# 5069-0BV8S and 5069-0BV8SK Safety Output Modules

You can use the safety output modules in Bipolar mode or Sourcing mode.

# Bipolar Mode

When the module is wired as shown, and the requirements listed are met in the project of the safety controller, it is suitable for applications that are rated up to, and including, **Category 4** as defined in ISO 13849-1.

To achieve that suitability rating, you may have to perform diagnostic testing and monitoring of the safety function. One diagnostic test method is to configure the safety output channel for Safety Pulse Test to test the circuit for short circuits to 24V DC.

- We strongly recommend that you connect separate shielded cables to the P terminal and the N terminal to reduce the possibility of
  a wire short between the terminals. If a wire-short fault is detected across the P-N pair, the module outputs are turned off, but the
  actuator that is connected to it remains on.
- Configure the application so that No Load and Overload conditions are only detectable at the P terminal.

For Category 4 applications, if your application remains in safe state, that is, the output is off, for a prolonged duration, we recommend that you take one of the following actions:

- Apply output monitoring at the actuator. The monitoring can be direct or indirect.
- Limit the safe state to no more than 24 hours.
- Conduct functional test if safe state dwell time increases.

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#### Actuator LA Power

In this wiring configuration, you must connect the LA+ terminal to an SELV/PELV-listed power supply.

The LA+ and LA- on the actuator must be connected to the same power supply as the LA+ and LA- on the module.

## **Connection Pairs**

The terminals for each channel function as a Bipolar connection pair when you use a 5069-0BV8S or 5069-0B8VSK module in Bipolar switching mode. For example, the Safety Output 0 P (Sourcing) terminal and Safety Output 0 N (Sinking) terminal are a Bipolar connection pair. That is, they are a P-N pair.

When the module is in Bipolar switching mode, you must connect the device to both terminals.

#### **Channel Connections**

This wiring example shows connections to the P-N pair for Safety Output 0. You are not limited to using channel 0 in this mode. You can use all channel pairs as determined by your application.

#### LA Power

The Local Actuator (LA+ and LA –) power connections are used to supply field-side power to the module.

• The 5069-0BV8S and 5069-0BV8SK modules do not draw current from the SA Power bus.

Still, the modules are DC-type modules and you must install them on a DC SA Power bus.

- If you install modules in a system that use AC SA power and DC SA power, you must install them on separate SA power buses.
- You use a 5069-FPD field potential distributor to establish a new SA Power bus in a system. SA Power buses are isolated from each other. To keep the modules on separate SA Power buses, complete the following steps.
- Install the modules that use one type of SA power, for example DC, 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  $$\operatorname{SA}{\operatorname{Power}}$  bus.
- Install the modules that use the other type of SA power, for example AC, on the second SA Power bus.
- We strongly recommend that, if you have a direct connection between the safety output module and an input module and those modules are powered by separate power supplies, that you connect SA- and LA- together. This practice helps to eliminate grounding float from disrupting diagnostics.



LA +

24V DC

SELV/PELV-listed

power supply

 $(\rightarrow)$ OUTPUT MOD STATUS 🗆 SA 5069-OBV8S Safety Output 0 P (Sourcing) Safety Output O N (Sinking) Safety Output 1 P (Sourcing) Safety Output 1 N (Sinking) Safety Output 2 P (Sourcing) Safety Output 2 N (Sinking) Safety Output 3 P (Sourcing) Safety Output 3 N (Sinking) Safety Output 4 P (Sourcing) Safety Output 4 N (Sinking) Safety Output 5 P (Sourcing) Safety Output 5 N (Sinking) Safety Output 6 P (Sourcing) Safety Output 6 N (Sinking) Safety Output 7 P (Sourcing) Safety Output 7 N (Sinking) LA + LA -

When the module is wired as shown, and the requirements listed are met in the project of the safety controller, it is suitable for applications that are rated up to, and including, **Category 4** as defined in ISO 13849-1.

