Monitoring Safety Relays

Minotaur MSR9T



Description

The MSR9T has 1 N.C. and 1 N.O. dual channel input for use with gate interlocks and emergency stop buttons in higher risk applications. The MSR9T is typically used for gate interlocks incorporating the diversity of one positive opening and one non positive opening interlock.

The MSR9T has output monitoring that can accommodate an automatic/manual reset. Automatic/manual reset can use a jumper or can be used to check operation of the contacts.

The MSR9T has 2 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 an nonsafety output intended to provide an external signal about the status of the safety outputs.

Features

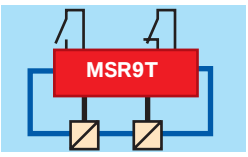
- Category 3 per EN 954-1
- Stop category 0
- 1 N.C. and 1 N.O. dual channel input
- 2 N.O. safety outputs
- 1 N.C. auxiliary output
- Automatic reset
- 45mm wide housing

Specifications

Standards	EN 954-1, ISO13849-1, IEC/EN 60204-1, IEC 60947-5-1, ANSI B11.19, AS4024.1
Category	Cat. 3 per EN 954-1 (ISO 13849-1)
Approvals	C-Tick, CE marked for all applicable directives and cULus
Power Supply	24V AC/DC or 110/230V AC 50/60Hz
Power Consumption	<4VA
Safety Inputs	1 N.C. & 1 N.O.
Input Simultaneity	0.5 seconds
Maximum Input Resistance	500 Ω
Reset	Automatic/Manual
Outputs	2 N.O. Safety; 1 N.C. Auxiliary
❶ 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 Input (internal, replace.) Output (external)	500mA time lag 5A quick acting
Min. Switched Current/Voltage	10mA/10V
Maximum Dropout Time	50ms
Indication LEDs	Red = Power On Green = Output On
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^2 (14AWG) stranded, 1 x 4mm^2 (12AWG) solid
Torque Settings—term. 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 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	0.75mm (0.30in) peak, 10-55Hz
Shock	30g, 11ms half sine

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

Applications



Contactor monitoring circuit
Contactor switching circuit
Supply inclusive of switching circuit
Contactor
Monitored by Minotaur

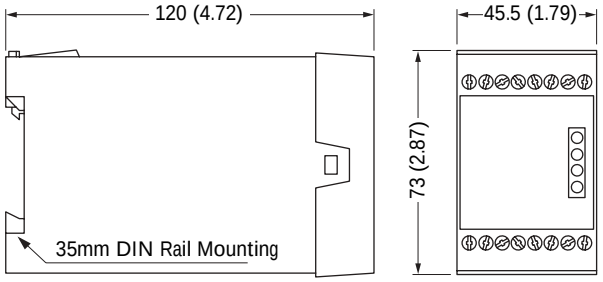
Product Selection

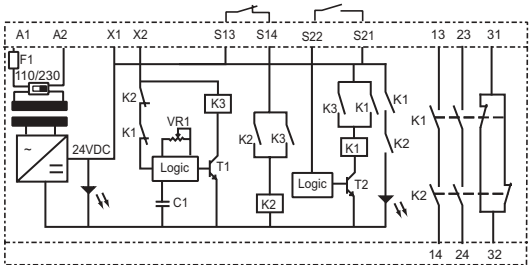
Inputs	Safety Outputs	Auxiliary Outputs	Power Supply	Catalogue Number
1 N.C. & 1 N.O.	2 N.O.	1 N.C.	24V AC/DC	**440R-F23027**
			110/230V AC	**440R-F23028**

Accessories

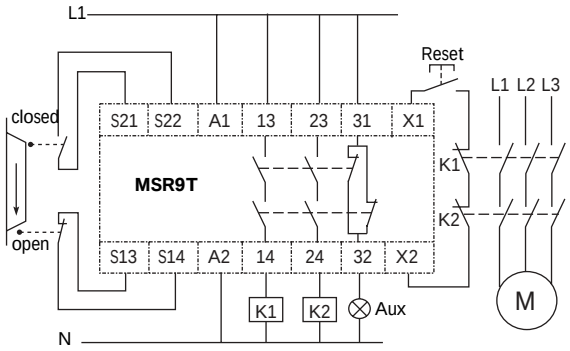
Description	Page Number	Catalogue Number
500mA Fuse	14-6	**440R-A31562**

Dimensions—mm (inches) Block Diagram

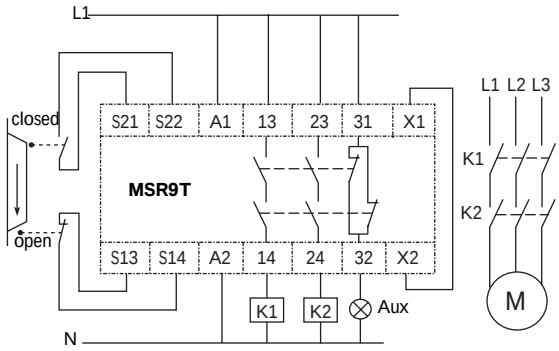




Typical Wiring Diagrams



Dual-Channel Safety Gate, Manual Reset, Dual-Channel Output, Monitored Output



Dual-Channel Safety Gate, Automatic Reset, Dual-Channel Output, No Monitored Output

Application Details

