

## Safety Relays

# Monitoring Safety Relays

## Minotaur MSR5T



### Description

The MSR5T has 1 N.C. single channel input for use with gate interlocks and emergency stop buttons in lower risk applications.

The MSR5T has output monitoring that can accommodate an automatic/manual reset function. Automatic/manual reset can use a jumper or can be used to check operation of the contacts.

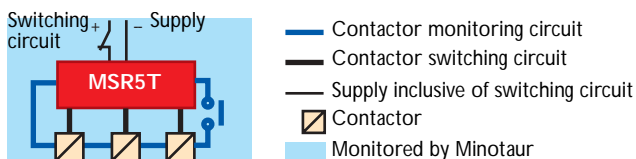
The MSR5T has 3 N.O. safety outputs and 1 N.C. auxiliary output. The safety outputs have independent and redundant internal contacts to help ensure the safety function. The auxiliary contact is a nonsafety output intended to provide an external signal about the status of the safety outputs.

The Minotaur power supply converts either 110V AC or 230V AC to 24V DC. It is intended to be used with an MSR5T or a Ferrotek noncontact interlock. When used with the MSR5T, the Minotaur power supply acts like a 110V AC (230V AC) input module allowing a single channel 110V AC (230V AC) circuit to be wired directly into a safety circuit.

### Features

- Category 4 per EN 954-1
- Stop category 0
- Single channel input
- 3 N.O. safety outputs
- 1 N.C. auxiliary output
- 22.5mm wide housing
- Optional 110/230V AC input module

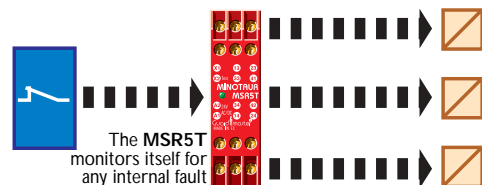
### Applications



### Specifications

Standards	EN 954-1, ISO13849-1, IEC/EN 60204-1, IEC 60947-5-1, ANSI B11.19, AS4024.1
Category	Cat. 4 per EN 954-1
Approvals	C-Tick, CE marked for all applicable directives, cULus and TUV
Power Supply	24V AC/DC±15% 50/60Hz
Power Consumption	<4VA
Safety Inputs	1 N.C.
Maximum Input Resistance	200 Ω
Reset	Automatic/Manual
Outputs	3 N.O. Safety; 1 N.C. Auxiliary
① Output Utilization per IEC 60947-5-1 (Inductive)	B300 AC-15 4A/250V AC, 4A/120V AC P300 DC-13 3A/24V DC
Thermal Current (non switching)	4A
Fuses, output	5A quick acting
Min. Switched Current/Voltage	10mA/10V
Maximum Dropout Time	90ms
Indication LEDs	Green = Output
Impulse Withstand Voltage	2500V
Installation Group	C in accordance with VDE 0110
Pollution Degree	3
Operating Temperature	-10°C to +55°C (+14°F to +131°F)
Humidity	90% RH
Enclosure Protection	IP40, (NEMA 1), DIN 0470
Terminal Protection	IP20, DIN 0470
Conductor Size	1 x 2.5mm <sup>2</sup> (14AWG) stranded, 1 x 4mm <sup>2</sup> (12AWG) solid
Torque Settings—terminal screws	1N·m (8.85lb-in)
Case Material	Red Polycarbonate
Mounting	35mm DIN rail
Weight	210g (0.46lbs)
Electrical Life	220V AC/4A/880VA cosφ=0.35 100,000 operations 220V AC/1.7A/375VA cosφ = 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
Vibration	0.75mm (0.30in) peak, 10-55Hz
Shock	30g, 11ms half sine

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



The safety function is ensured by the Minotaur  
 The MSR5T monitors itself for any internal fault  
 Contactors: Provides contactor monitoring if two or more contactors are used

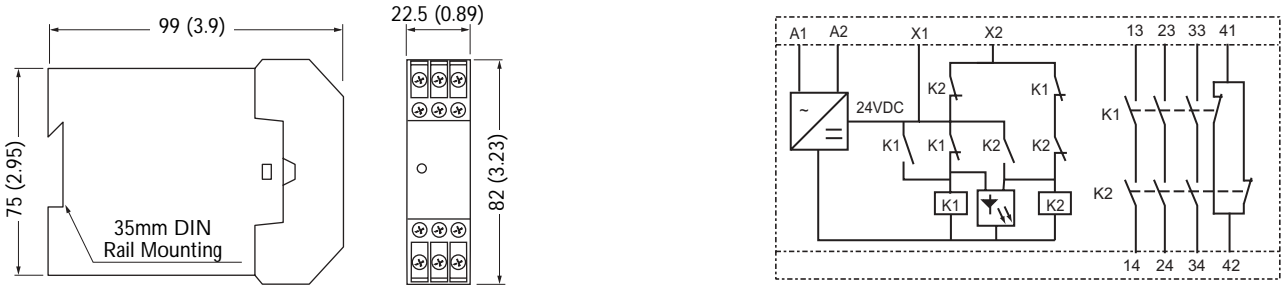
**Product Selection**

Inputs	Safety Outputs	Auxiliary Outputs	Power Supply	Catalogue Number
1 N.C.	3 N.O.	1 N.C.	24V AC/DC	440R-B23020

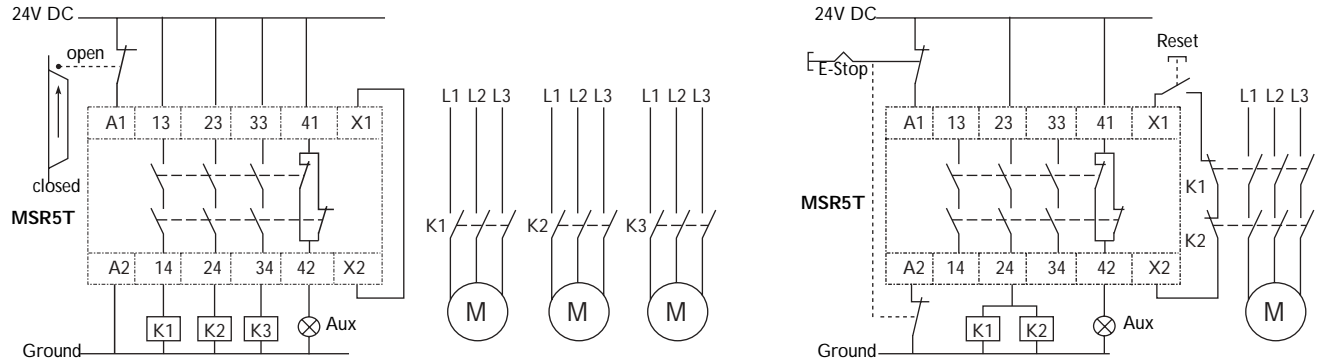
**Accessories**

Description	Page Number	Catalogue Number
110/230V AC Power Supply Unit	4-8	440R-A32003
500mA Fuse	14-6	440R-A31562

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



**Typical Wiring Diagrams**



*Single-Channel Gate Interlock, Automatic Reset,  
Single-Channel Output, No Monitored Output*

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