

## Monitoring Safety Relays

### Minotaur MSR127RP/TP



### Description

The MSR127RTP can be connected in three different input wiring configurations: 1 N.C., 2 N.C., or with 2 PNP connections from a light curtain. When connected in the 2 N.C. fashion, the MSR127RTP checks for cross faults across the two inputs. When connected to light curtains, the light curtain must perform the cross fault detection.

The MSR127RP has a monitored manual reset. The MSR127TP has an automatic/manual reset. Models with automatic/manual reset can have the reset jumpered or can be converted to an unmonitored manual reset by adding a normally open switch in the monitoring loop. Models with monitored manual reset provide checking of the output monitoring circuit.

The outputs include 3 normally open safety rated outputs as well as 1 normally closed auxiliary output. The safety outputs have independent and redundant internal contacts to help ensure the safety function. The auxiliary output is a nonsafety output intended to provide an external signal about the status of the safety outputs.

### Features

- Category 4 per EN 954-1
- Stop category 0
- 3 Safety contacts
- 1 Auxiliary contact
- Cross fault monitoring
- Monitored or automatic reset
- Removable terminals
- Light curtain, E-Stop or safety gate applications

### Specifications

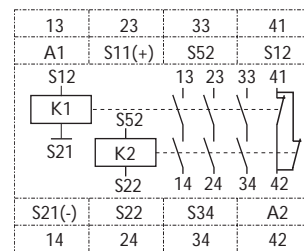
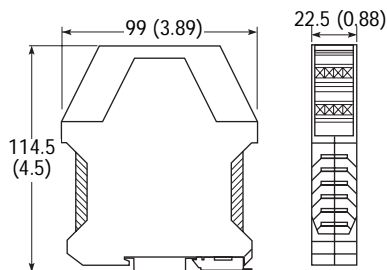
Standards	EN954-1, ISO13849-1, IEC/EN60204-1, IEC60947-4-1, IEC60947-5-1, ANSI B11.19, AS4024.1
Category	Cat. 4 per EN 954-1 (ISO 13849-1)
Approvals	CE marked for all applicable directives, cULus and BG
Power Supply	24V AC/DC, 115V AC or 230V AC 0.8 to 1.1 x rated voltage, 50/60Hz
Power Consumption	2W
Safety Inputs	1 N.C. or 2 N.C. or 2 PNP (light curtain)
Input Simultaneity	Infinite
Max. Allowable Input Resistance	110 ohms
Reset	Monitored Manual or Auto./Manual
Outputs	3 N.O. Safety; 1 N.C. Auxiliary
Output Utilization per IEC 60947-4-1 (Resistive)	AC-1: 5A/250V AC DC-1: 5A/24V DC
Output Utilization per IEC 60947-5-1 (Inductive)	B300, AC-15: 5A/250V AC, 5A/125V AC P300, DC-13: 3A/24V DC 5A/24V DC @ 6 ops/min
Thermal Current (non switching) Units with 24V AC/DC supply: Units with 115/230V AC supply:	3x4A or 2x5A 3x3A or 2x4A or 1x5A
Fuses Output (external)	6A Slow Blow or 10A Quick Blow
Min. Switched Current/Voltage	10mA/10V
Contact Material	AgSnO <sub>2</sub> + 0.5mAu
Power On Delay	1s
Response Time	15ms
Recovery Time	100ms
Indication LEDs	Green = Power Green = CH1 Closed Green = CH2 Closed
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
Maximum Conductor Size	0.2 to 4mm <sup>2</sup> (24-12AWG)
Torque Settings—term. screws	0.4Nm (3.54lb·in)
Case Material	Polyamide PA 6.6
Mounting	35mm DIN rail
Weight 24V DC 110V AC or 230V AC	210g (0.463lbs) 260g (0.573lbs)
Electrical Life (w/Surge Supp.) 250V AC/6A/1500VA cosφ=1 250V AC/2.5A/625VA cosφ=1 250V AC/1.5A/375VA cosφ=0.35 250V AC/5A/1250VA cosφ=0.6 24V DC/2A/48W 10V DC/0.01A/0.1W	100,000 operations 500,000 operations 300,000 operations 100,000 operations 1,000,000 operations 2,000,000 operations
Mechanical Life	2,000,000 operations
Vibration	10-55Hz, 0.35mm
Shock	10g, 16ms, 100 shocks

See Output Ratings on page 1-29 for details. Consult factory for ratings not shown.

