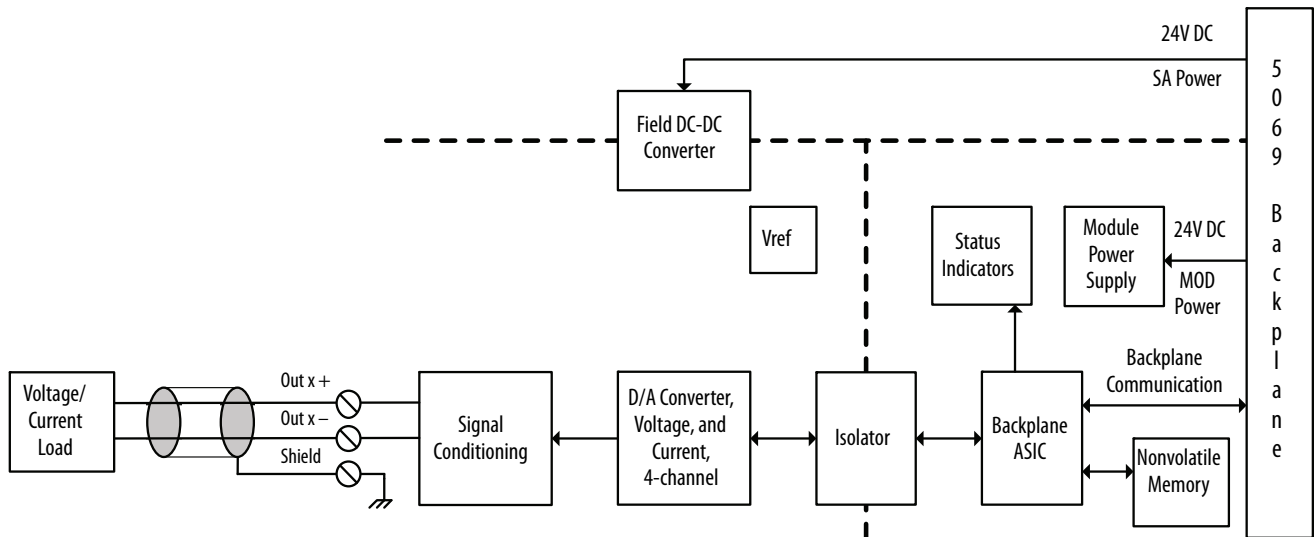
This figure shows a wiring diagram for the 5069-OF8 module when used in voltage mode.

5069-OF8 Wiring Diagram - Voltage Mode



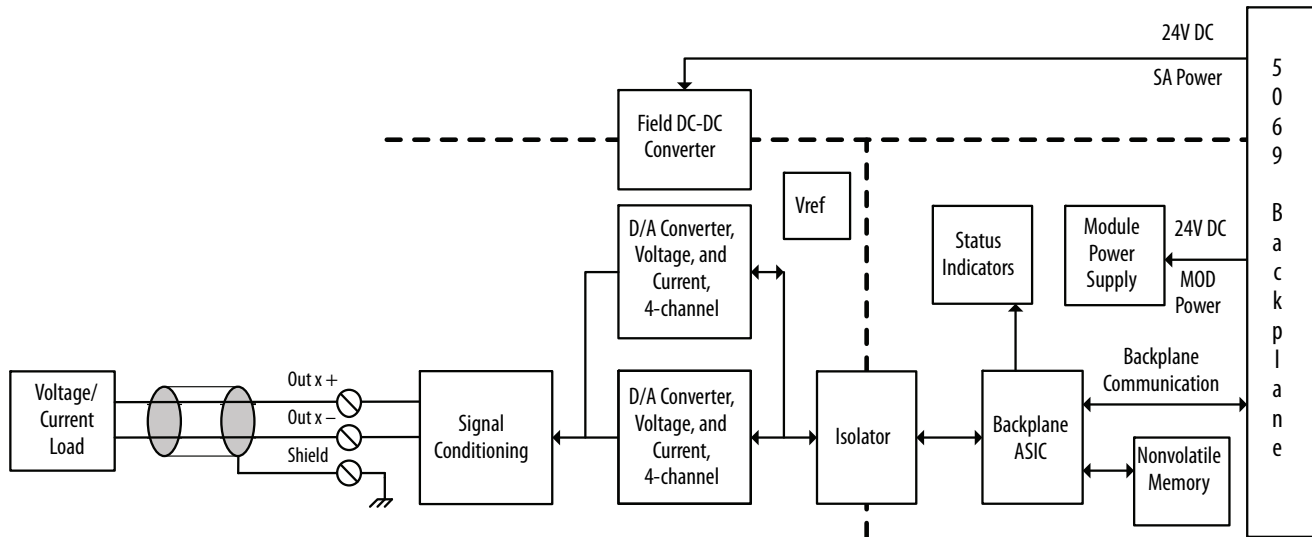
This figure shows a functional block diagram for the 5069-OF4 module.

5069-OF4 Functional Block Diagram



This figure shows a functional block diagram for the 5069-OF8 module.

5069-OF8 Functional Block Diagram



Technical Specifications - 5069-OF4, 5069-OF8

Attribute	5069-OF4	5069-OF8
Outputs	4 voltage or current	8 voltage or current
Output range, voltage	± 10V 0...10V 0...5V	
Output range, current	0...20 mA 4...20 mA	
Resolution	16 bits across ± 10.5V - 320 µV/bit 16 bits across 10.5V - 160 µV/bit 16 bits across 5.25V - 80 µV/bit 16 bits across 21 mA - 320 nA/bit	
Drive capability	Voltage - 1000 Ω min Current - 500 Ω max	
Capacitive load, max (voltage mode only)	1 µF	
Inductive load, max (current mode only)	1 mH	
Open circuit detection	Current mode only	
Short circuit detection	Voltage mode only – output electronically limited to 16 mA or less	
Data format	IEEE 32-bit floating point	
Module conversion method	R-Ladder DAC, monotonicity with no missing codes	
Conversion time per channel	25 µs	
Scan time Per group 0...3 (OF4/OF8) Per group 0...7 (OF8 only)	1.0 ms 2.0 ms	
Step response time to 63% of value	Voltage mode – 18 µs max Current mode – 1 ms max	
Overvoltage protection, max	32V DC	

Technical Specifications - 5069-OF4, 5069-OF8

Attribute	5069-OF4	5069-OF8
Repeatability	0.05%	
Calibrated accuracy at 25 °C (77 °F)	Voltage - 0.10% full scale Current - 0.10% full scale	
Accuracy drift with temperature	Voltage - 0.30% full scale Current - 0.50% full scale	

General Specifications - 5069-OF4, 5069-OF8

Attribute	5069-OF4	5069-OF8
Module Power bus (MOD Power) voltage range	18...32V DC	
Module Power bus (MOD Power) current, max	75 mA	
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC	
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A	
Sensor Actuator (SA) Field Power voltage range	18...32V DC	
Sensor Actuator (SA) Field Power current, max	150 mA	250 mA
Sensor Actuator Power bus (SA Power) Passthrough voltage range	18...32V DC	
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A	
Power dissipation, max	3.3 W	5.3 W
Thermal dissipation, max	11.3 BTU/hr	18.1 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type 50V Functional Isolation between SA power and output ports No isolation between individual output ports	
Calibration methods	Factory Calibrated User-performed (optional)	
Module keying	Electronic, software configurable	
Indicators	1 green/red module status indicator 4 yellow/red I/O status indicators	1 green/red module status indicator 8 yellow/red I/O status indicators
Slot width	1	
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)	
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)	
RTB	One of the following RTB types. • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.	
Terminal screw torque (5069-RTB18-SCREW)	0.4 N·m (3.5 lb·in)	
RTB keying	None	
Wire category ⁽³⁾	2 - shielded input ports 2 - power ports 1 wire per terminal for each signal port	

General Specifications - 5069-OF4, 5069-OF8

Attribute	5069-OF4	5069-OF8
Wire size	5069-RTB18-SPRING removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation	
	5069-RTB18-SCREW removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation	
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)	
Weight, approx	175 g (0.39 lb)	
Enclosure type	None (open-style)	
North American temp code	T4	
ATEX temp code	T4	
IECEx temp code	T4	

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-OF4, 5069-OF8

Attribute	5069-OF4, 5069-OF8
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...200 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±3 kV @ 5 kHz on shielded output ports

Environmental Specifications - 5069-OF4, 5069-OF8

Attribute	5069-OF4, 5069-OF8
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on shielded output ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz... 80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

Certifications - 5069-OF4, 5069-OF8

Certification ⁽¹⁾	5069-OF4, 5069-OF8
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1484X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0055X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

