

Monitoring Safety Relays

Minotaur MSR123RT



Description

The Allen-Bradley Guardmaster Minotaur MSR123RT is a safety monitoring relay that provides two normally open safety contacts and a solid state auxiliary output for use with interfacing to PLCs.

The MSR123RT can be connected to either a single or dual channel safety gate or e-stop, or can be connected to a light curtain that provides cross fault detection.

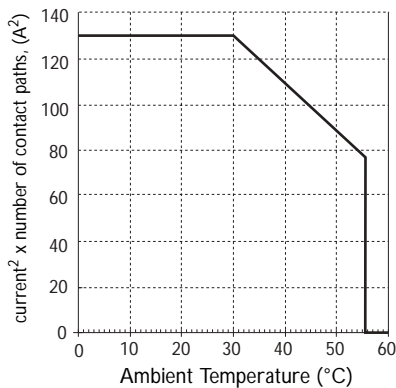
Reset and output monitoring is determined by the wiring configuration. Automatic/manual reset can use a jumper or can be used to check operation of external contactors. Monitored manual requires the use of a manually operated normally open momentary switch.

The MSR123RT has 2 normally open safety rated outputs. The safety outputs have independent and redundant internal contacts to help ensure the safety function. The solid state auxiliary output is a PNP circuit with short circuit protection designed to indicate the status of the MSR123RT.

Features

- Category 4 per EN 954-1
- Stop category 0
- 2 Safety contacts N.O.
- 1 Solid state PNP auxiliary contact
- 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 EN954-1
Approvals	C-Tick, CE marked for all applicable directives, cULus and BG
Power Supply	24V AC/DC, 115/230V AC 0.8 – 1.1 x rated voltage, 50/60Hz 0.9 – 1.1 x 24V DC
Power Consumption	4W
Safety Inputs	1N.C., 2 N.C., Light Curtain
Input Simultaneity	Infinite
Max. Allowable Input Resistance	240 ohms
Reset	Auto./Manual or Monitored Manual
Outputs	2 N. O. Safety, 1 S.S. PNP Aux.
Output Utilization per IEC 60947-4-1 (Resistive)	AC-1: 8A/250V AC DC-1: 8A/24V DC
● Output Utilization per IEC 60947-5-1 (Inductive)	A300, AC-15 6A/250V AC, 6A/125V AC N300, DC-13: 3A/24V DC; 6A/24V DC @ 6 ops/min
Thermal Current (non switching)	See limit curve Max 10A in one circuit
Output, Solid State	20mA @ 24V DC
Fuses, output external	6A slow blow or 10A quick blow
Min. Switched Current/Voltage	10mA/10V
Contact Material	AgSnO ₂ + 0.5μAu
Power On Delay	1s
Response Time	15ms
Recovery Time	100ms
Indication LEDs	Green = Power on Green = K1 Closed Green = K2 Closed
Impulse Withstand Voltage	2500V
Operating Temperature	-5°C to +55°C (+23°F to +131°F)
Humidity	90% RH
Enclosure Protection	IP40 (NEMA 1), DIN 0470
Terminal Protection	IP20, DIN 0470
Short Circuit Protection	Solid state outputs
Pollution Degree	2
Conductor Size	0.2-4mm ² (24-12AWG)
Mounting	35mm DIN rail
Weight 24V DC 110 and 230V AC	270g (0.353lbs) 350g (0.474lbs)
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	10-55Hz, 0.35mm
Shock	10g, 16ms, 100 shocks

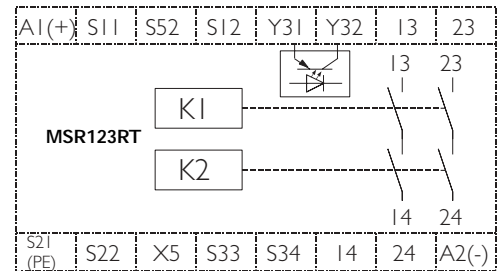
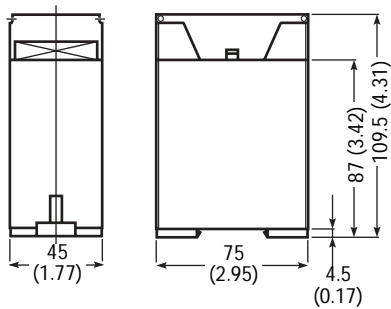
● See Output Ratings on page 1-29 for details. Consult factory for ratings not shown.

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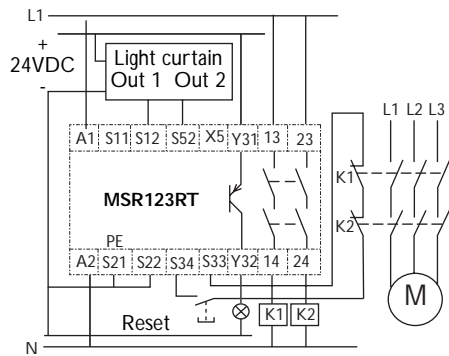
Product Selection

Inputs	Safety Outputs	Auxiliary Outputs	Power Supply	Catalogue Number
1 N.C., 2 N.C. or Light Curtain	2 N.O.	1 S.S. PNP	24V AC/DC	440R-J23106
			115V AC	440R-J23104
			230V AC	440R-J23103

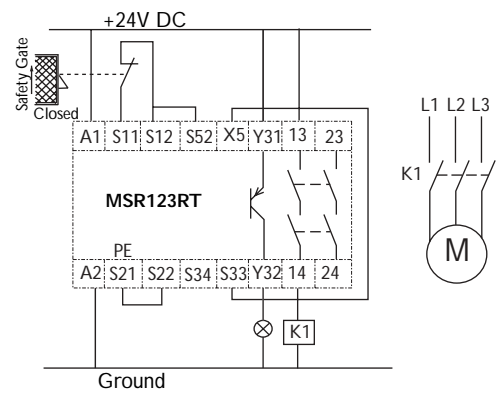
Dimensions—mm (inches) Block Diagram



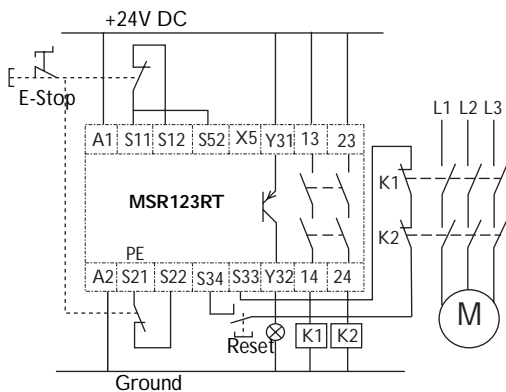
Typical Wiring Diagrams



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



Single Channel Safety Gate, Automatic Reset, No Output Monitoring



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