

System 450™ Expansion Modules with Analog Output Catalog Page

Description

System 450 expansion modules allow you to increase the number of outputs in your control system to meet your application requirements. The following models are available:

- C450SPN-1C: Analog Expansion Module with one analog output (each 0 to 10 VDC or 4 to 20 mA)
- C450SQN-1C: Analog Expansion Module with two analog outputs (each 0 to 10 VDC or 4 to 20 mA)

Refer to the following documents for important product application information:

- *System 450™ Series Modular Controls Product Bulletin (LIT-12011458)*
- *System 450™ Series Expansion Modules with Analog Outputs Installation Instructions (Part No. 24-7664-2799)*

Features and Benefits

- **Durable, Compact, Interchangeable Modular Components with Plug-Together Connectors and DIN Rail or Direct Wall Mount Capability**—Eliminate field wiring between modules and allow you to quickly and easily design, assemble, install, and upgrade your control systems.
- **Versatile, Multipurpose, Field-Configurable Control Modules and Expansion Modules Designed for Global Use**—Allow you to create a wide variety of application-specific control systems capable of controlling temperature, pressure, or humidity, or all three conditions simultaneously, with only a small suite of module models.
- **Control Modules with Bright Backlit LCDs and Four-Button Touchpad User Interfaces, Up to Three Hard-Wired Input Sensors and Up to Ten Relay or Analog Outputs (In Any Combination) per Control System**—Provide quick, clear, visual status of your System 450 control system inputs and outputs with the touch of a button and enable you to quickly and easily set up and adjust your control system.

C450SQN-1C Expansion Module with Analog Output



Repair Information

If the System 450™ expansion module with analog output fails to operate within its specifications, replace the unit. For a replacement System 450™ expansion module with analog output, contact a Johnson Controls® representative.


Selection Chart

Product Code Number	Product Description
C450SPN-1C	Analog Output Expansion Module; provides one analog output (0 to 10 VDC or 4 to 20 mA self-selecting signal) for proportional control.
C450SQN-1C	Analog Output Expansion Module; provides two analog outputs (0 to 10 VDC or 4 to 20 mA self-selecting signals) for proportional control.
BKT287-1R	DIN Rail; 0.30 m (12 in.) long
BKT287-2R	DIN Rail; 1 m (39-1/3 in.) long
BKT287-3R	DIN Rail; 0.61 m (24 in.) long
BKT287-4R	DIN Rail; 0.36 m (14 in.) long
PLT344-1R	DIN Rail End Clamps (Two clamps)
WHA-C450-100C	System 450 module connection extension cable, 100 cm (3.3 ft) long



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Technical Specifications

C450SPN-1C and C450SQN-1C Expansion Modules with Analog Output	
Product	C450SPN-1C: System 450 Expansion Module with one analog output C450SQN-1C: System 450 Expansion Module with two analog outputs
Power Consumption	C450SPN-1C: 1.1 VA maximum using 0 to 10 V out; 1.3 VA maximum using 4 to 20 mA out C450SQN-1C: 1.8 VA maximum using 0 to 10 V out; 2.2 VA maximum using 4 to 20 mA out
Supply Power	Internal Supply Power: C450YNN-1C Power Supply Module External Supply Power: 24 VAC (20 to 30 VAC) Safety Extra-Low Voltage (SELV) (Europe), Class 2 (North America), 50/60 Hz, 10 VA minimum Note: A System 450 control module or module assembly can use an internal or an external supply power source, but must not be connected to both simultaneously.
Ambient Operating Conditions	Temperature: -40 to 66°C (-40 to 150°F) when using 0 to 10 VDC outputs; -40 to 40°C (-40 to 104°F) when using 4 to 20 mA outputs Humidity: Up to 95% RH noncondensing; maximum dew point 29°C (85°F)
Ambient Shipping and Storage Conditions	Temperature: -40 to 80°C (-40 to 176°F) Humidity: Up to 95% RH noncondensing; maximum dew point 29°C (85°F)
Analog Output	Voltage Mode (0 to 10 VDC): 10 VDC maximum output voltage 10 mA maximum output current Requires an external load of 1,000 ohms or more The AO operates in Voltage Mode when connected to devices with impedance greater than 1,000 ohms. Devices that drop below 1,000 ohms may not operate as intended with Voltage Mode applications. Current Mode (4 to 20 mA): Requires an external load between 0 to 300 ohms The AO operates in Current Mode when connected to devices with impedances less than 300 ohm. Devices that exceed 300 ohms may not operate as intended with Current Mode applications.
Control Construction	Independently mounted control, surface mounted with Lexan® 950 enclosure suitable for DIN rail mounting or direct mounting to a hard, even surface.
Dimensions (H x W x D)	127 x 61 x 61 mm (5 x 2-3/8 x 2-3/8 in.)
Weight	C450SPN-1C: 150 g (0.33 lb) C450SQN-1C: 150 g (0.33 lb)
Compliance 	United States: cULus Listed; UL 60730-1, File E27734; FCC Compliant to CFR47, Part 15, Subpart B, Class B
	Canada: cULus Listed; CAN/CSA-E60730-1, File E27734; Industry Canada (IC) Compliant to Canadian ICES-003, Class B limits
	Europe: CE Mark - Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive.
	Australia and New Zealand: RCM mark, Australia/NZ Emissions Compliant