To achieve that suitability rating, you may have to perform diagnostic testing and monitoring of the safety function. One diagnostic test method is to configure the safety output channel for Safety Pulse Test to test the circuit for short circuits to 24V DC. Configure the application so that a No Load fault can only be detected if the wires from both the P- terminal and the N- terminal are disconnected.

For Category 4 applications, if your application remains in safe state, that is, the output is off, for a prolonged duration, we recommend that you take one of the following actions:

- Apply output monitoring at the actuator. The monitoring can be direct or indirect.
- Limit the safe state to no more than 24 hours.
- Conduct functional test if safe state dwell time increases.

#### **Connection Pairs**

The terminals for each channel function as a Bipolar connection pair when you use a 5069-0BV8S or 5069-0B8VSK module in Bipolar switching mode. For example, the Safety Output 0 P (Sourcing) terminal and Safety Output 0 N (Sinking) terminal are a Bipolar connection pair. That is, they are a P-N pair. When the module is in Bipolar switching mode, you must connect the device to both terminals.

#### **Channel Connections**

This wiring example shows connections to the P-N pair for Safety Output O. You are not limited to using channel O in this mode. You can use all channel pairs as determined by your application.

#### LA Power

The Local Actuator (LA+ and LA -) power connections are used to supply field-side power to the module.

#### The 5069-0BV8S and 5069-0BV8SK modules do not draw current from the SA Power bus.

Still, the modules are DC type modules, and you must install them on a DC SA Power bus.

- If you install modules in a system that use AC SA power and DC SA power, you must install them on separate SA power buses.
- You use a 5069-FPD field potential distributor to establish a new SA Power bus in a system. SA Power buses are isolated from each other. To keep the modules on separate SA Power buses, complete the following steps.
- Install the modules that use one type of SA power, for example DC, 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 AC, on the second SA Power bus.
- We strongly recommend that, if you have a direct connection between the safety output module and an input module and those modules are powered by separate power supplies, that you connect SA- and LA- together. This practice helps to eliminate grounding float from disrupting diagnostics.



When the module is wired as shown, and the requirements listed are met in the project of the safety controller, it is suitable for applications that are rated up to, and including, **Category 4** as defined in ISO 13849-1. To achieve that suitability rating, you may have to perform diagnostic testing and monitoring of the safety function. One diagnostic test method is to configure the safety output channel for Safety Pulse Test to test the circuit for short circuits to 24V DC.

For Category 4 applications, if your application remains in safe state, that is, the output is off, for a prolonged duration, we recommend that you take one of the following actions:

- Apply output monitoring at the actuator. The monitoring can be direct or indirect.
- Limit the safe state to no more than 24 hours.
- Conduct functional test if safe state dwell time increases.
- A qualified actuator must be installed, for example, in accordance with IEC 60947.

# **Connection Pairs**

The terminals for each channel function as a Bipolar connection pair when you use a 5069-0BV8S or 5069-0B8VSK module in Bipolar switching mode. For example, the Safety Output 0 P (Sourcing) terminal and Safety Output 0 N (Sinking) terminal are a Bipolar connection pair. That is, they are a P-N pair.

When the module is in Bipolar switching mode, you must connect the device to both terminals.

## **Channel Connections**

This wiring example shows connections to the P-N pair for Safety Output O. You are not limited to using channel O in this mode. You can use all channel pairs as determined by your application.

# LA Power

The Local Actuator (LA+ and LA –) power connections are used to supply field-side power to the module.

 The 5069-0BV8S and 5069-0BV8SK modules do not draw current from the SA Power bus.

Still, the modules are DC type modules, and you must install them on a DC SA Power bus

- If you install modules in a system that use AC SA power and DC SA power, you must install them on separate SA power buses.
- You use a 5069-FPD field potential distributor to establish a new SA Power bus in a 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 DC, 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 AC, on the second SA Power bus.
- We strongly recommend that if, you have a direct connection between the safety output module and an input module and those modules are powered by separate power supplies, that you connect SA- and LAtogether. This practice helps to eliminate grounding float from disrupting diagnostics.
- The SA Power to adjacent SA Power electrical isolation that the 5069-FPD field potential distributor provides has a rating of 240V AC (continuous) reinforced insulation type.