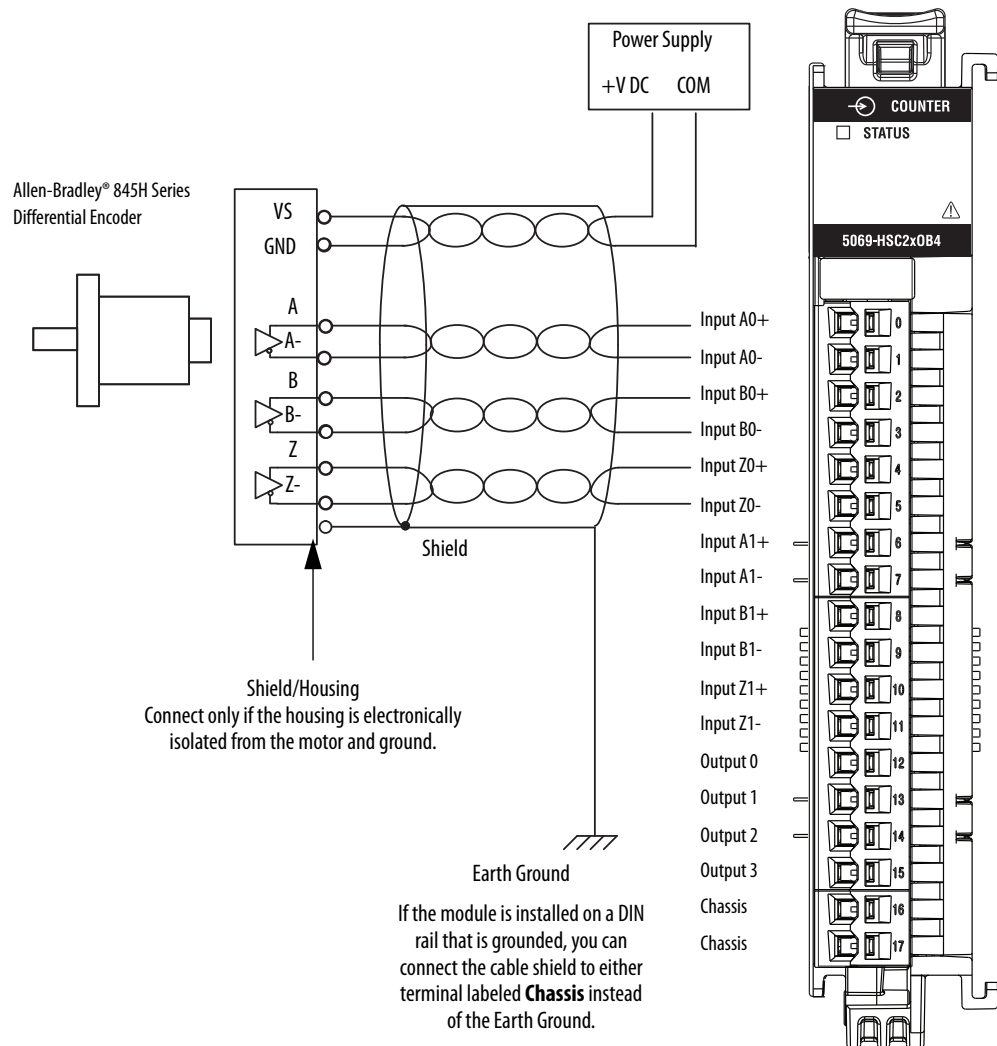
5069-HSC2xOB4 High-speed Counter Module

This figure shows a wiring diagram for the 5069-HSC2xOB4 module connected to a differential encoder.

5069-HSC2xOB4 Wiring Diagram - Differential Encoder

IMPORTANT: We recommend that you use twisted pair, individually shielded cable with a maximum length of 300 m (1000 ft) when connecting a differential encoder.

For more information on the cable type to use, see the encoder documentation.

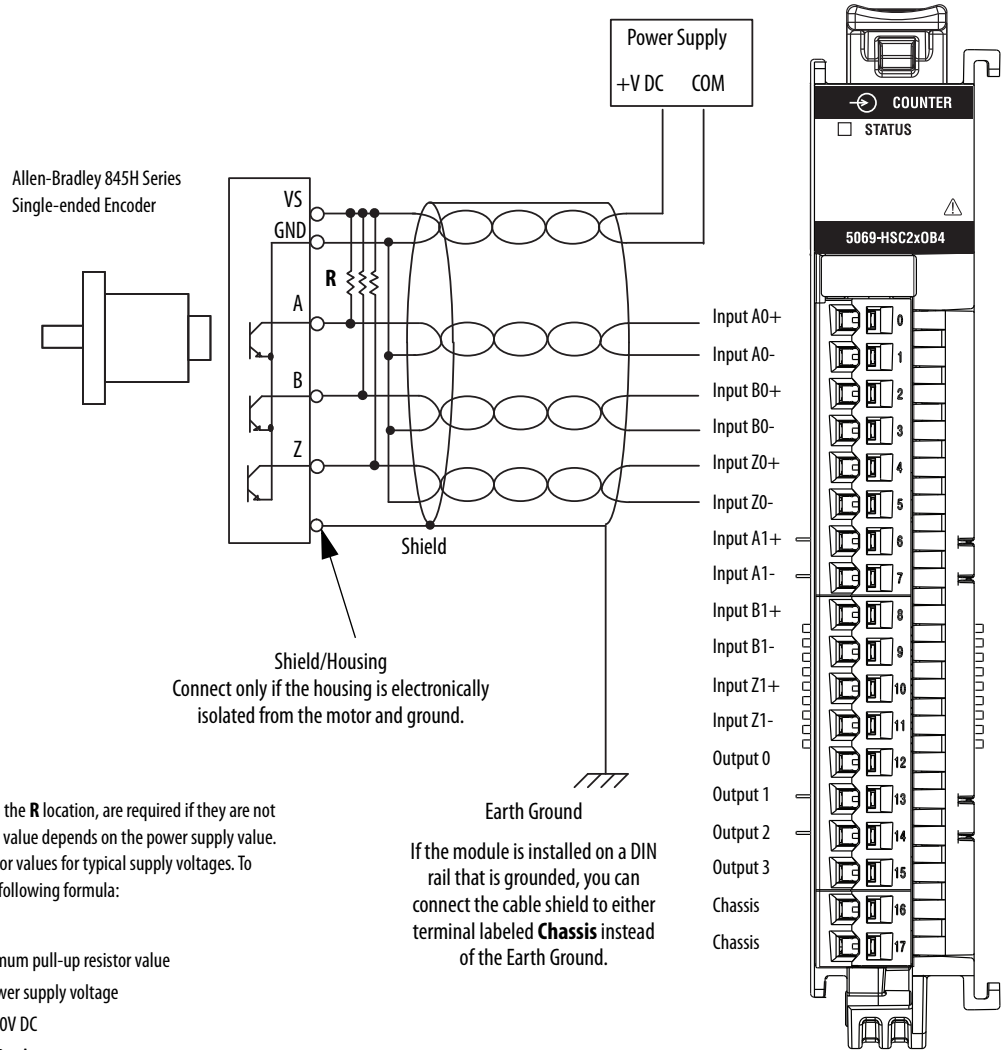


This figure shows a wiring diagram for the 5069-HSC2xOB4 module connected to a single-ended encoder.

5069-HSC2xOB4 Wiring Diagram - Single-ended Encoder

IMPORTANT: We recommend that you use twisted pair, individually shielded cable with a maximum length of 300 m (1000 ft) when connecting a single-ended encoder.

For more information on the cable type to use, see the encoder documentation.



IMPORTANT: External resistors, as indicated in the **R** location, are required if they are not internal to the encoder. The pull-up resistor (R) value depends on the power supply value. The following table shows the maximum resistor values for typical supply voltages. To calculate the maximum resistor value, use the following formula:

$$R = \frac{VDC - Vmin}{Imin}$$

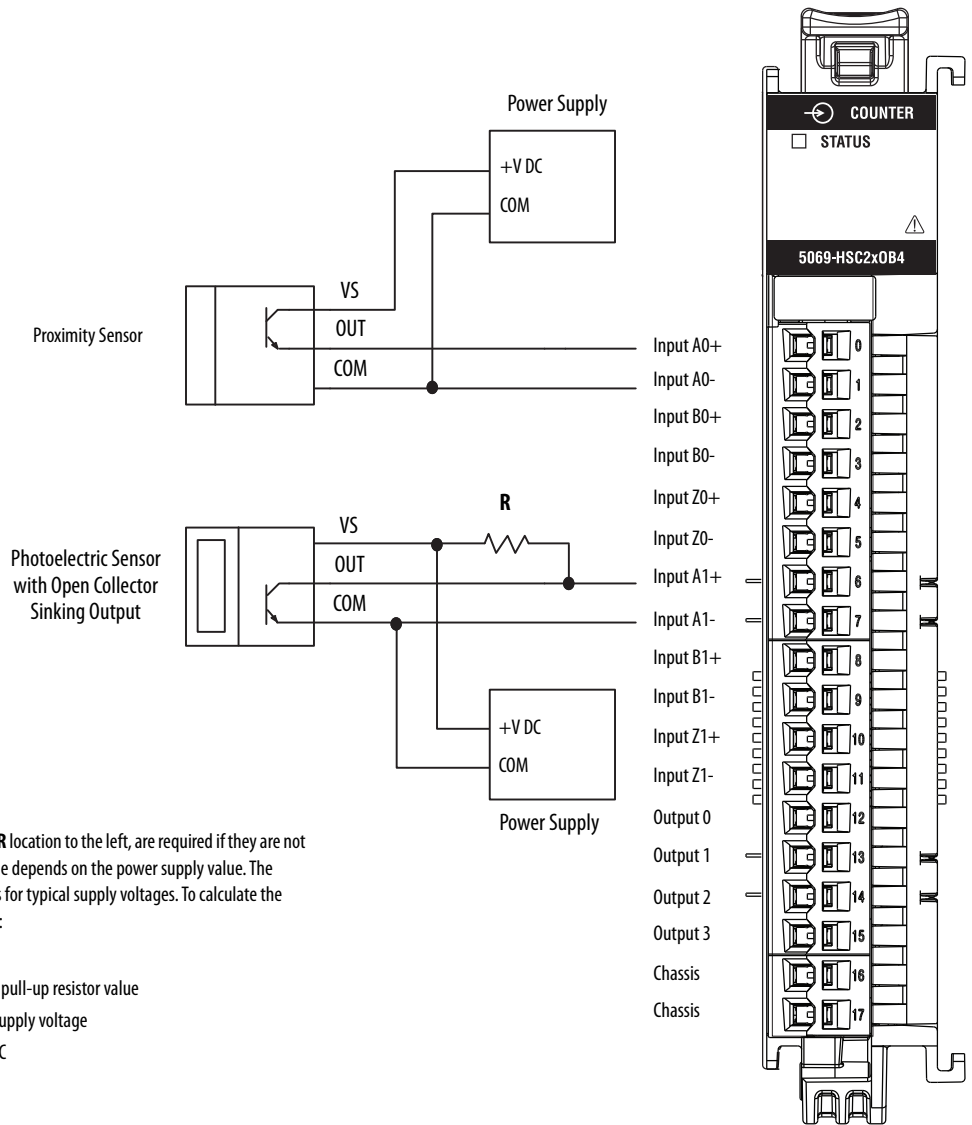
Where:
 R = Maximum pull-up resistor value
 VDC = Power supply voltage
 Vmin = 3.0V DC
 Imin = 3.0 mA

Power Supply Voltage (V DC)	Pull-up Resistor Value (R), Max ⁽¹⁾
5	667 Ω
12	3000 Ω
24	7000 Ω

(1) Resistance values can change, depending on your application. The minimum resistor (R) value depends on the current sinking capability of the encoder.

This figure shows a wiring diagram for the 5069-HSC2xOB4 module connected to a discrete input device.

5069-HSC2xOB4 Wiring Diagram - Discrete Input Devices



IMPORTANT: External resistors, as indicated in the **R** location to the left, are required if they are not internal to the encoder. The pull-up resistor (**R**) value depends on the power supply value. The following table shows the maximum resistor values for typical supply voltages. To calculate the maximum resistor value, use the following formula:

$$R = \frac{VDC - Vmin}{Imin}$$

Where:
 R = Maximum pull-up resistor value
 VDC = Power supply voltage
 Vmin = 3.0V DC
 Imin = 3.0 mA

Power Supply Voltage (V DC)	Pull-up Resistor Value (R), Max ⁽¹⁾
5	667 Ω
12	3000 Ω
24	7000 Ω

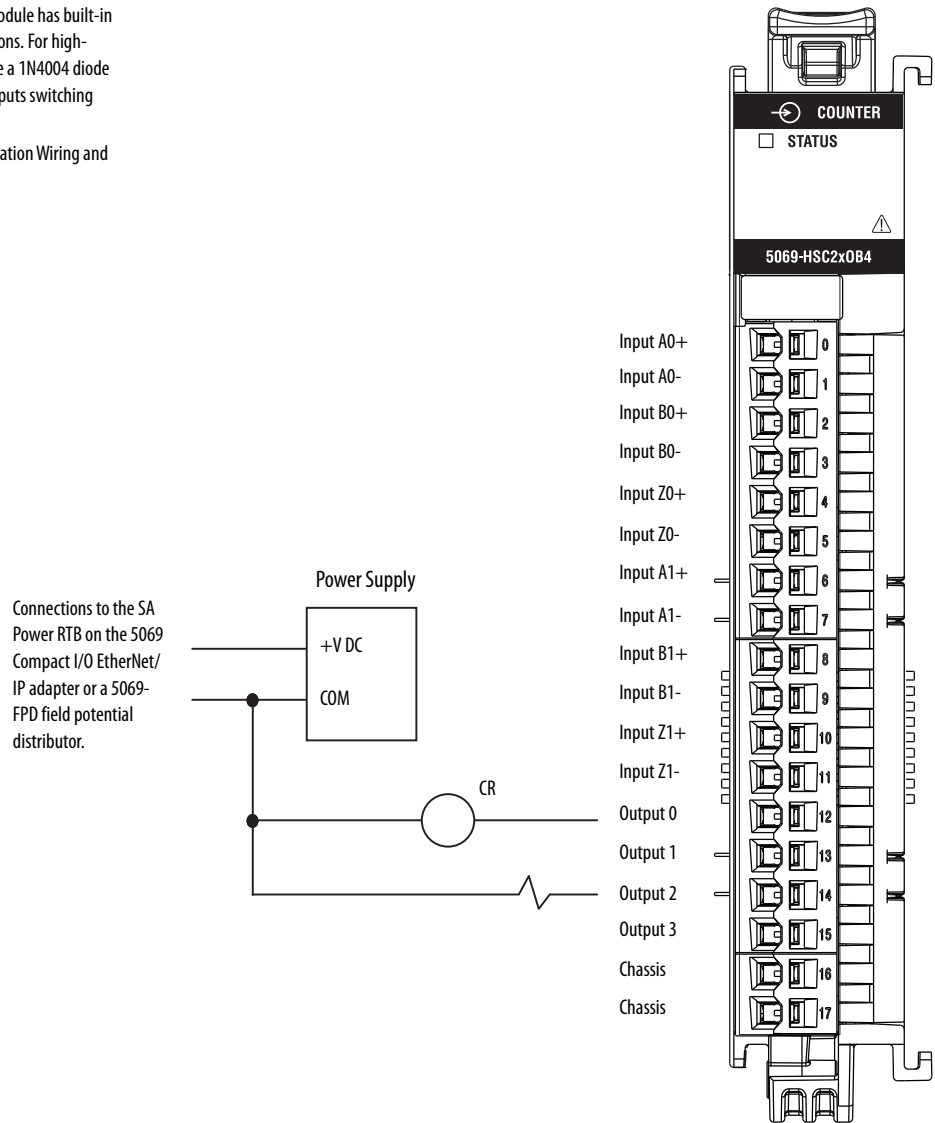
(1) Resistance values can change, depending on your application. The minimum resistor (R) value depends on the current sinking capability of the encoder.

This figure shows a wiring diagram for the 5069-HSC2xOB4 module connected to a discrete output device.

5069-HSC2xOB4 Wiring Diagram - Discrete Output Devices

Recommended Surge Suppression - The module has built-in suppression that is sufficient for most applications. For high-noise applications, we recommend that you use a 1N4004 diode reverse-wired across the load for transistor outputs switching 24V DC inductive loads.

