

# Monitoring Safety Relays

## Minotaur MSR124RT



### Description

The Allen-Bradley Guardmaster Minotaur MSR124RT is a safety monitoring relay that provides versatile inputs and monitoring capability with a large number of safety outputs in a 100mm package.

The MSR124RT can be connected as either a single or dual channel safety gate or e-stop, or can be connected to a light curtain that provides cross fault detection.

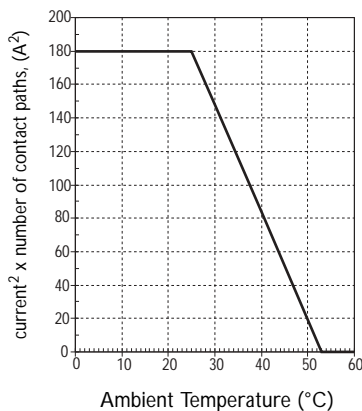
Reset and output monitoring are determined by the wiring configuration. Automatic/manual reset can use a jumper or can be used to check operation of the contacts. Monitored manual requires the use of a manually operated normally open momentary switch to activate the outputs.

The outputs include 5 normally open safety rated outputs and 1 auxiliary output. The safety outputs have independent and redundant internal contacts to help ensure the safety function. The auxiliary output is not safety rated and shall only be used for indication purposes.

### Features

- Category 4 per EN 954-1
- Stop category 0
- 5 Safety contacts N.O.
- Single/dual channel operation
- Cross fault monitoring
- Monitored or automatic reset
- E-stop, safety gate or light curtain applications

### Contact Current Limit Curve



### Specifications

Standards	EN 954-1, ISO 13849-1, IEC/EN 60204-1, IEC 60947-4-1, IEC 60947-5-1, ANSI B11.19, AS4024.1
Category	Cat. 4 per EN 954-1 (ISO 13849-1)
Approvals	C-Tick, CE marked for all applicable directives, cULus & BG
Power Supply	24V AC/DC, 115/230V AC 0.8 – 1.1 x rated voltage, 50/60Hz (0.85 – 1.1 x 24V DC)
Power Consumption	3W
Safety Inputs	1 N.C., 2 N.C. or Light Curtain
Input Simultaneity	Infinite
Max. Allowable Input Resistance	50 ohms
Reset	Auto./Manual or Monitored Manual
Outputs	5 N.O. Safety; 1 N.C. Auxiliary
Output Rating	B300, AC-15, 4A/250V AC N300, DC-13, 2A/24V DC
Output Utilization per IEC 60947-4-1 (Resistive)	AC-1: 10A/250V AC DC-1: 10A/24V DC
Output Utilization per IEC 60947-5-1 (Inductive)	A300, AC-15 5A/250V AC, 5A/125V AC 2A/250V AC, 2A/125V AC N300, DC-13 4A/24V DC 10A/24V DC @ 6 ops/min
Thermal Current (non switching)	See limit curve Max 10A in one circuit
Fuses Output (external)	6A slow blow or 10A quick blow
Contact Material	AgSnO <sub>2</sub> + 0.5µAu
Min. Switched Current/Voltage	10mA/10V
Power On Delay	1s
Response Time	20ms
Recovery Time	100ms
Indication LEDs	Green = Power on Green = K1 Closed Green = K2 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
Conductor Size	0.2-4mm <sup>2</sup> (24-12AWG)
Installation Group	C in accordance with VDE 0110
Pollution Degree	2
Mounting	35mm DIN rail
Weight 24V DC	550g (1.21lbs)
110 and 230V AC	710g (1.57lbs)
Electrical Life	220V AC/4A/880VA/cosφ=0.35 220V AC/1.7A/375VA/cosφ=0.6 30V DC/2A/60W 10V DC/0.01A/0.1W
100,000 operations	
500,000 operations	
1,000,000 operations	
2,000,000 operations	
Mechanical Life	2,000,000 operations
Vibration	10g 10-55Hz
Shock	10g, 16ms 100 shocks