# Sourcing Mode

When the module is wired as shown, it is suitable for applications that are rated up to, and including, **Category 2** as defined in ISO 13849-1.

To achieve that suitability rating, you may have to perform diagnostic testing and monitoring of the safety function. One diagnostic test method is to configure the safety output channel for Safety Pulse Test to test the circuit for short circuits to 24V DC.

#### **Channel Connections**

This wiring example shows connection to Safety Output O. You are not limited to using channel 0 in this mode. You can use all channels as determined by your application.

#### LA Power

The Local Actuator (LA+ and LA -) power connections are used to supply field-side power to the module. The 5069-0BV8S and 5069-0BV8SK modules do not

draw current from the SA Power bus.

Still, the modules are DC type modules, and you must install them on a DC SA Power bus

- If you install modules in a system that use AC SA power and DC SA power, you must install them on separate SA power buses.
- You use a 5069-FPD field potential distributor to establish a new SA Power bus in a 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 DC, 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 AC, on the second SA Power bus.
- We strongly recommend that, if you have a direct connection between the safety output module and an input module and those modules are powered by separate power supplies, that you connect SA- and LAtogether. This practice helps to eliminate grounding float from disrupting diagnostics.



24V DC

SELV/PELV-listed

power supply

+

Safety Output O P (Sourcing) Safety Output O N (Sinking) Safety Output 1 P (Sourcing) Safety Output 1 N (Sinking) Safety Output 2 P (Sourcing) Safety Output 2 N (Sinking) Safety Output 3 P (Sourcing) Safety Output 3 N (Sinking) Safety Output 4 P (Sourcing) Safety Output 4 N (Sinking) Safety Output 5 P (Sourcing) Safety Output 5 N (Sinking) Safety Output 6 P (Sourcing) Safety Output 6 N (Sinking) Safety Output 7 P (Sourcing) Safety Output 7 N (Sinking) LA +



When the module is wired as shown, it is suitable for applications that are rated up to, and including, **Category 4** as defined in ISO 13849-1.

To achieve that suitability rating, you may have to perform diagnostic testing and monitoring of the safety function. One diagnostic test method is to configure the safety output channel for Safety Pulse Test to test the circuit for short circuits to 24V DC.

For Category 4 applications, if your application remains in safe state, that is, the output is off, for a prolonged duration, we recommend that you take one of these actions:

- Apply output monitoring at the actuator. The monitoring can be direct or indirect. •
- Limit the safe state to no more than 24 hours.
- Conduct functional test if safe state dwell time increases.

# **Connection Pairs**

When you use dual-channel sourcing wiring on the 5069-0BV8S or 5069-0BV8SK module, you must connect the devices to dual-channel connection pairs. For example, the devices are connected to channels 4 and 5 because they are a connection pair. The following channels are dual-channel connection pairs:

- Channels 0 and 1(shown)
- Channels 2 and 3
- Channels 4 and 5
- Channels 6 and 7

#### **Channel Connections**

This wiring example shows connections to Safety Output 0 P and Safety Output 1 P. You are not limited to using channels 0 and 1 in this mode. You can use all channel pairs as determined by your application.

#### LA Power

The Local Actuator (LA+ and LA -) power connections are used to supply field-side power to the module.

 The 5069-0BV8S and 5069-0BV8SK modules do not draw current from the SA Power bus.

Still, the modules are DC type modules, and you must install them on a DC SA Power bus

- If you install modules in a system that use AC SA power and DC SA power, you must install them on separate SA power buses.
- You use a 5069-FPD field potential distributor to establish a new SA Power bus in a system. SA Power buses are isolated from each other. To keep the modules on separate SA Power buses, complete these steps.
- 1. Install the modules that use one type of SA power, for example DC, 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 AC, on the second SA Power bus.
- We strongly recommend that, if you have a direct connection between the safety output module and an input module and those modules are powered by separate power supplies, that you connect SA- and LA- together. This practice helps to eliminate grounding float from disrupting diagnostics.