For additional details, see the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

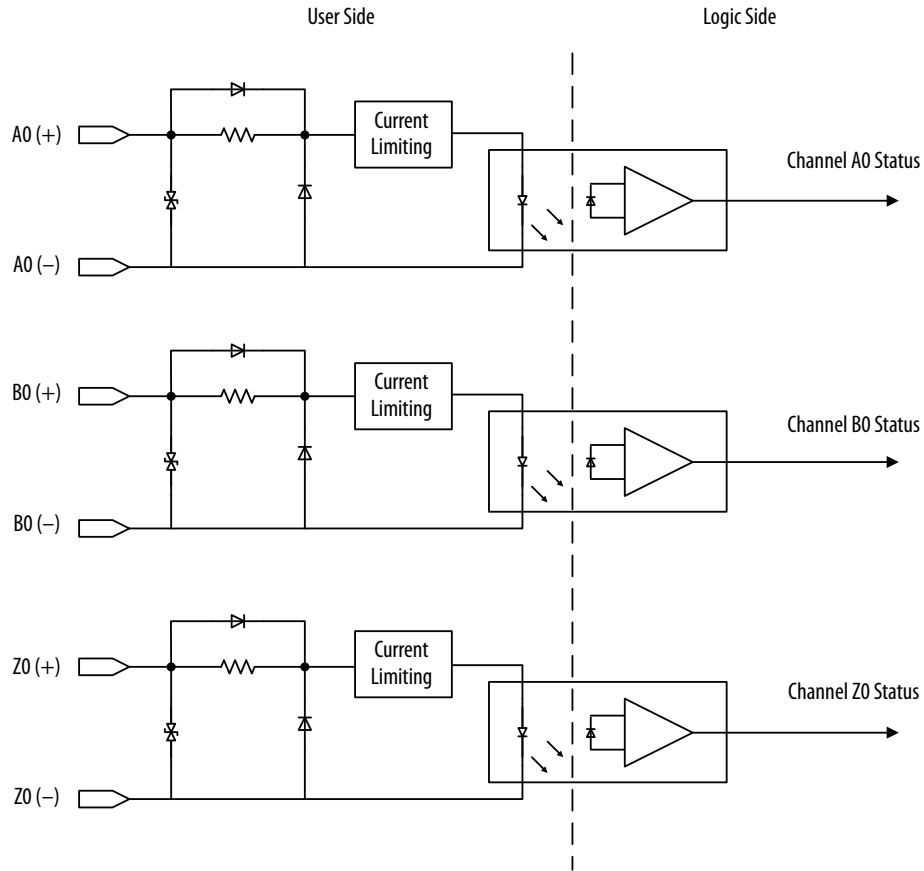


This figure shows functional block diagrams for the 5069-HSC2xOB4 module inputs and outputs.

5069-HSC2xOB4 Functional Block Diagram

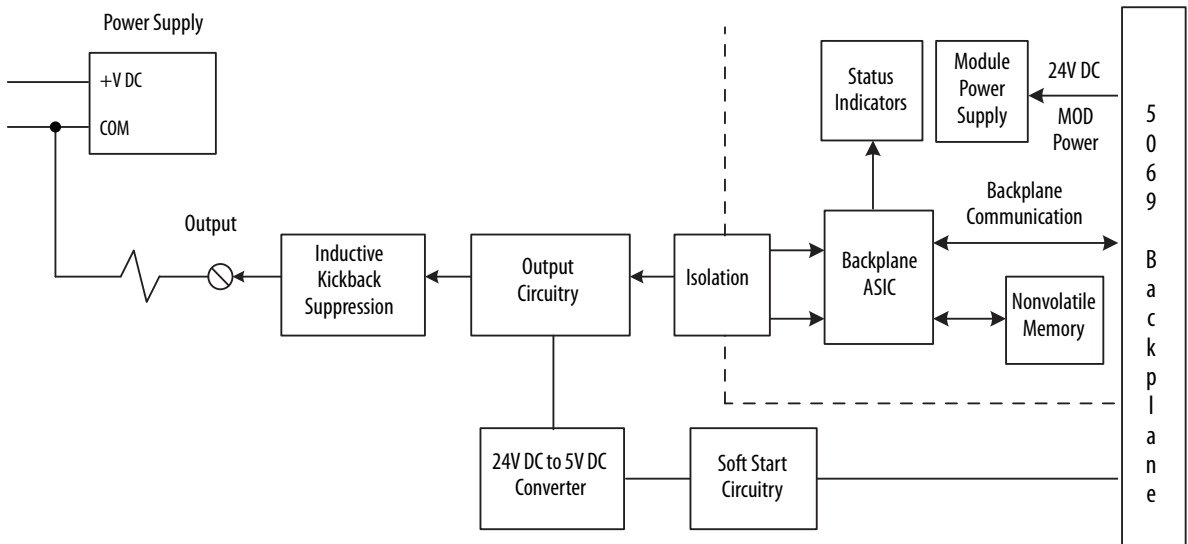
Module Inputs

IMPORTANT: This graphic shows the diagram for Counter 0. Counter 1 uses the same design.



Module Outputs

Connections to the SA Power RTB on the 5069 Compact I/O EtherNet/IP adapter or a 5069-FPD field potential distributor.



Technical Specifications - 5069-HSC2x0B4

Attribute	5069-HSC2x0B4
On-state voltage, min	3V DC
On-state voltage, nom	24V DC
On-state voltage, max	32V DC
On-state voltage drop, max	< 0.3V DC
On-state current, min	4 mA
Off-state voltage, max	1.5V
Off-state current, max	1 mA
Input current, max	8 mA
Output current rating	1 A per channel 3 A per module, max
Pulse width, min	125 ns
Pulse separation, min	100 ns
Open load detection diagnostics	Yes (per channel diagnostics)
Output short circuit/overload/overtemp detection	Yes (per channel diagnostics)
Output short circuit/overload protection	Yes
Reverse voltage protection	32V DC
Overvoltage protection, max	36V (fuse protected)
Pilot duty	Yes (Make current electronically limited/protected @ 3.6 A)
Increased output current capability	Outputs can be paralleled to increase current capability by 1 A per channel. Total current per module is limited to 3 A.
Output control in fault state per point	<ul style="list-style-type: none"> • Hold last state • On • Off (default)
Output states in program mode per point	<ul style="list-style-type: none"> • Hold last state • On • Off (default)
Output states in fault mode per point	<ul style="list-style-type: none"> • Hold Last State • On • Off (default)
Duration of fault mode per point	<ul style="list-style-type: none"> • 1 s • 2 s • 5 s • 10 s • Forever (default)
CIP sync	Supported

General Specifications - 5069-HSC2x0B4

Attribute	5069-HSC2x0B4
Inputs	2 quadrature (ABZ) differential inputs
Outputs	4 Channels (1 group of 4), sourcing
Voltage category	12/24V DC source
Input range, voltage	3...32V DC
Module Power bus (MOD Power) voltage range	18...32V DC
Module Power bus (MOD Power) current, max	50 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator (SA) Field Power voltage range	18...32V DC
Sensor Actuator (SA) Field Power current, max	3 A
Sensor Actuator Power bus (SA Power) Passthrough voltage range	18...32V DC
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A
Power dissipation, max	3 W
Thermal dissipation, max	10.2 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type No isolation between SA Power and I/O ports No isolation between individual I/O ports Type tested at 1500V AC for 60 s
Module keying	Electronic, software configurable
Indicators	1 green/red module status indicator 10 yellow/red I/O status indicator
Slot width	1
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: <ul style="list-style-type: none"> • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
RTB	One of the following RTB types. <ul style="list-style-type: none"> • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O modules. We recommend that you order only the RTB type that your system requires.
RTB keying	None
Terminal screw torque (5069-RTB18-SCREW)	0.4 N•m (3.5 lb•in)
Wiring category ⁽³⁾	2 - on shielded output ports 2 - on output power ports 2 - on shielded counter ports

General Specifications - 5069-HSC2x0B4

Attribute	5069-HSC2x0B4
Wire size	5069-RTB18-SPRING connections: 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation 5069-RTB18-SCREW connections: 0.5...1.5 mm ² (22...16 AWG) solid or stranded shielded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation
Insulation stripping length	5069-RTB18-SPRING connections: 10 mm (0.39 in.) 5069-RTB18-SCREW connections: 12 mm (0.47 in.)
Weight, approx	175 g (0.39 lb)
Enclosure type	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-HSC2x0B4

Attribute	5069-HSC2x0B4
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95 % noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz

Environmental Specifications - 5069-HSC2x0B4

Attribute	5069-HSC2x0B4
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±2 kV @ 5 kHz on shielded output ports ±2 kV @ 5 kHz on shielded counter ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on shielded output ports ±2 kV line-earth (CM) on shielded counter ports
Conducted RF immunity IEC 61000-4-6	10Vrms with 1 kHz sine-wave 80% AM from 150 kHz . . . 80 MHz
Voltage variation IEC 61000-4-29:	10 ms interruption on MOD Power port