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

# Safety Relays

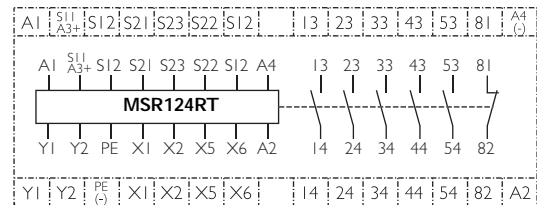
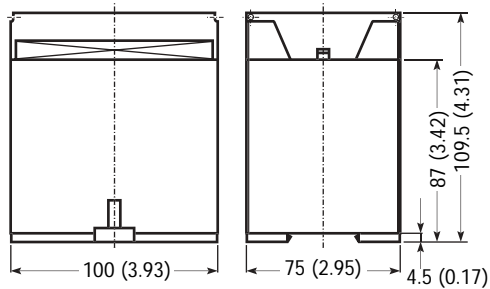
## Monitoring Safety Relays

### Minotaur MSR124RT

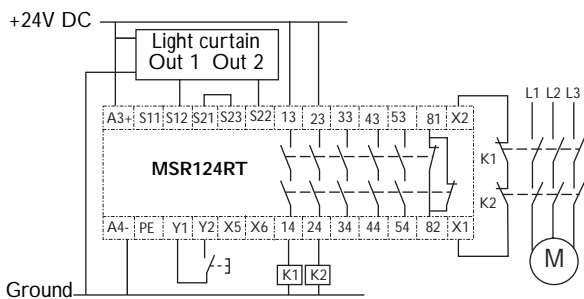
#### Product Selection

Inputs	Safety Outputs	Auxiliary Outputs	Power Supply	Catalogue Number
1 N.C., 2 N.C. or Light Curtain	5 N.O.	1 N.C.	24V AC/DC	440R-G23110
			115V AC/24V DC	440R-G23108
			230V AC/24V DC	440R-G23107

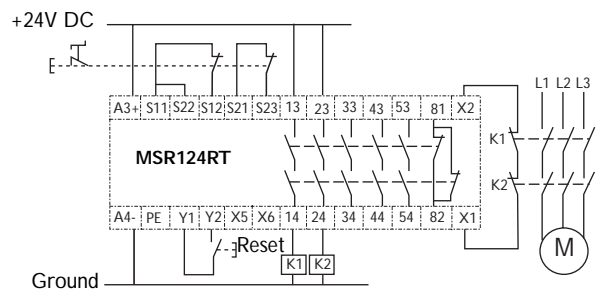
#### Dimensions—mm (inches) Block Diagram



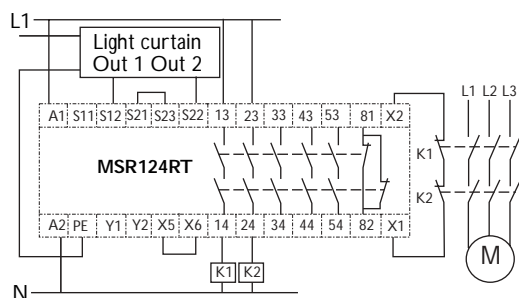
#### Typical Wiring Diagrams



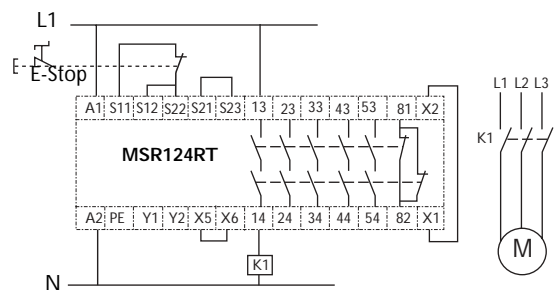
*115/230V Supply, 24V DC Light Curtain, Monitored Manual Reset, Monitored Output*



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



*115/230V Supply, 24V DC Light Curtain, Automatic Reset, Monitored Output*



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