Safety Output O P (Sourcing) Safety Output O N (Sinking) Safety Output 1 P (Sourcing) Safety Output 1 N (Sinking) Safety Output 2 P (Sourcing) Safety Output 2 N (Sinking) Safety Output 3 P (Sourcing) Safety Output 3 N (Sinking) Safety Output 4 P (Sourcing) Safety Output 4 N (Sinking) Safety Output 5 P (Sourcing) Safety Output 5 N (Sinking) Safety Output 6 P (Sourcing) Safety Output 6 N (Sinking) Safety Output 7 P (Sourcing) Safety Output 7 N (Sinking) LA + LA -



24V DC

SELV/PELV-listed

power supply

+

When the module is wired as shown on <u>page 96</u>, and the requirements listed are met in the project of the safety controller, it is suitable for applications that are rated up to, and including, **Category 4** as defined in ISO 13849-1.

To achieve that suitability rating, you may have to perform diagnostic testing and monitoring of the safety function. One diagnostic test method is to configure the safety output channel for Safety Pulse Test to test the circuit for short circuits to 24V DC.

- All power source cables must be installed separately, for example, with a separate cable duct or shielded cable. Power source cables are connections to the MOD+, SA+, or LA+ terminals.
   Otherwise, a Short Circuit condition between SA+ and P can be detected and the output is turned off but the actuator that is connected to it remains on.
- You must connect two ground terminals. Otherwise, the maximum residual current at signal 0 cannot be maintained if only one ground line is connected and it is interrupted.
- A qualified actuator must be installed, for example, in accordance with IEC 60947.

For Category 4 applications, if your application remains in safe state, that is, the output is off, for a prolonged duration, we recommend that you take one of these actions:

- Apply output monitoring at the actuator. The monitoring can be direct or indirect.
- Limit the safe state to no more than 24 hours.
- Conduct functional test if safe state dwell time increases.



#### Channel Connections

This wiring example shows connections to Safety Output 0. You are not limited to using channel 0 in this mode. You can use all channels as determined by your application.

# LA Power

The Local Actuator (LA+ and LA –) power connections are used to supply field-side power to the module.

• The 5069-0BV8S and 5069-0BV8SK modules **do not draw current from the SA Power bus**.

Still, the modules are DC type modules, and you must install them on a DC SA Power bus

- If you install modules in a system that use AC SA power and DC SA power, you must install them on separate SA power buses.
- You use a 5069-FPD field potential distributor to establish a new SA Power bus in a system. SA Power buses are isolated from each other. To keep the modules on separate SA Power buses, complete these steps.
- Install the modules that use one type of SA power, for example DC, 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.
- Install the modules that use the other type of SA power, for example AC, on the second SA Power bus.
- We strongly recommend that, if you have a direct connection between the safety output module and an input module and those modules are powered by separate power supplies, that you connect SA- and LAtogether. This practice helps to eliminate grounding float from disrupting diagnostics.

# Technical Specifications - 5069-0BV8S, 5069-0BV8SK

Attribute	5069-0BV8S, 5069-0BV8SK
On-state voltage, min <sup>(1)</sup>	17.5V DC
On-state voltage, nom <sup>(1)</sup>	24V DC
On-state voltage, max <sup>(1)</sup>	32V DC
On-state voltage drop, max <sup>(1)</sup>	0.5V DC
On-state current per channel, min <sup>(1)</sup>	10 mA
Off-state voltage, max <sup>(1)</sup>	0.5V DC
Off-state leakage current per point, max <sup>(2)</sup>	1.5 mA
Output current rating per channel	1A
Surge current per point, max	1.5 A
Output delay time (backplane to screw)	
Off to On	4 ms, max
On to Off	4 ms, max
Safety Integrity Level	SIL CL3, PLe, Cat. 4
Safety reaction time (SRT)	4.5 ms
Pulse width, min	400 µs
Field power loss detection	Yes (per point)
No load detection diagnostics	Yes (per point)
Output short circuit/overload detection	Yes (per point)
Output short circuit/overload protection	Yes (per point)
Output overtemperature detection	Yes (per point)
Output overtemperature protection	Yes (per point)
Reverse voltage protection	Yes
Overvoltage protection, max	Yes
CIP Sync	Yes
Output control in fault mode per point	No
Output states in program mode per point	Off
Output states in fault mode per point	Off
Duration of fault mode per point	Forever - Safety outputs turn off when the fault is detected and remain off until the cause of the fault is removed and the safety outputs are commanded into the safe state.