Certifications - 5069-HSC2x0B4

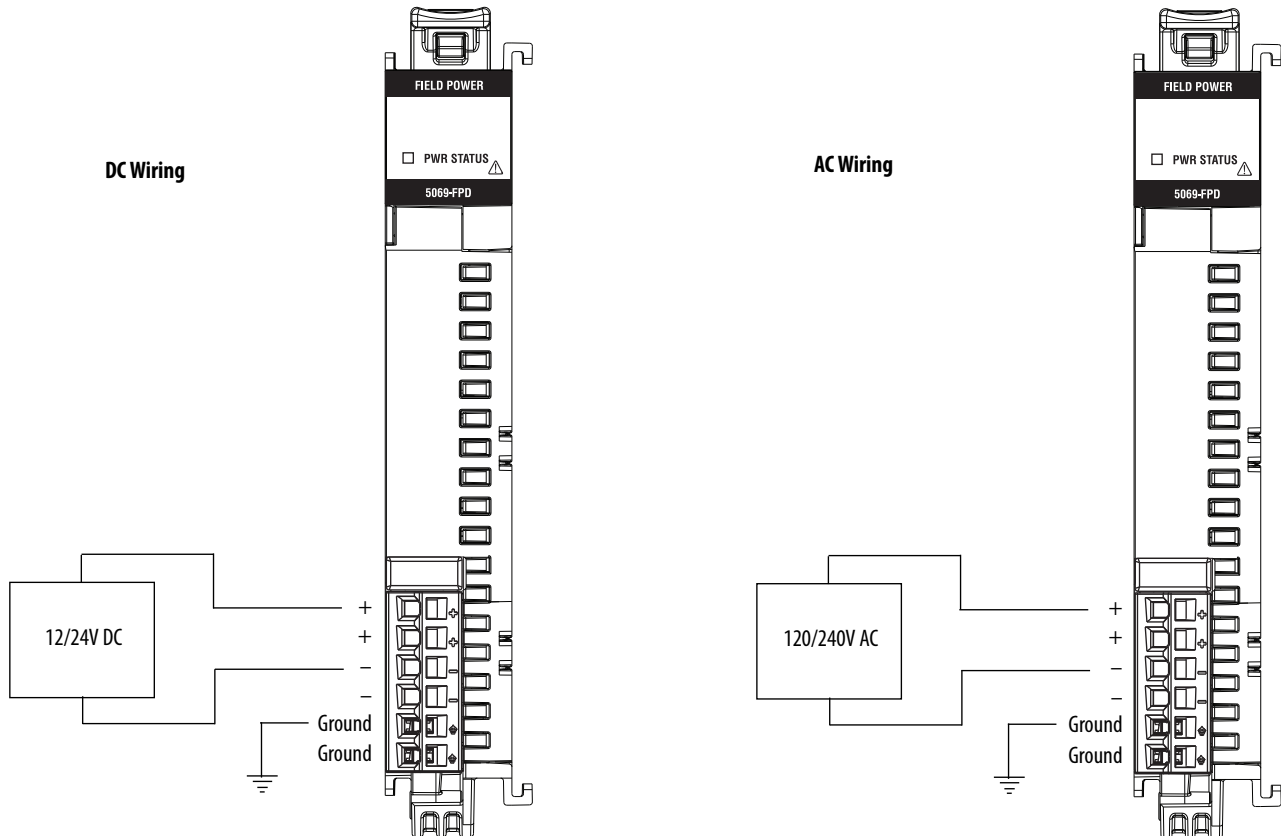
Certification ⁽¹⁾	5069-HSC2x0B4
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection “n” • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1455X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection “n” • II 3 G Ex nA IIC T4 Gc • IECEx UL 15.0007X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-FPD Field Potential Distributor

This figure shows wiring diagrams for the 5069-FPD field potential distributor connected to a discrete input device.

5069-FPD Wiring Diagrams



Technical Specifications - 5069-FPD

Attribute	5069-FPD
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator (SA) Field Power voltage ranges	0...32V DC 0...240V AC, 47...63 Hz ATEX/IECEX, 125V AC max
Sensor Actuator (SA) Field Power current, max	10 mA (DC power) 25 mA (AC power)
Sensor Actuator Power bus (SA Power) Passthrough voltage ranges	0...32V DC 0...240V AC, 47...63 Hz ATEX/IECEX, 125V AC max
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.99 A (DC power) 9.975 A (AC power)
Power dissipation, max	4.0 W
Thermal dissipation, max	13.6 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type Type tested at 1500V AC for 60 s

Technical Specifications - 5069-FPD

Module keying	None
Indicators	1 green module status indicator
Slot width	1
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: <ul style="list-style-type: none"> • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
RTB	5069-RTB6-SCREW 5069-RTB6-SPRING
Terminal screw torque (5069-RTB4-SCREW)	0.4 N•m (3.5 in•lb)
RTB keying	None
Wire category ⁽³⁾	2 - on power ports
Wire size	5069-RTB6-SPRING removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only. 5069-RTB6-SCREW removable terminal block 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only.
Insulation stripping length	5069-RTB6-SPRING connections: 10 mm (0.039 in.) 5069-RTB6-SCREW connections: 12 mm (0.47 in.)
Weight, approx	175 g (0.39 lb)
Enclosure type	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications - 5069-FPD

Attribute	5069-FPD
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g

Environmental Specifications - 5069-FPD

Attribute	5069-FPD
Emissions	IEC 61000-6-4
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC 61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports
Conducted RF immunity IEC 61000-4-6	10Vrms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz

Certifications - 5069-FPD

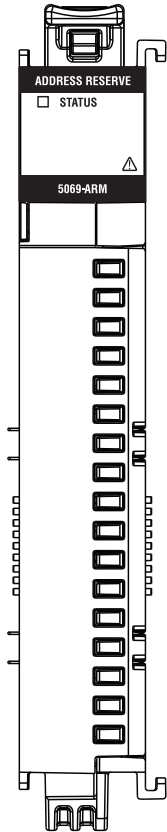
Certifications ⁽¹⁾	5069-FPD
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-0; General Requirements EN 60079-15; Potentially Explosive Atmospheres, Protection "n" II 3 G Ex nA IIC T4 Gc DEMKO 15 ATEX 1455X When used at or below 125V AC
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> IEC 60079-0; General Requirements IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" II 3 G Ex nA IIC T4 Gc IECEx UL 15.0007X When used at or below 125V AC
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-ARM Address Reserve Module

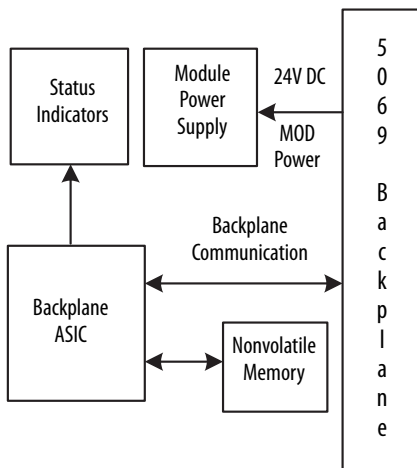
This figure shows the 5069-ARM module.

5069-ARM Module



This figure shows a functional block diagram for the 5069-ARM module.

5069-ARM Functional Block Diagram



Technical Specifications - 5069-ARM

Attribute	5069-ARM
Module Power bus (MOD Power) voltage range	18...32V DC
Module Power bus (MOD Power) current, max	45 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator (SA) Field Power voltage ranges	Not used
Sensor Actuator (SA) Field Power current, max	Not used
Sensor Actuator Power bus (SA Power) Passthrough voltage ranges	0...32V DC 0...240V AC, 47...63 Hz ATEX/IECEX, 125V AC max
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A (DC power) 9.975 A (AC power)
Power dissipation, max	1.0 W
Thermal dissipation, max	3.4 BTU/hr
Module keying	None
Indicators	1 green/red module status indicator
Dimensions (HxWxD), approx	138 x 22 x 105 mm (5.43 x 0.87 x 4.15 in.)
DIN rail	Compatible zinc-plated, yellow-chromate steel DIN rail. You can use the following DIN rail sizes: <ul style="list-style-type: none"> • EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) • EN50022 - 35 x 15 mm (1.38 x 0.59 in.)
Weight, approx	175 g (0.39 lb)
Enclosure type	None (open-style)
North American temp code	T4
ATEX temp code	T4
IECEX temp code	T4

(1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.

(2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.

