

XS1ro/XS2ro Dual Channel Safety Relay Modules



Datasheet



Important: For complete technical information about this product, including installation instructions, application requirements and guidelines, EU Declaration of Conformity, technical specifications and accessories, see www.bannerengineering.com and search for the instruction manual, p/n 174868.

Models

Model	Description
XS1ro	1 Dual Channel Safety Relay Module (2 N.O./1 N.C.)
XS2ro	2 Dual Channel Safety Relay Module (2 N.O./1 N.C. each)

Terminal Assignment

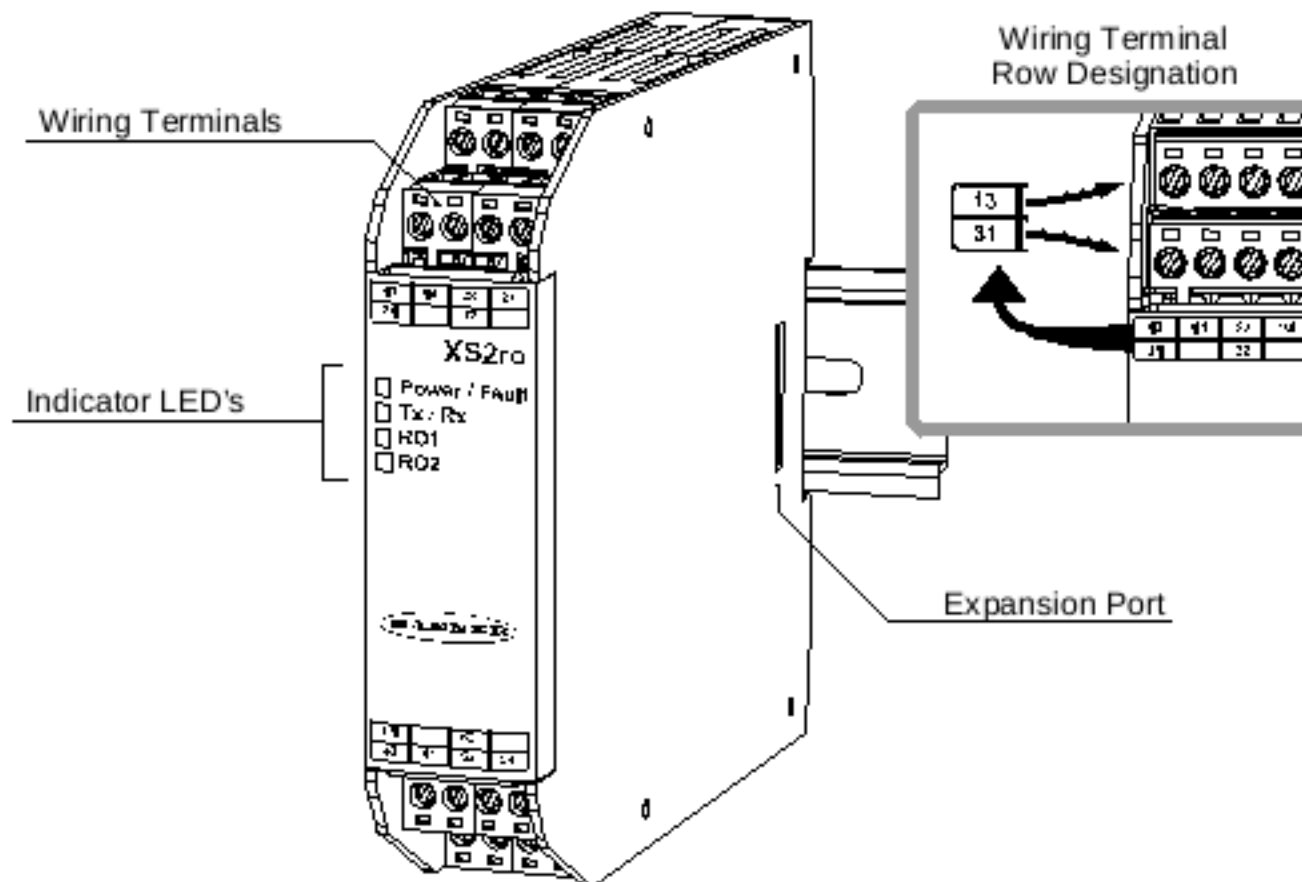
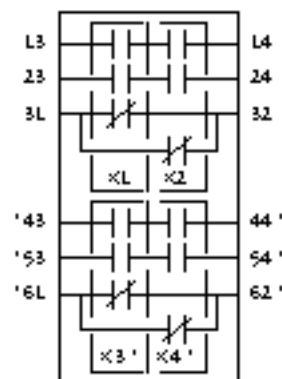


Figure 1. XS2ro



*Only present in XS2ro.
If driving external relays, EDM should be connected to monitor the state of these external relays.