(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 KD, 0.5 W resistor for transistor operation.

# General Specifications - 5069-0BV8S, 5069-0BV8SK

Attribute	5069-5069-0BV8S, 5069-0BV8SK	
Outputs	8	
Voltage category	24V DC	
Voltage and current ratings - System is mounted in Horizontal o	rientation	
Output Rating	1 A per channel	
MOD Power	75 mA @ 1832V DC	
MOD Power Passthrough, max <sup>(1)</sup>	5 A @ 1832V DC	
LA Power	1 A per channel @ 1832V DC 8 A per module @ 1832V DC	
SA Power Passthrough, max <sup>(2)</sup> The module does not draw SA Power current.	9.95 A @ 1832V DC	
Do not exceed 5 A MOD Power Passthrough current draw. Do not exceed 10 A or SA Power Passthrough current draw.		
Voltage and current ratings - System is mounted in any orientation other than Horizontal (module de-rating) <sup>(3)</sup>		
Output Rating	0.7 A per channel	
MOD Power	75 mA @ 1832V DC	
MOD Power Passthrough, max <sup>(1)</sup>	5 A @ 1832V DC	
LA Power	0.7 A per channel @ 1832V DC 5.6 A per module @ 1832V DC	
SA Power Passthrough, max <sup>(2)</sup> The module does not draw SA Power current.	5 A @ 1832V DC	
Do not exceed 5 A MOD or SA Power Passthrough current drav	in any orientation other than Horizontal.	
Power dissipation, max	6.5 W	
Thermal dissipation, max	6.5 W	
Isolation voltage	250V (continuous), Basic Insulation Type 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 1 green/red SA power status indicator 16 yellow/red I/O status indicators	
Slot width	1.5	
Dimensions (HxWxD), approx	144.57 x 36 x 105.42 mm (5.69 x 1.42 x 4.15 in.)	
DIN rail	Compatible zinc-plated chromate-passivated steel DIN rail. You can use the EN50022 - 35 x 7.5 mm (1.38 x 0.30 in.) DIN rail.	
RTB	One of these RTB types. • 5069-RTB18-SPRING RTB • 5069-RTB18-SCREW RTB <b>IMPORTANT</b> : You must order RTBs separately. RTBs do not ship with Compact 5000 I/O modules. We recommend that you order only the RTB type that your system requires.	
RTB torque (5069-RTB18-SCREW RTB only)	0.4 N·m (3.5 lb·in)	
RTB keying	None	

## General Specifications - 5069-0BV8S, 5069-0BV8SK

Attribute	5069-5069-0BV8S, 5069-0BV8SK
Wire type	Copper
Wire category <sup>(4)</sup>	2 - signal ports 1 wire per terminal for each signal port
Wire size	
5069-RTB18-SCREW connections	0.51.5 mm <sup>2</sup> (2216 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 3.5 mm (9/64 in.) insulated max diameter
5069-RTB18-SPRING connections	0.51.5 mm <sup>2</sup> (2216 AWG) solid or stranded copper wire rated at 105 °C (221 °F), or greater, 2.9 mm (1/8 in.) insulated max diameter
Insulation stripping length	
5069-RTB18-SCREW connections	12 mm (0.47 in.)
5069-RTB18-SPRING connections	10 mm (0.39 in.)
Weight, approx	240 g (0.53 lb.)
Enclosure type rating	None (open-style)
North American temp code	Τ4
ATEX temp code	Τ4
IECEx temp code	Τ4

(1) Level of MOD Power current that passes through the module depends on the system configuration, such as, module slot location and the other module types that are used in the system. For more information, see the CompactLogix 5380 and Compact GuardLogix 5380 Controllers User Manual, <u>5069-UM001</u>, CompactLogix 5480 Controllers User Manual, <u>5069-UM002</u>, and Compact 5000 EtherNet/IP Adapters User Manual, <u>5069-UM004</u>.