Environmental Specifications - 5069-ARM

Attribute	5069-ARM
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock):	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock):	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat):	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating):	4.6 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock):	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock):	50 g
Emissions	IEC 61000-6-4

Environmental Specifications - 5069-ARM

Attribute	5069-ARM
ESD immunity IEC61000-4-2:	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80 . . . 2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000 . . . 2700 MHz
Voltage variation IEC 61000-4-29:	10 ms interruption on DC supply ports

Certifications - 5069-ARM

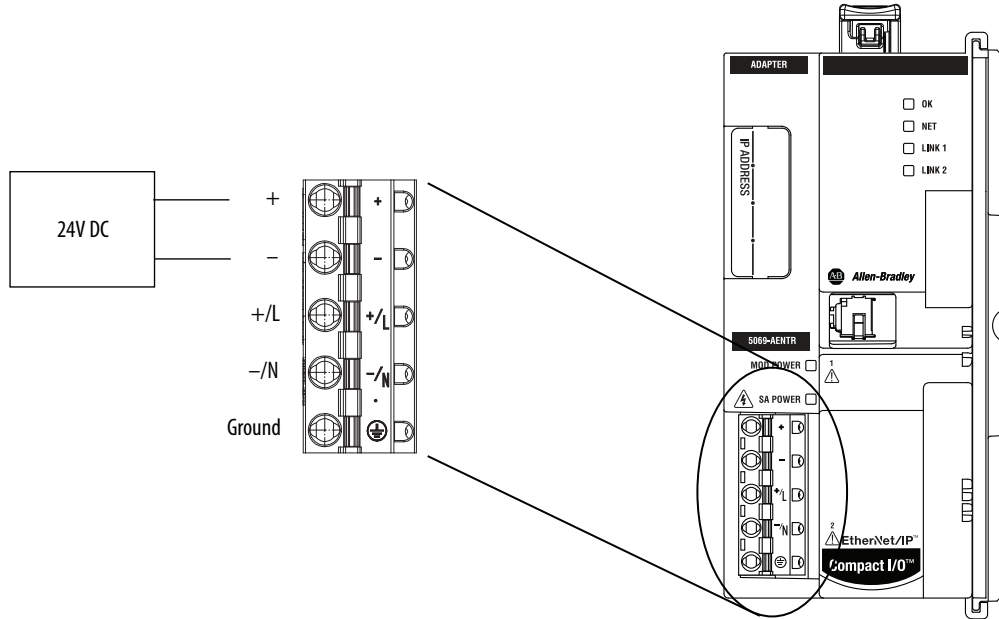
Certifications ⁽¹⁾	5069-ARM
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • DEMKO 15 ATEX 1455X When used at or below 125V AC
IECEX	IECEX System, compliant with: <ul style="list-style-type: none"> • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • II 3 G Ex nA IIC T4 Gc • IECEX UL 15.0007X When used at or below 125V AC
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-AENTR EtherNet/IP Communication Adapter

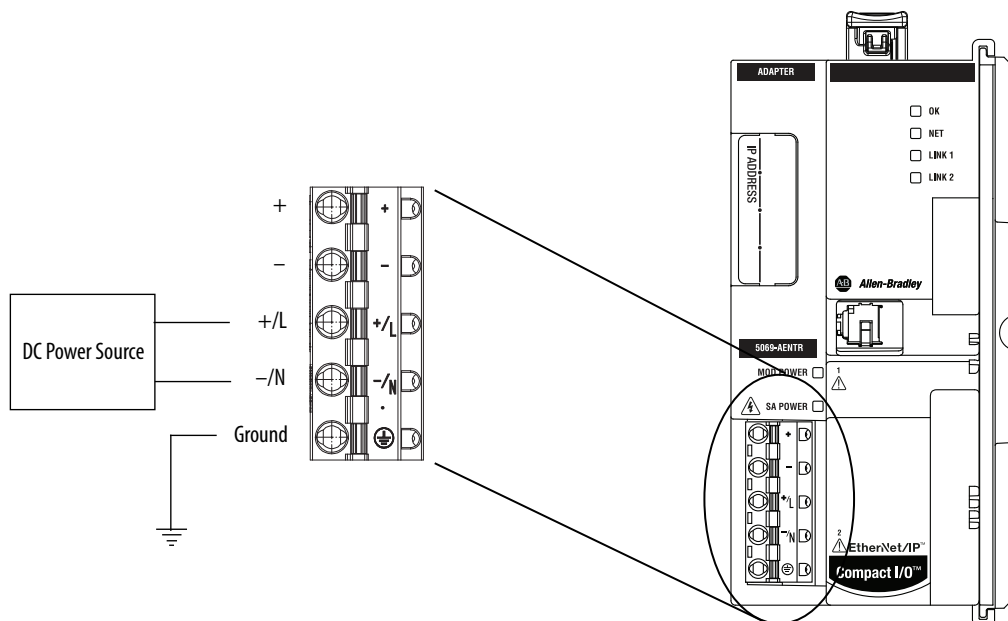
This figure shows a wiring diagram for how to connect MOD power to the 5069-AENTR EtherNet/IP adapter.

5069-AENTR Wiring Diagram - MOD Power (DC)



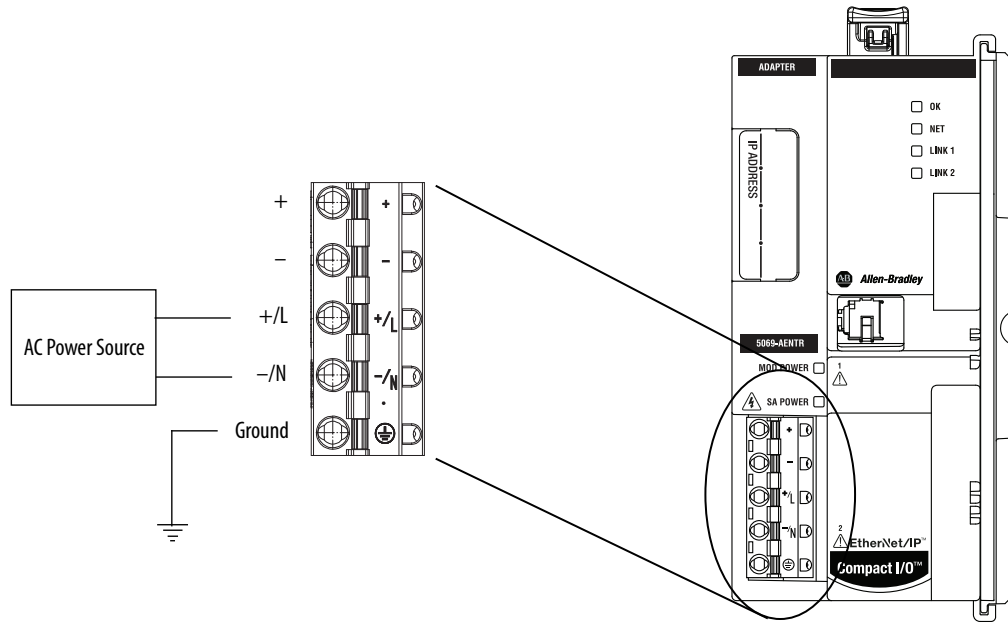
This figure shows a wiring diagram for how to connect SA power (DC) to the 5069-AENTR EtherNet/IP adapter.

5069-AENTR Wiring Diagram - SA Power (DC)



This figure shows a wiring diagram for how to connect SA power (AC) to the 5069-AENTR EtherNet/IP adapter.

5069-AENTR - Wiring Diagram - SA Power (AC)



Technical Specifications - 5069-AENTR

Attribute	5069-AENTR
Enclosure type rating	None (open-style)
Module Power bus (MOD Power) voltage range	18...32V DC
Module Power bus (MOD Power) current, max	220 mA
Module Power bus (MOD Power) inrush	1750 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.78 A
Sensor Actuator (SA) Field Power voltage ranges	0...32V DC 0...240V AC, 47...63 Hz
Sensor Actuator (SA) Field Power current, max	5 mA (DC power) 2 mA (AC power)
Sensor Actuator Power bus (SA Power) Passthrough voltage ranges	0...32V DC 0...240V AC, 47...63 Hz
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A (DC power) 9.975 A (AC power)
Recommended external overcurrent protection	MOD Power: 10...12A @ 22.5...43.2 A2t, Fast Acting SA Power: 20 A @ 250V AC
Power dissipation, max	8.5 W
Thermal dissipation, max	29 BTU/hr
Isolation voltage	300V (continuous), Basic Insulation Type, SA, and MOD Power to Backplane 300V (continuous), Basic Insulation Type, SA to MOD Power 300V (continuous), Basic Insulation Type, Ethernet to Backplane Type tested at 1500V AC for 60 s 300V (continuous), Double Insulation Type, Ethernet to MOD Power 300V (continuous), Double Insulation Type, Ethernet to SA Power Type tested at 4242V DC for 60 s No isolation between Ethernet ports
Dimensions (HxWxD), approx	138 x 56 x 105 mm (5.43 x 2.20 x 4.15 in.)

Technical Specifications - 5069-AENTR

Attribute	5069-AENTR
RTB	<p>We recommend that you order only the RTB type that your system requires. RTBs are available in separately ordered 5069 RTB kits. The following kits are available:</p> <ul style="list-style-type: none"> Kit catalog number 5069-RTB5-SCREW kit contains two 5069-RTB5-SCREW RTBs. Kit catalog number 5069-RTB5-SPRING kit contains two 5069-RTB5-SPRING RTBs. <p>IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O EtherNet/IP adapters. We recommend that you order only the RTB type that your system requires.</p>
Terminal screw torque (5069-RTB5-SCREW only)	0.5...0.6 N•m (4.4...5.3 lb•in)
Wiring category ^{(3), (4)}	<p>2 - on signal ports 1 - on power ports 2 - on Ethernet ports</p>
Wire size	<p>0.25...2.5 mm² (22...14 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 1.2 mm (3/64 in.) insulation m, single wire connection only.</p> <p>Grounding: 2.5 mm² (14 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5mm (0.14in) max diameter including insulation, single wire connection only.</p> <p>Ethernet connections: Ethernet Cabling and Installation according to IEC 61918 and IEC 61784-5-2.</p>
Insulation stripping length	<p>5069-RTB5-SCREW connections: 10 mm (0.39 in.) 5069-RTB5-SPRING connections: 10 mm (0.39 in.)</p>
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).
- (4) Use this Conductor Category information for planning conductor routing as described in the appropriate System Level Installation Manual.