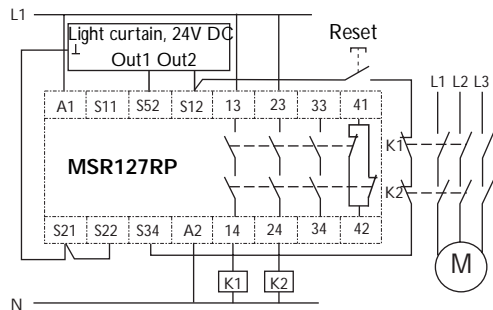
**Product Selection**

Inputs	Safety Outputs	Auxiliary Outputs	Terminals	Power Supply	Type	Reset	Catalogue Number
1NC, 2NC, or Light Curtain	3 N.O.	1 N.C.	Fixed	24V AC/DC	MSR127T	Automatic/Manual	<b>440R-N23126</b>
					MSR127R	Monitored Manual	<b>440R-N23129</b>
				115V AC	MSR127T	Automatic/Manual	<b>440R-N23125</b>
					MSR127R	Monitored Manual	<b>440R-N23128</b>
				230V AC	MSR127T	Automatic/Manual	<b>440R-N23124</b>
					MSR127R	Monitored Manual	<b>440R-N23127</b>
			Removable	24V AC/DC	MSR127TP	Automatic/Manual	<b>440R-N23132</b>
					MSR127RP	Monitored Manual	<b>440R-N23135</b>
				115V AC	MSR127TP	Automatic/Manual	<b>440R-N23131</b>
					MSR127RP	Monitored Manual	<b>440R-N23134</b>
				230V AC	MSR127TP	Automatic/Manual	<b>440R-N23130</b>
					MSR127RP	Monitored Manual	<b>440R-N23133</b>

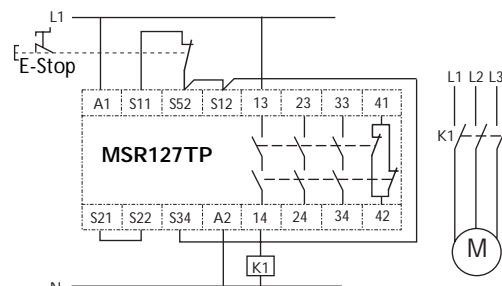
**Dimensions—mm (inches) Block Diagram**



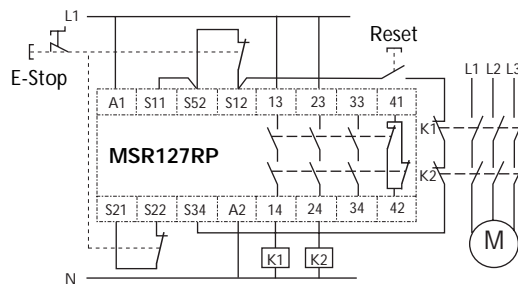
**Typical Wiring Diagrams**



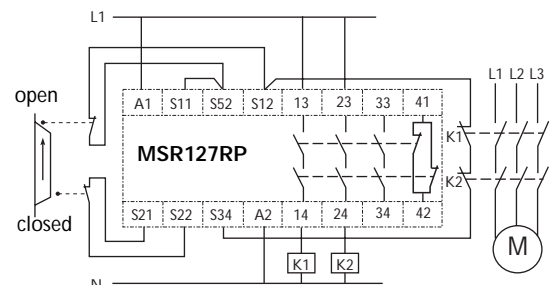
*Light Curtain, Monitored Manual Reset,  
Monitored Output*



*Single Channel E-Stop, Automatic Reset,  
No Output Monitoring*



*Dual Channel E-Stop, Monitored  
Manual Reset, Monitored Output*



*Dual Channel Safety Gates,  
Automatic Reset, Monitored Output*