

MSR220P

Description

The MSR220P is an input expansion module for the modular Minotaur MSR200 family of monitoring safety relays. It can be connected to either the MSR210P or MSR211P to provide additional inputs.

Up to ten input modules can be connected to a base unit by simply removing the terminator, included with each base unit, and connecting the ribbon cables of the neighboring module. The connecting ribbon cable provides power to the MSR220P as well as a check on its status. The terminators must be inserted into the final output module. The input modules to a base unit can be either MSR220P or MSR221P in any combination or order.

The MSR220P has two independent inputs, which can be wired in one of five ways: one normally closed, two normally closed, three normally closed, one normally closed and one normally open or a safety mat. When used with the MSR210 base unit, the inputs to the MSR220 are continuously pulse-checked for shorts to power, ground and across inputs. Connecting a single device (must be at least dual channel) to each input meets the requirements of Category 4 per EN 594-1.

Four LEDs provide status information on the inputs. Green indicates the input is closed and red indicates the input is open.



Features

- Category 4 per EN 954-1
- Stop category 0
- 17.5 mm DIN Rail housing
- Two input circuits: safety gate, E-stop or safety mat
- Four diagnostic LEDs
- Removable terminals

LED Indicators

| | |
|-------|----------------|
| Green | Input 1 Closed |
| Red | Input 1 Open |
| Green | Input 2 Closed |
| Red | Input 2 Open |

Specifications

| Safety Ratings | |
|---|---|
| Standards | EN 954-1, ISO 13849-1, IEC/EN 60204-1, IEC 60947-4-1, IEC 60947-5-1, ANSI 11.19, AS4024.1 |
| Safety Classification | Cat. 4 per EN 954-1 (ISO 13849-1), SIL CL3 per EN IEC 62061, PLe per ISO 13849-1 |
| Functional Safety Data * Note: For up-to-date information, visit http://http://ab.rockwellautomation.com/Safety | PFH _D : < 3.7 x 10 ⁻¹⁰ MTTF _d : > 825 years Suitable for performance levels PLe (according to ISO 13849-1:2006) and for use in SIL3 systems (according to IEC 62061) depending on the architecture and application characteristics |
| Certifications | CE Marked for all applicable directives, cULus, c-Tick, and BG |
| Power Supply | |
| Input Power Entry | 24V DC from the base unit |
| Power Consumption | 2 W |
| Inputs | |
| Safety Inputs | 1 N.C. or 2 N.C. or 3 N.C. or 1 N.C. + 1 N.O. or SM |
| Input Simultaneity | Infinite |
| Input Resistance, Max. | 900 Ω |
| Reset | See base unit |
| Power On Delay/ Recovery Time | See base unit |
| Response Time | See base unit |
| Environmental and Physical Characteristics | |
| Enclosure Type Rating/ Terminal Protection | IP40 (NEMA 1)/ IP20 |
| Operating Temperature [C (F)] | -5...+55 ° (23...131 °) |
| Vibration | 10...55 Hz, 0.35 mm |
| Shock | 10 g, 16 ms, 100 shocks |
| Mounting | 17.5 mm housing, 35 mm DIN Rail |
| Weight [g (lb)] | 90 (0.20) |
| Conductor Size, Max. | 0.2...4 mm ² (24...12 AWG) |

* Usable for ISO 13849-1:2006 and IEC 62061. Data is based on the following assumptions:

- Mission time/Proof test interval of 20 years
- Functional test at least once within six-month period

Product Selection

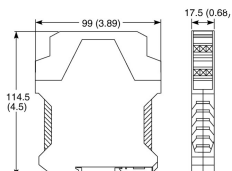
| Inputs | Auxiliary Outputs | Terminals | Reset Type | Power Supply | Cat. No. |
|---|-------------------|-----------|------------|--------------|-------------|
| Two Independent Inputs: 1 N.C., 2 N.C., 3 N.C., 1 N.C. + 1 N.O., or SM | — | Removable | — | 24V DC | 440R-H23178 |

Accessories

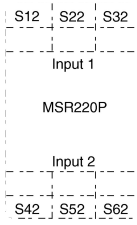
| Description | Cat. No. |
|--|-------------|
| Bag of 4, 3-Pin Screw Terminal Blocks | 440R-A23210 |
| Bag of 4, 3-Pin Spring Clamp Terminal Blocks | 440R-A23229 |

Approximate Dimensions

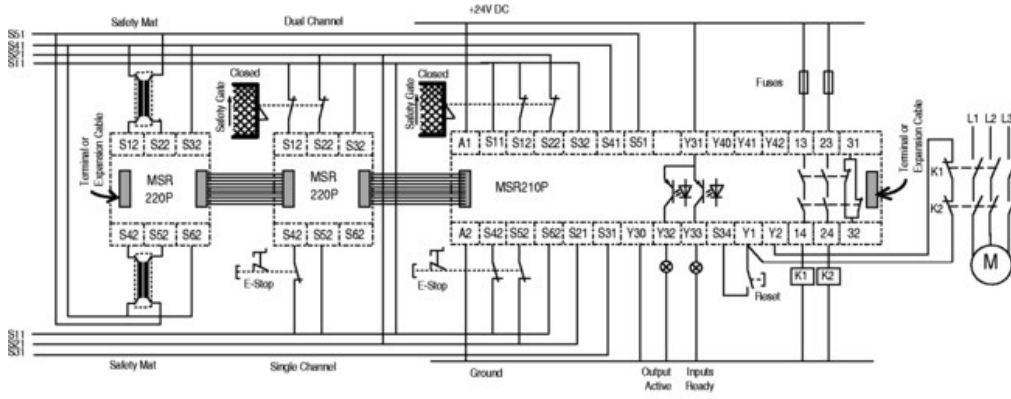
Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.



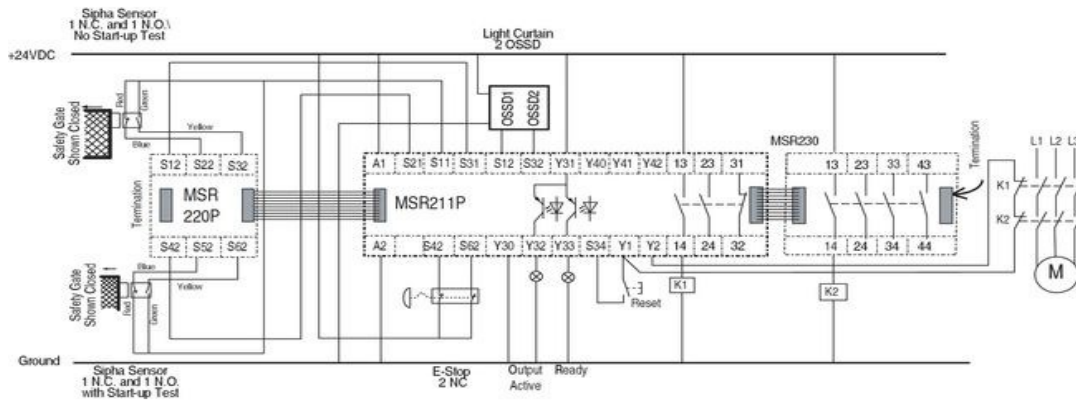
Block Diagram



Typical Wiring Diagrams



MSR220P Expanding an MSR210P



MSR220P Expanding an MSR211P