(2) Level of SA Power current that passes through the module depends on the system configuration, such as, module slot location and the other module types that are used in the system. For more information, see the CompactLogix 5380 and Compact GuardLogix 5380 Controllers User Manual, <u>5069-UM001</u>, CompactLogix 5480 Controllers User Manual, <u>5069-UM002</u>, and Compact 5000 EtherNet/IP Adapters User Manual, <u>5069-UM004</u>.

(3) The additional supported mounting orientations are Inverted Horizontal, Vertical, Inverted Vertical, Upside Down, and Upside Up.

(4) Use this Conductor Category information for planning conductor routing. See the Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

# Environmental Specifications - 5069-0BV8S, 5069-0BV8SK

Attribute	5069-0BV8S, 5069-0BV8SK	
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, 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)	
Temperature, surrounding air, max.		
System is mounted in Horizontal orientation	60 °C (140 °F)	
System is mounted in any orientation other than Horizontal (module de-rating) $^{(1)}$	50 °C (122 °F)	
Temperature, ambient, max		
System is mounted in Horizontal orientation	60 °C (140 °F)	
System is mounted in any orientation other than Horizontal (module de-rating) <sup>(1)</sup>	50 °C (122 °F)	
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	595% noncondensing	
Vibration IEC 60068-2-6 (Test Fc, Operating)	4.5 g @ 10500 Hz	

# Environmental Specifications - 5069-0BV8S, 5069-0BV8SK

Attribute	5069-0BV8S, 5069-0BV8SK
Shock, operating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	15 g
Shock, nonoperating IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 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	20V/m with 1 kHz sine-wave 80% AM from 802000 MHz 20V/m with 200 Hz 50% pulse 100% AM at 900 MHz 20V/m with 200 Hz 50% pulse 100% AM at 1890 MHz 3V/m with 1 kHz sine-wave 80% AM from 20002700 MHz
EFT/B immunity IEC 61000-4-4	±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 signal ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz80 MHz
Voltage variation IEC 61000-4-29	10 ms interruption on DC supply ports

(1) The additional supported mounting orientations are Inverted Horizontal, Vertical, Inverted Vertical, Upside Down, and Upside Up.

# Certifications - 5069-0BV8S, 5069-0BV8SK

Certification <sup>(1)</sup>	5069-0BV8S, 5069-0BV8SK
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: • 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 2006/42/EC MD, compliant with: • EN 60204-1; Electrical equipment of machines • EN ISO 13849-1; Safety-related parts of control systems • EN 62061; Functional safety of safety-related control systems • Cat. 4/PLe according to EN ISO 13849-1, and SIL 3 according to EN 626011/IEC 61508/IEC 62511 European Union 2011/65/EU RoHS, compliant with: • EN 50581; Technical documentation
RCM	Australian Radiocommunications Act, compliant with: • EN 61000-6-4; Industrial Emissions
Ex	European Union 2014/34/EU ATEX Directive, compliant with: • EN 60079-0; General Requirements • EN 60079-15; Potentially Explosive Atmospheres, Protection "n" • Ex nA IIC T4 Gc • DEMKO 18 ATEX 2019X
IECEx	IECEx System, compliant with: • IEC 60079-0; General Requirements • IEC 60079-15; Potentially Explosive Atmospheres, Protection "n" • Ex nA IIC T4 Gc • IECEx UL 18.0014X
TÜV	TÜV Certified for Functional Safety; <sup>(2)</sup> • Capable of SIL 3, CAT. 4/PLe
KC	Korean Registration of Broadcasting and Communications Equipment, compliant with: • Article 58-2 of Radio Waves Act, Clause 3

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

(2) When used with specified firmware revisions. See the Product Safety Certificate at <a href="http://www.rockwellautomation.com/global/certification/overview.page">http://www.rockwellautomation.com/global/certification/overview.page</a> for a full list of safety-related certifications.