Environmental Specifications - 5069-AENTR

Attribute	5069-AENTR
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0 °C < Ta < +60 °C (+32 °F < Ta < +140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	5 g @ 10...500 Hz
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	CISPR 11/22, Class A
ESD immunity IEC61000-4-2	6 kV contact discharges 8 kV air discharges

Environmental Specifications - 5069-AENTR

Attribute	5069-AENTR
Radiated RF immunity IEC61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 10V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±3 kV @ 5 kHz on power ports ±3 kV @ 5 kHz on Ethernet ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on Ethernet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz on power and Ethernet ports

Certifications - 5069-AENTR

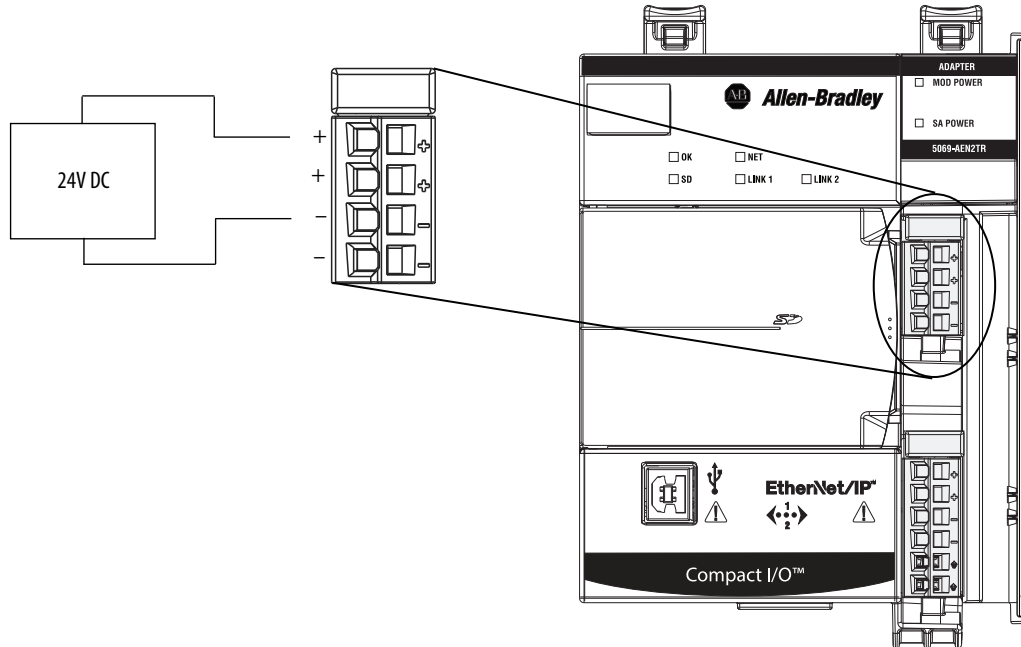
Certifications ⁽¹⁾	5069-AENTR
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E322657. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E334470.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> • EN 61326-1; Meas./Control/Lab., Industrial Requirements • EN 61000-6-2; Industrial Immunity • EN 61000-6-4; Industrial Emissions • EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> • EN 61010-2-201; Control Equipment Safety Requirements European Union 2011/65/EU RoHS, compliant with: <ul style="list-style-type: none"> • EN 50581; Technical documentation
RCM	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • EN 60079-0; General Requirements • II 3 G Ex nA IIC T4 Gc • DEMKO 16 ATEX 1758X
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • IEC 60079-0; General Requirements • II 3 G Ex nA IIC T4 Gc • IECEx UL 16.0124X
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

5069-AEN2TR EtherNet/IP Communication Adapter

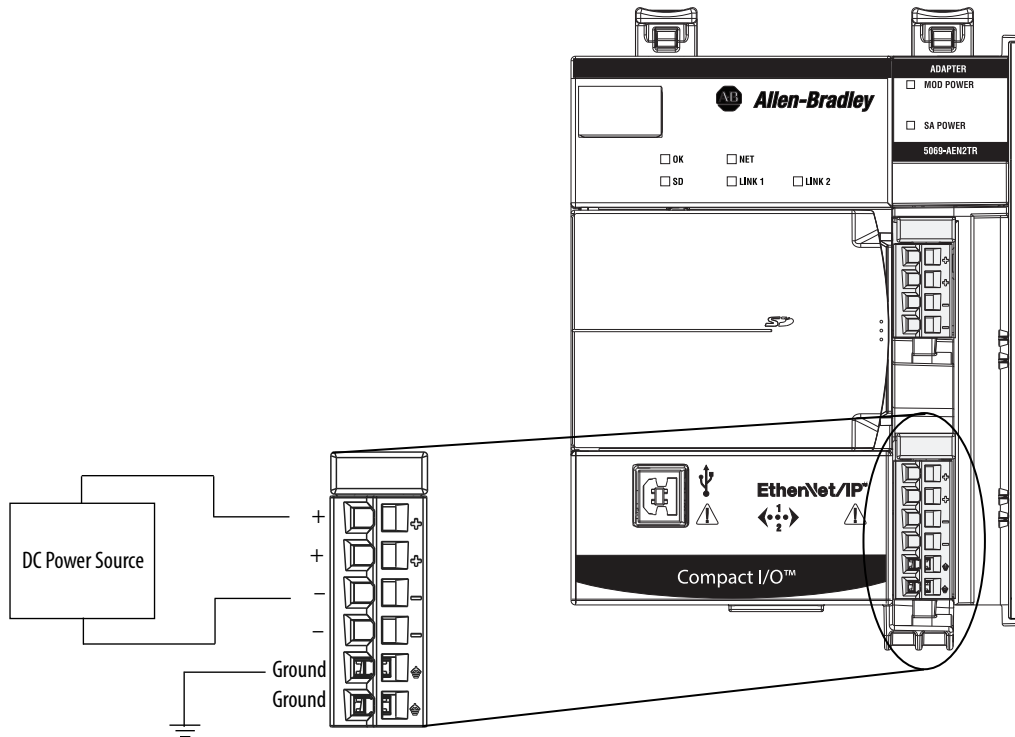
This figure shows a wiring diagram for how to connect MOD power to the 5069-AEN2TR EtherNet/IP adapter.

5069-AEN2TR Wiring Diagram - MOD Power (DC)



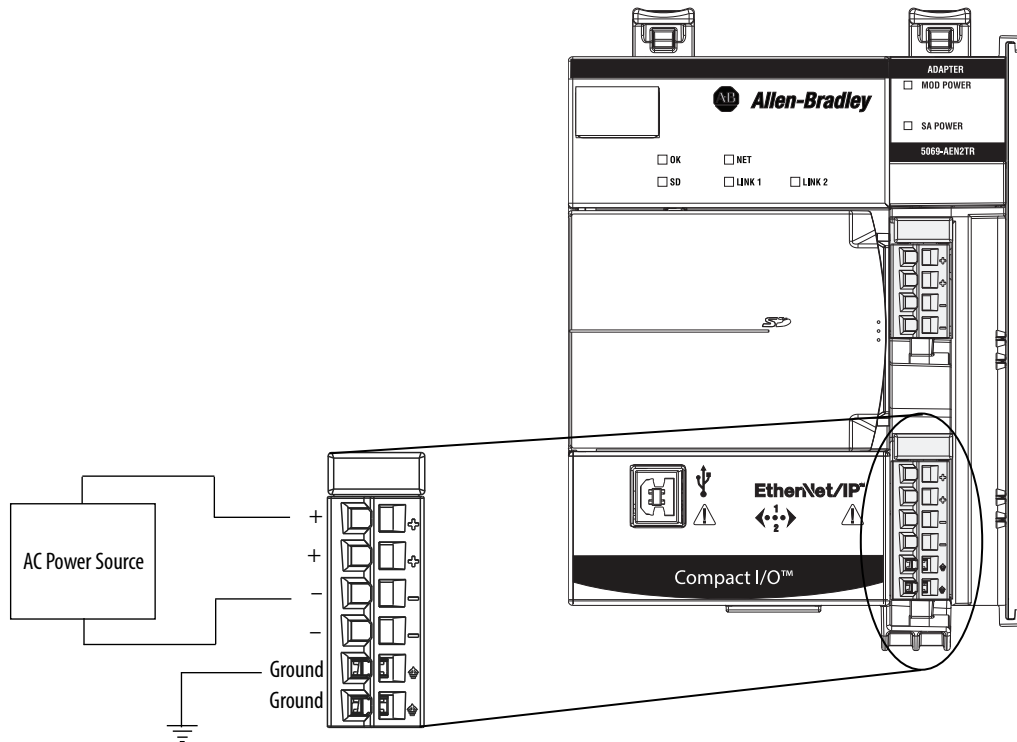
This figure shows a wiring diagram for how to connect SA power (DC) to the 5069-AEN2TR EtherNet/IP adapter.

