

## Safety Relays

# Modular Monitoring Safety Relays

## Minotaur 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 10 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: 1N.C., 2 N.C. or a light curtain. When connected in the 2 N.C. configuration, the MSR221P does not perform cross fault monitoring (i.e., checks for shorts between the 2 inputs).

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

### Features

- 17.5mm DIN rail housing
- 2 Input circuits: gate, e-stop or light curtains
- 4 Diagnostic LEDs
- Removable terminals

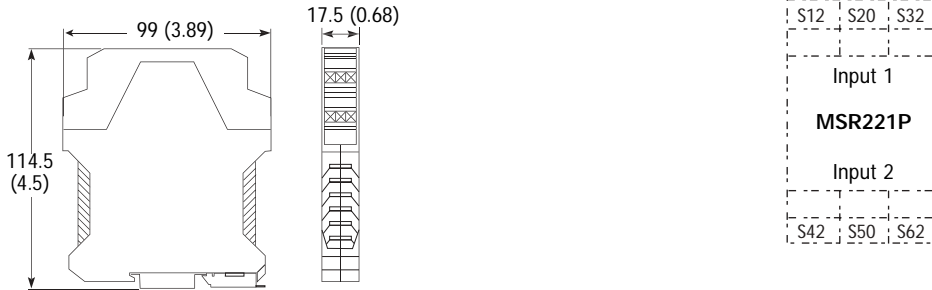
### Specifications

|                                 |  |
|---------------------------------|--|
| Standards                       | IEC/EN60204-1, ISOTR12100, ISO13849-1 (EN 954-1), B11.19, AS4024.1                           |
| Approvals                       | CE marked for all applicable directives, C-Tick, TUV, cULus                                  |
| Power Supply                    | 24V DC from the base unit  |
| Power Consumption               | 2W   |
| Safety Inputs                   | 1 N.C., 2 N.C., Light curtain  |
| Input Simultaneity              | Infinite   |
| Maximum Input Resistance        | 1300ohms   |
| Indication LEDs                 | Green = Input 1 Closed<br>Red = Input 1 Open<br>Green = Input 2 Closed<br>Red = Input 2 Open |
| Impulse Withstand Voltage       | 2500V  |
| Pollution Degree                | 2  |
| Operating Temperature           | -5°C to +55°C (+23°F to 131°F)   |
| Humidity                        | 90%RH  |
| Enclosure Protection            | IP40 (NEMA 1)  |
| Terminal Protection             | IP20   |
| Conductor Size                  | 0.2–4mm <sup>2</sup> (24–12 AWG)   |
| Torque Settings—terminal screws | 0.4–0.5 Nm (3.54–4.43lb•in)  |
| Case Material                   | Polyamide PA 6.6   |
| Mounting                        | 35mm DIN rail  |
| Weight                          | 95g (0.21lbs)  |
| Vibration                       | 10–55 Hz, 0.35mm   |
| Shock                           | 10g, 16ms, 100 shocks  |

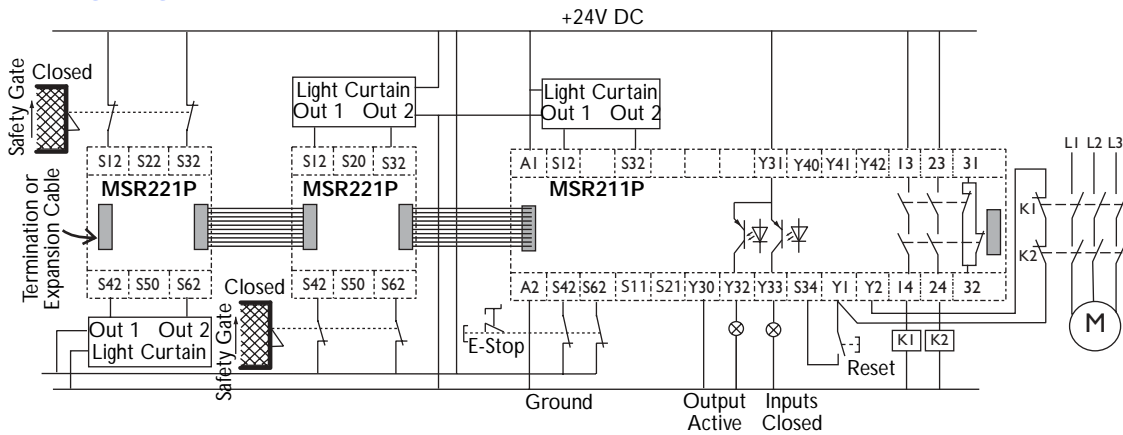
**Product Selection**

| Inputs  | Catalogue Number |
|---|------------------|
| Two Independent Inputs<br>1 N.C. or 2 N.C. or Light Curtain | 440R-H23179      |

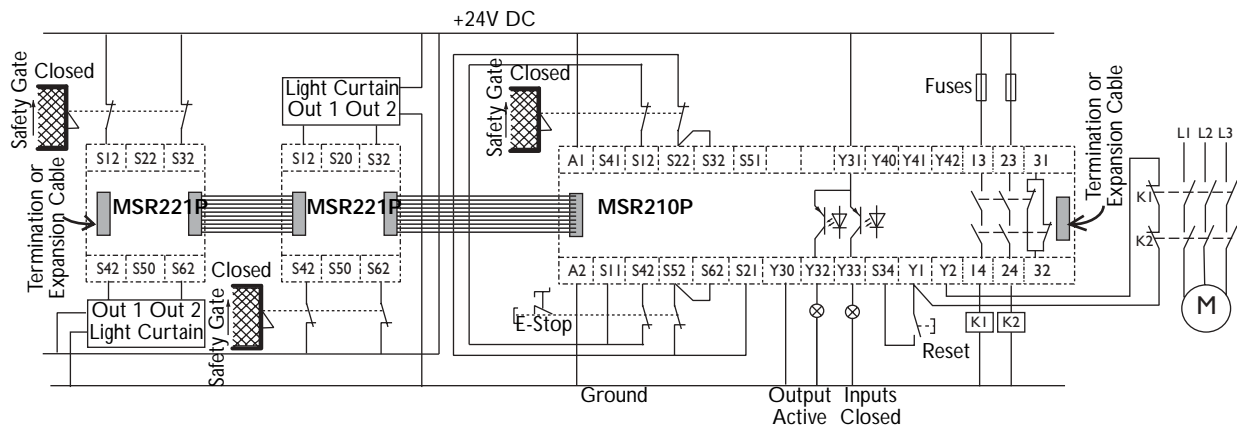
**Dimensions—mm (inches) Block Diagram**



**Typical Wiring Diagrams**



*Safety Mat and Dual Channel E-Stop,  
Monitored Manual Reset, Monitored Output*



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