

# Monitoring Safety Relays

## Minotaur MSR18T



### Description

The Minotaur MSR18T is a monitoring safety relay unit with dual channel input, 5 safety outputs and 2 auxiliary outputs. It is designed for operation as E-Stop, safety gate applications, and 2-hand control applications.

The MSR18T is a versatile unit with extensive diagnostics. It can be used with E-Stop buttons, gate interlocks, two-hand controls as well as expansion relays when additional inputs are needed.

When used in a suitably configured circuit, the MSR18T provides additional safety rated output circuits with checking and monitoring of its status. Safety critical faults or power failures will cause them to initiate a lock-out to a safe state.

### Features

- Category 4 per EN 954-1
- Stop category 0
- 24V AC/DC and 110V AC or 240V AC
- Dual channel inputs
- 5 N.O. safety outputs
- 2 N.C. auxiliary outputs
- E-Stop and gate applications
- 2-hand control applications
- 5 LEDs for comprehensive diagnostics

### Specifications

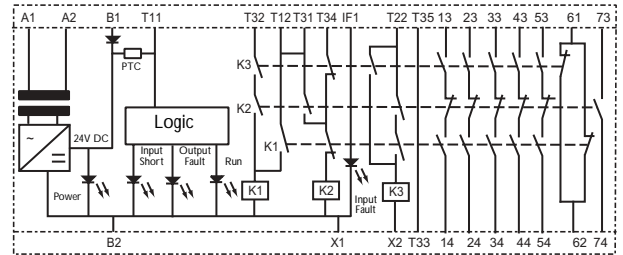
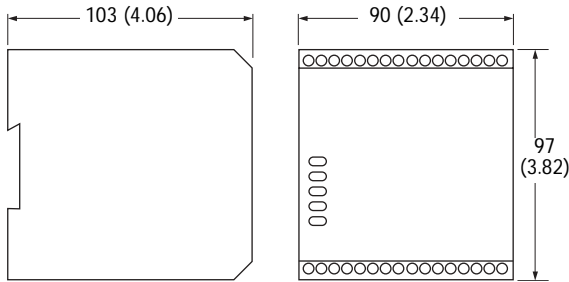
Standards	EN 954-1, ISO13849-1, IEC/EN 60204-1, IEC 60947-5-1, ANSI B11.19, AS4024.1, EN 574
Category	Cat. 4 per EN 954-1 (ISO 13849-1)
Approvals	CE marked for all applicable directives, cULus & TÜV
Power Supply AZ1 and AZ2	24V AC/DC -20%, +10% 120V AC -15%, +10% 240V AC -15%, +10%
Power Consump. 24V AC/DC 120V and 240V AC	3.6W 6.1VA, 5.7W
Safety Inputs	1 N.C. or 1 N.C. & 1 N.O. or 2 N.C.
Input Simultaneity	0.5 seconds
Maximum Input Resistance	100Ω
Reset	Automatic/Man. or Monitored Man.
Outputs	5 N.O. Safety; 2 N.C. Auxiliary
① Output Utilization per IEC 60947-5-1 (Inductive)	C300 AC-15 0.75A/250V AC, 1.5A/120V AC Q300 DC-13 2A/24V DC
Thermal Current (non switching)	1 x 8A, 2 x 7A, 3 x 5.5A, 4 x 5A, 5 x 4.5A
Fuses Input (internal elect.) Output (external)	20s reset time 1.6 slow blow
Min. Switched Current/Voltage	24V AC/DC, 20mA
Maximum Dropout Time	20ms
Indication LEDs	Red = Input Short Green = Power Green = Run Red = Input Fault Red = Output Fault
Impulse Withstand Voltage	3000V
Installation Group	C in accordance with VDE 0110
Pollution Degree	2
Operating Temperature	-25°C to +55°C (-13°F to +131°F)
Humidity	95% RH
Enclosure Protection	IP40, (NEMA 1), DIN 0470
Terminal Protection	IP20, DIN 0470
Conductor Size	1 x 2.5mm <sup>2</sup> (14AWG)
Torque Settings—term. screws	0.8N·m (7lb-in)
Case Material	Red Polyester PBT
Mounting	35mm DIN rail
Weight	395g (0.87lbs)
Electrical Life	222V AC/4A/880VA cosφ=0.35 220V AC/1.7A/375VA cosφ=0.6 30V DC/2A/60W 10V DC/0.01A/0.1W
Mechanical Life	5,000,000 operations
Vibration	0.75mm (0.30in) peak, 10-55Hz
Shock	5g, 11ms half sine