5069-AEN2TR Wiring Diagram - SA Power (DC)



This figure shows a wiring diagram for how to connect SA power (AC) to the 5069-AEN2TR EtherNet/IP adapter.

5069-AEN2TR - Wiring Diagram - SA Power (AC)



Technical Specifications

Attribute	5069-AEN2TR
Enclosure type rating	None (open-style)
Module Power bus (MOD Power) voltage range	18...32V DC
Module Power bus (MOD Power) current, max	450 mA
Module Power bus (MOD Power) inrush	850 mA
Module Power bus (MOD Power) Passthrough voltage range	18...32V DC
Module Power bus (MOD Power) current rating, max ⁽¹⁾	9.55 A
Sensor Actuator (SA) Field Power voltage ranges	0...32V DC 0...240V AC, 47...63 Hz ATEX/IECEX, 125V AC max
Sensor Actuator (SA) Field Power current, max	10 mA (DC power) 25 mA (AC power)
Sensor Actuator Power bus (SA Power) Passthrough voltage ranges	0...32V DC 0...240V AC, 47...63 Hz ATEX/IECEX, 125V AC max
Sensor Actuator Power bus (SA Power) current rating, max ⁽²⁾	9.95 A (DC power) 9.975 A (AC power)
Power dissipation, max	8.5 W
Thermal dissipation, max	29 BTU/hr

Technical Specifications

Attribute	5069-AEN2TR
Isolation voltage	300V (continuous), basic insulation type, SA, and MOD Power to backplane 300V (continuous), basic insulation type, SA to MOD Power 300V (continuous), basic insulation type, Ethernet to backplane 300V (continuous), double insulation type, Ethernet to MOD Power 300V (continuous), double insulation type, Ethernet to SA Power 50V (continuous), functional insulation type, Ethernet to USB 300V (continuous), basic insulation type, USB to backplane 300V (continuous), double insulation type, USB to MOD Power 300V (continuous), double insulation type, USB to SA Power No isolation between Ethernet ports Type tested at 1500V AC for 60 s
Dimensions (HxWxD), approx	138 x 98 x 137 mm (5.43 x 3.86 x 5.39 in.)
RTB	RTBs are available in separately ordered 5069 RTB kits. The MOD power connection uses a 4-point RTB, and the SA power connection uses a 6-point RTBs. The following kits are available: <ul style="list-style-type: none"> Kit catalog number 5069-RTB4-SCREW contains RTB catalog numbers 5069-RTB6-SCREW and 5069-RTB4-SCREW Kit catalog number 5069-RTB6-SPRING contains RTB catalog numbers 5069-RTB6-SPRING and 5069-RTB4-SPRING IMPORTANT: You must order RTBs separately. RTBs do not ship with 5069 Compact I/O EtherNet/IP adapters. We recommend that you order only the RTB type that your system requires.
Terminal screw torque (5069-RTB4-SCREW, 5069-RTB6-SCREW)	0.4 N•m (3.5 lb•in)
Wiring category ⁽³⁾	3 - on USB port 2 - on power ports 2 - on Ethernet ports
Wire size	5069-RTB4-SPRING, 5069-RTB6-SPRING removable terminal blocks 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105°C (221 °F), or greater, 2.9 mm (0.11 in.) max diameter including insulation, single wire connection only 5069-RTB4-SCREW, 5069-RTB6-SCREW removable terminal blocks 0.5...1.5 mm ² (22...16 AWG) solid or stranded copper wire rated at 105°C (221 °F), or greater, 3.5 mm (0.14 in.) max diameter including insulation, single wire connection only
Insulation stripping length	5069-RTB4-SPRING, 5069-RTB6-SPRING connection: 10 mm (0.39 in.) 5069-RTB4-SCREW, 5069-RTB6-SCREW connections: 12 mm (0.47 in.)
North American temp code	T4
ATEX temp code	T4
IECEx temp code	T4

- (1) Maximum level of MOD Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (2) Maximum level of SA Power current that the module is capable of passing through to the next module in the system. The specific level of current passed through varies based on system configuration.
- (3) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Environmental Specifications

Attribute	5069-AEN2TR
Temperature, operating IEC 60068-2-1 (Test Ab, Operating Cold), IEC 60068-2-2 (TestBb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Operating Thermal Shock)	0...60 °C (32...140 °F)
Temperature, surrounding air, max	60 °C (140 °F)
Temperature, nonoperating IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Nonoperating Thermal Shock)	-40...+85 °C (-40...+185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.6 g @ 10...500 Hz

Environmental Specifications

Attribute	5069-AEN2TR
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	50 g
Emissions	IEC 61000-6-4
ESD immunity IEC61000-4-2	6 kV contact discharges 8 kV air discharges
Radiated RF immunity IEC61000-4-3	10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
EFT/B immunity IEC 61000-4-4	±4 kV @ 5 kHz on power ports ±2 kV @ 5 kHz on Ethernet ports
Surge transient immunity IEC 61000-4-5	±1 kV line-line (DM) and ±2 kV line-earth (CM) on power ports ±2 kV line-earth (CM) on Ethernet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz on power and Ethernet ports
Voltage variation IEC 61000-4-29	10 ms interruption on MOD Power port

Certifications

Certifications ⁽¹⁾	5069-AEN2TR
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584. UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.
CE	European Union 2014/30/EU EMC Directive, compliant with: <ul style="list-style-type: none"> EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) European Union 2014/35/EU LVD, compliant with: <ul style="list-style-type: none"> EN 61010-2-201; Control Equipment Safety Requirements
RCM	Australian Radiocommunications Act, compliant with: EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: <ul style="list-style-type: none"> EN 60079-15; Potentially Explosive Atmospheres, Protection "n" EN 60079-0; General Requirements II 3 G Ex nA IIC T4 Gc DEMKO 15 ATEX 1455X When used at or below 125V AC
IECEx	IECEx System, compliant with: <ul style="list-style-type: none"> IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" IEC 60079-0; General Requirements II 3 G Ex nA IIC T4 Gc IECEx UL 15.0007X When used at or below 125V AC
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: Article 58-2 of Radio Waves Act, Clause 3
EAC	Russian Customs Union TR CU 020/2011 EMC Technical Regulation Russian Customs Union TR CU 004/2011 LV Technical Regulation
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications

(1) When marked. See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

Additional Resources

These documents contain more information about related products from Rockwell Automation.

Resource	Description
Replacement Guidelines: Logix5000 Controllers Reference Manual, publication 1756-RM100	Provides guidelines on how to replace the following: <ul style="list-style-type: none"> ControlLogix 5560/5570 controller with a ControlLogix 5580 controller CompactLogix 5370 L3 controllers with a CompactLogix 5380 controller
EtherNet/IP Communication Modules in 5000 Series Systems User Manual, publication ENET-UM004	Describes how to install, configure, and operate the 5069 Compact I/O EtherNet/IP adapters.
5000 Series Digital I/O Modules in Logix5000 Control Systems User Manual, publication 5000-UM004	Provides information on how to install, configure, and operate 5000 Series digital I/O modules.
5000 Series Analog I/O Modules in Logix5000 Control Systems User Manual, publication 5000-UM005	Provides information on how to install, configure, and operate 5000 Series analog I/O modules.
5000 Series High-speed Counter Module in Logix5000 Control Systems User Manual, publication 5000-UM006	Provides information on how to install, configure, and operate 5000 Series high-speed counter modules.
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.rockwellautomation.com/rockwellautomation/certification/overview.page	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 Allen-Bradley distributor or Rockwell Automation sales representative.

Rockwell Automation Support

Use the following resources to access support information.

Technical Support Center	Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.	www.rockwellautomation.com/knowledgebase
Local Technical Support Phone Numbers	Locate the phone number for your country.	www.rockwellautomation.com/global/support/get-support-now.page
Direct Dial Codes	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	www.rockwellautomation.com/global/support/direct-dial.page
Literature Library	Installation Instructions, Manuals, Brochures, and Technical Data.	www.rockwellautomation.com/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	www.rockwellautomation.com/global/support/pcdc.page

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete the How Are We Doing? form at http://literature.rockwellautomation.com/idc/groups/literature/documents/du/ra-du002_-en-e.pdf.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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