

# MSR124RT

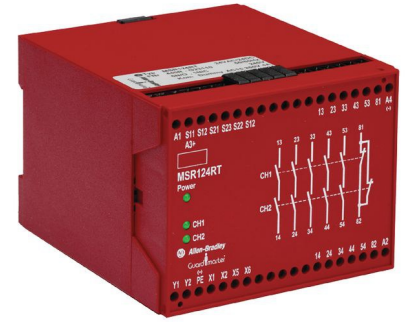
## Description

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.



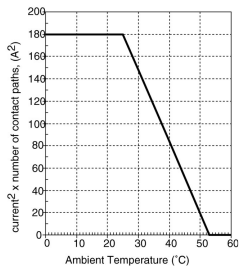
## Features

- 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

## LED Indicators

Green	Power On
Green	Output On

## Contact Current Limit Curve



## Specifications

Safety Ratings		
Standards	EN 954-1, ISO 13849-1, IEC/EN 60204-1, IEC 60947-4-1, IEC 60947-5-1, ANSI B11.19, AS4024.1	
Safety Classification	Cat. 4 per EN 954-1 (ISO 13849-1)	
Functional Safety Data * Note: For up-to-date information, visit <a href="http://www.ab.com/safety/">http://www.ab.com/safety/</a>	PFH <sub>D</sub> : < 2.5 x 10 <sup>-9</sup> MTTF <sub>d</sub> : > 45662 years Suitable for performance levels Pl <sub>e</sub> (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 BG	
Power Supply		
Input Power Entry	—	
Power Consumption	3 W	
Inputs		
Safety Inputs	1 N.C., 2 N.C., or LC	
Input Simultaneity	Infinite	
Input Resistance, Max.	50 Ω	
Reset	—	
Power On Delay/Recovery Time	1 second/1 second	
Response Time	20 ms	
Outputs		
Safety Contacts	—	
Auxiliary Contacts	—	
Thermal Current $I_{Ith}$	Nonswitching—See limit curve, max 10 A in one current path	
Rated Impulse withstand Voltage $I_{Ith}$	2500V	
Switching Current @ Voltage, Min.	10 mA/10V	
Fuses, Output (External)	External 6 A slow-blow or 10 A fast acting	
Electrical Life (Operations)	220V AC/4A/880VA $\cos\phi = 0.35$ - 100,000 operations 220V AC/1.7A/375VA $\cos\phi = 0.6$ - 500,000 operations 30V DC/2A/60W - 1,000,000 operations 10V DC/0.01A/0.1W - 2,000,000 operations	
Mechanical Life	2,000,000 operations	
Utilization Category		
Resistive: AC-1	10 A/250V AC	
Resistive: DC-1	10 A/24V DC	
Inductive: AC-15	4 A/250V AC	4 A/125V AC
Inductive: DC-13	2 A/24V DC	10 A/24V DC @ 6 ops/min
Environmental		
Enclosure Type Rating/ Terminal Protection	IP40 (NEMA 1)/ IP 20	
Operating Temperature [C (F)]	-5...55° (23...131°)	
Vibration	10...55 Hz, 0.35 mm	
Shock	10 g, 16 ms, 100 shocks	
Physical Characteristics		
Mounting	35 mm DIN Rail	
Weight [g (lb)]	24V DC: 550 (1.21) 110 and 230V AC: 710 (1.57)	
Conductor Size, Max.	—	

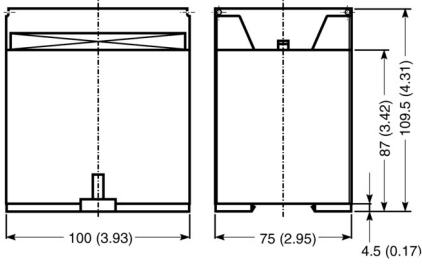
\* Usable for ISO 13849-1:2006 and IEC 62061. Data is based on the following assumptions:  
- Mission time/Proof test interval of 20 years  
- Power cycled once per 8 hrs

## Product Selection

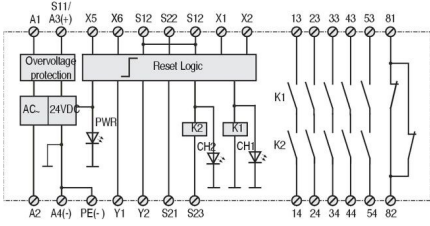
Inputs	Safety Outputs	Auxiliary Outputs	Terminals	Reset Type	Power Supply	Cat. No.
1 N.C., 2 N.C., Light Curtain	5 N.O.	1 N.C.	Fixed	Auto/Manual or Monitored Manual	24/115/230V AC 0.8 x 1.1 x rated voltage, 50/60 Hz (0.85 - 1.1 x 24V DC)	440R-G23110
					115V AC 24V DC	440R-G23108
					230V AC/24V DC	440R-G23107

## Approximate Dimensions

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

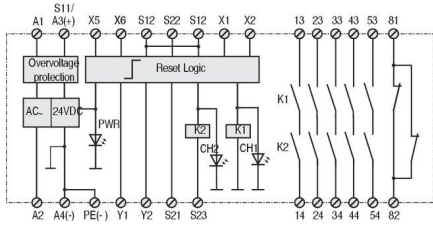


## Block Diagram



AC Supply via A1...A2,

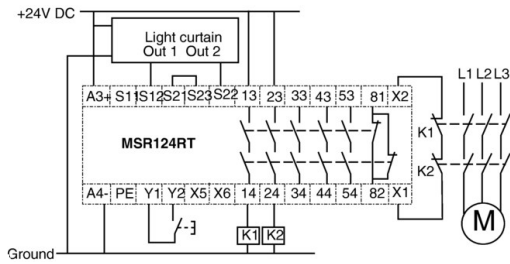
24V DC Supply via A3...A4



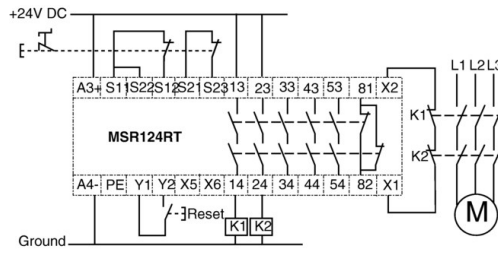
AC Supply via A1...A2,

24V DC Supply via A3...A4

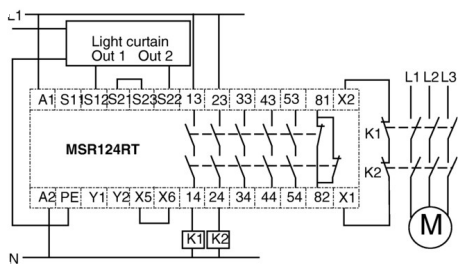
## Typical Wiring Diagrams



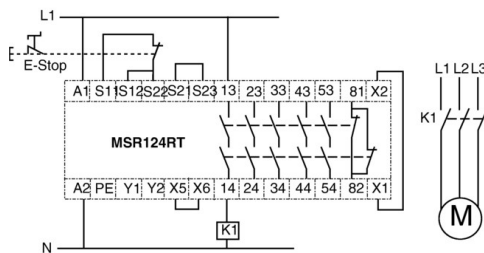
115/230V Supply, 24V DC Light Curtain,  
Monitored Manual Reset, Monitored Output



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