Figure 2. Contact Diagram



ptions

Mechanical Stress

Shock: 15 g for 11 ms, half sine, 18 shocks total (per IEC 61131-2)
 Vibration: 3.5 mm occasional / 1.75 mm continuous at 5 Hz to 9 Hz, 1.0 g occasional and 0.5 g continuous at 9 Hz to 150 Hz: all at 10 sweep cycles per axis (per IEC 61131-2)

Safety

Category 4, PL e (EN ISO 13849)
 SIL CL 3 (IEC 62061, IEC 61508)

Product Performance Standards

See Standards and Regulations section in the Instruction Manual for a list of industry applicable U.S. and international standards

EMC

Meets or exceeds all EMC requirements in IEC 61131-2, IEC 62061 Annex E, Table E.1 (increased immunity levels), IEC 61326-1:2008, and IEC 61326-3-1:2008

Bus Power

XS1ro: 0.125 A (outputs On)
 XS2ro: 0.15 A (outputs On)

Maximum Power

2000 VA, 240 W

Electrical Life

50,000 cycles at full resistive load

Overvoltage Category

III

Pollution Degree

2

Mechanical Life

40,000,000 cycles
 Note: Transient suppression is recommended when switching inductive loads. Install suppressors across load. Never install suppressors across output contacts.

Safety Ratings

PFH [1/h]: 7.6×10^{-10}
 Proof Test Interval: 20 years

Certifications



Feature ID (FID) Compatibility

For Feature ID (FID) compatibility between a Base Module and the Expansion Modules, see XS26-2/SC26-2 Base Safety Controllers datasheet p/n 175119.

Operating Conditions

Temperature: 0 °C to +55 °C (+32 °F to +131 °F)
 Storage Temperature: -30 °C to +65 °C (-22 °F to +149 °F)
 Humidity: 90% at +50 °C maximum relative humidity (non-condensing)
 Operating Altitude: 2000 m maximum (6562 ft maximum)

Environmental Rating

NEMA 1 (IEC IP20), for use inside NEMA 3 (IEC IP54) or better enclosure

Removable Screw Terminals

Wire size: 24 to 12 AWG (0.2 to 3.31 mm²)
 Wire strip length: 7 to 8 mm (0.275 in to 0.315 in)
 Tightening torque: 0.565 N·m (5.0 in·lb)

Removable Clamp Terminals

Important: Clamp terminals are designed for 1 wire only. If more than 1 wire is connected to a terminal, a wire could loosen or become completely disconnected from the terminal, causing a short.
 Wire size: 24 to 16 AWG (0.20 to 1.31 mm²)
 Wire strip length: 8.00 mm (0.315 in)

Contact Rating

UL/NEMA:

- N.O. Contacts: 6 A 250 V ac/24 V dc resistive; B300/Q300 pilot duty
- N.C. Contacts: 2.5 A 150 V ac/24 V dc resistive; Q300 pilot duty

IEC 60947-5-1:

- N.O. Contacts: 6 A 250 V ac/dc continuous; AC 15: 3 A 250 V; DC13: 1 A 24 V/4 A 24 V 0.1 Hz
- N.C. Contacts: 2.5 A 150 V ac/dc continuous; AC 15: 1 A 150 V; DC13: 1 A 24 V/4 A 24 V 0.1 Hz

Contact Ratings to preserve 5 µm AgNi gold plating

	Minimum	Maximum
Voltage	100 mV ac/dc	60 V ac/dc
Current	1 mA	300 mA
Power	1 mW (1 mVA)	7 W (7 VA)

Required Overcurrent Protection



WARNING: Electrical connections must be made by **qualified** personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5



Important: The power supply must meet the requirements for extra low voltages with protective separation (SELV, PELV).

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