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

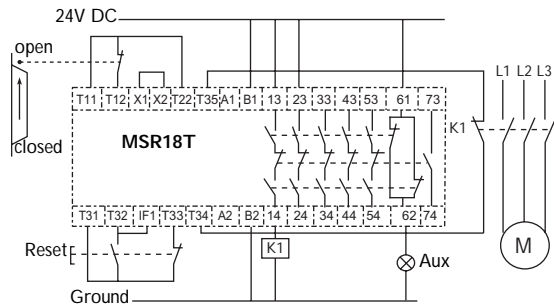
**Product Selection**

Inputs	Safety Outputs	Auxiliary Output	Power Supply	Catalogue Number
1 N.C. or 1 N.C. & 1 N.O. or 2 N.C.	5 N.O.	2 N.C.	24V AC/DC and 120V AC	440R-ZBR520AZ1
			24V AC/DC and 240V AC	440R-ZBR520AZ2

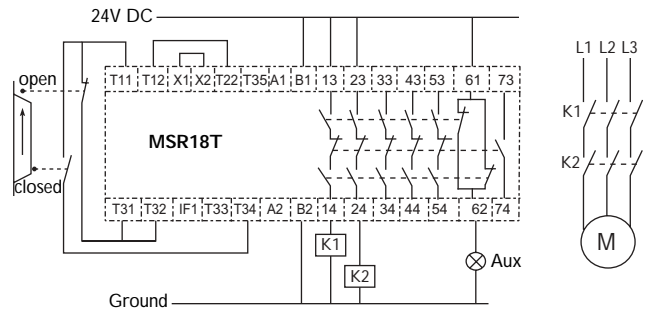
**Dimensions—mm (inches) Block Diagram**



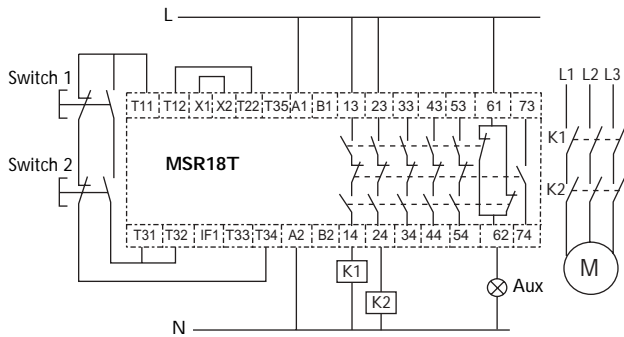
**Typical Wiring Diagrams**



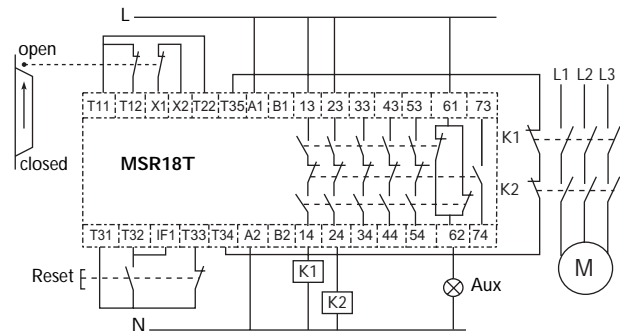
*Single-Channel Input, Monitored Manual Reset,  
Single-Channel Output, Monitored Output*



*Dual-Channel Input 1 N.O. & 1 N.C., Automatic Reset,  
Dual-Channel Output, No Monitored Output*



*Two-Hand Control, Automatic Reset,  
Dual-Channel Output, No Monitored Output*



*Dual-Channel Input (2 N.C.), Monitored Manual  
Reset, Dual-Channel Output, Monitored Output*