

Safety Relays

Two Hand Relays

Minotaur MSR7R & MSR7C



Description

The Allen-Bradley Guardmaster Minotaur MSR7R & MSR7C are logic units for monitoring and interfacing two hand control devices with a safety related circuit. The MSR7R is for use with mechanical switches and the Allen-Bradley Bulletin 800Z Zero Force Touch Buttons. The MSR7C is for use with electronic-sensing (for example, capacitive or photoelectric) palm buttons because the MSR7C will not turn its output ON if a power interruption occurs while a person's hands are on the buttons.

The MSR7 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.

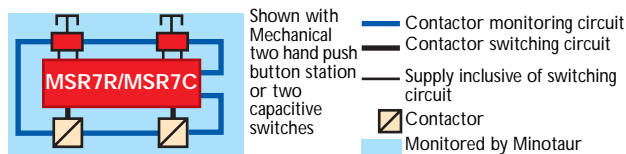
The MSR7 requires the two switches to be operated within 0.5 seconds of each other and will only authorize the ON state while both switches are held down. If one of the switches is released, the output goes to the OFF state and the machine cannot be restarted until both buttons are released and then operated simultaneously.

The MSR7 conforms to EN574 which gives specific requirements for two hand control units and logic devices. Categories IIIB or IIIC are achieved depending upon the wiring.

Features

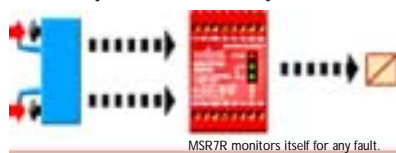
- Safety category 3 per EN 954-1
- Safety category IIb per EN 574
- Two-hand control unit
- 3 N.O. safety outputs
- 1 N.C. auxiliary output
- 45mm wide housing

Applications



The safety function is ensured by the Minotaur.

Switch Circuit: MSR7R monitors for single fault that may cause a danger.



Contactors: Provides contactor monitoring if two or more contactors are used in series.

Specifications

| | |
|---|---|
| Standards | EN574, EN954-1, ISO13849-1, IEC/EN60204-1, IEC60947-5-1, ANSI B11.19, AS4024.1 |
| Category | Cat. 3 per EN 954-1 (ISO 13849-1) Cat. IIb per EN 574 |
| Approvals | C-Tick, CE marked for all applicable directives, cULus & TÜV |
| Power Supply | 24V AC/DC, 110V AC or 230V AC |
| Power Consumption | <4VA |
| Safety Inputs | 1 N.C. & 1 N.O. |
| Input Simultaneity | 0.5s |
| Maximum Input Resistance | 500 W |
| Reset | Automatic |
| Outputs | 3 N.O. Safety; 1 N.C. Auxiliary |
| ● Output Utilization per IEC 60947-5-1 (Inductive) | B300, AC-15 4A/250V AC, 4A/125V AC P300, DC-13; 2A/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 = K1 Closed Green = K2 Closed |
| 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—terminal screws | 1N·m (8.85lb·in) |
| Case Material | Red Polycarbonate |
| Mounting | 35mm DIN rail |
| Weight | 510g (1.12lbs) |
| 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 |

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

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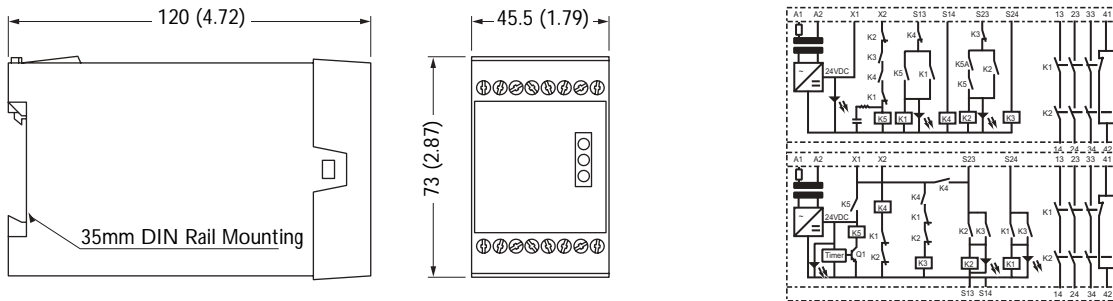
Product Selection

| Minotaur | Inputs | Safety Outputs | Auxiliary Outputs | Input Buttons | Power Supply | Catalogue Number |
|----------|-----------------|----------------|-------------------|-----------------------------|--------------|------------------|
| MSR7R | 1 N.C. & 1 N.O. | 3 N.O. | 1 N.C. | Mechanical or Bulletin 800Z | 24V AC/DC | 440R-D23021 |
| | | | | | 110V AC | 440R-D23022 |
| | | | | | 230V AC | 440R-D23023 |
| MSR7C | 1 N.C. & 1 N.O. | 3 N.O. | 1 N.C. | Capacitive or Photoelectric | 24V AC/DC | 440R-D23024 |
| | | | | | 110V AC | 440R-D23025 |
| | | | | | 230V AC | 440R-D23026 |

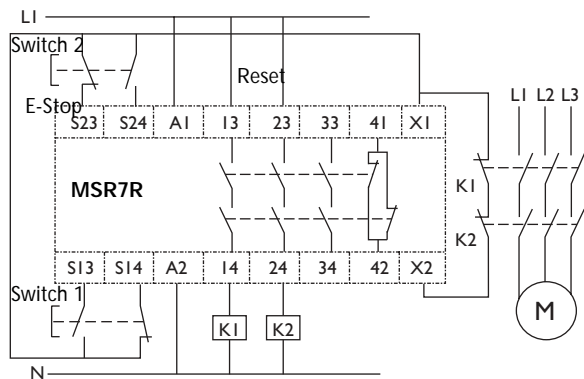
Accessories

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

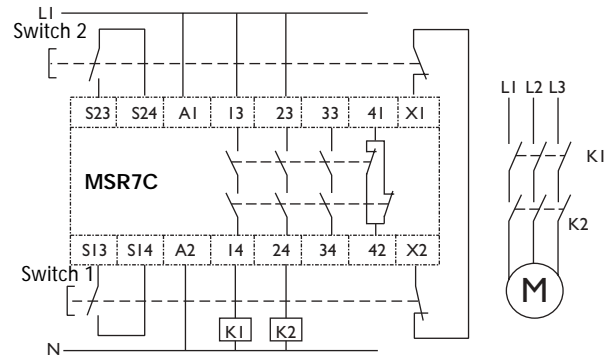
Dimensions—mm (inches) Block Diagram



Typical Wiring Diagrams



Dual Channel Two-Hand Control, Automatic Reset, Dual Channel Output, Monitored Output



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

Application Details

