

MSR221P

Description

The MSR221P 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 MSR221P has two independent inputs, which can be wired in one of three ways: one normally closed, two normally closed, or a light curtain. When connected in the two normally closed configuration, the MSR221P does not perform cross fault monitoring (i.e., checks for shorts between the two inputs).

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

Features

- 17.5 mm DIN Rail housing
- Two input circuits: gate, E-stop or light curtains
- 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 | IEC/EN 60204-1, ISOTR 121100, ISO 13849-1 (EN 954-1), B11.19, AS 4024.1 |
| 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://www.ab.com/safety/ | PFH _D : < 3.7 x 10 ⁻¹⁰ MTTFd: > 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 TÜV |
| 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 LC |
| Input Simultaneity | Infinite |
| Input Resistance, Max. | 1300 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 | 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

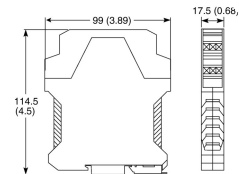
| Inputs | Safety Outputs | Auxiliary Outputs | Terminals | Reset Type | Power Supply | Cat. No. |
|--|----------------|-------------------|-----------|------------|---------------------------|-------------|
| Two Independent Inputs: 1 N.C., 2 N.C., or LC | — | — | Removable | — | 24V DC from the base unit | 440R-H23179 |

Accessories

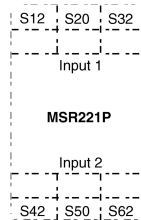
| Description | Cat. No. |
|--|-------------|
| Bag of 4, 3-Pin Screw Terminal Blocks | 440R-A23210 |
| Bag of 4, 3-Pin Spring Clamp Terminal Blocks | 440R-A23229 |

Approximate Dimensions

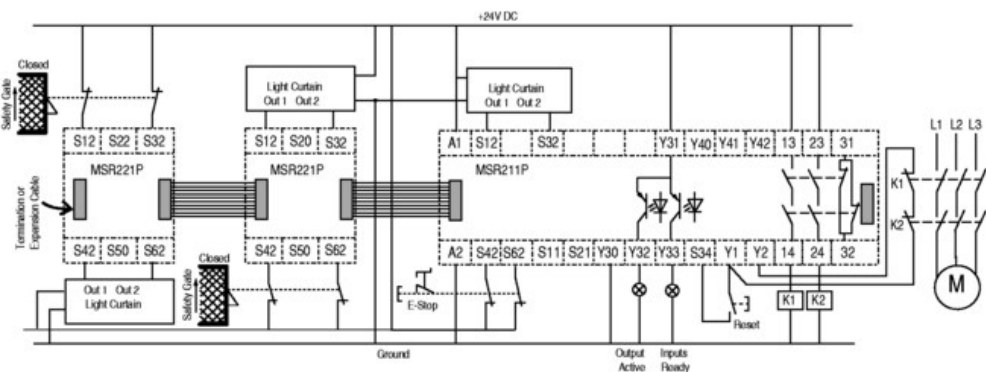
Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.



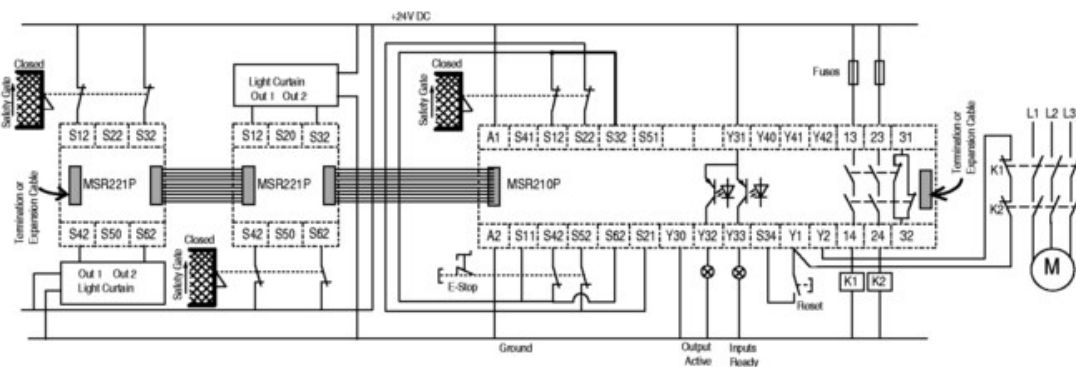
Block Diagram



Typical Wiring Diagrams



Light Curtain, Safety Gate, E-Stop, Monitored Manual Reset, Monitored Output



Light Curtain, Dual Channel Safety Gates and E-Stop, Monitored Manual Reset, Monitored Output