



**Description**

The MSR23M control unit is designed to monitor 4 wire safety mats that are connected together to form a safeguarded zone. The size of the safeguarded zone is limited by the total input impedance (100 ohms maximum) created by the wiring and connections. The controller is designed to interface with the control circuit of the machine and includes two safety relays to ensure control redundancy.

The controller detects a presence on the mat, a short circuit, or an open circuit. Under each of these conditions, the safety output relays turn off. When interfaced properly, the machine or hazardous motion receives a stop signal, and an auxiliary output turns ON.

**Features**

- Category 4
- Stop category 0
- Removable terminals
- Monitored or automatic reset
- 4-wire safety mats sensing
- Third party approval—BG

**Specifications**

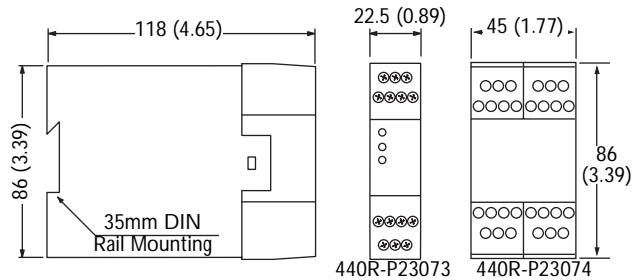
Standards	EN 954-1, ISO 13849-1, IEC EN 60204-1, IEC 60947-5-1, ANSI B11.19, AS 4024.5
Category	Cat. 4 per EN 954-1 (ISO 13849-1)
Approvals	CE marked for all applicable directives, BG and CSA (24V only)
Power Supply	24V AC/DC or 110V AC
Power Consumption	2W
Inputs	2 N.C., 4-wire safety mat
Maximum Input Resistance	100 ohms
Reset	Monitored Man. or Auto./Man.
Outputs	2 N. O. Safety; 1 N.C. Auxiliary
<b>Output Utilization per N.O.</b> IEC 60947-5-1 (Inductive)	B300 AC-15; 3A/250V AC, 3A/125V AC P300 DC-13; 2.5A/24V DC B300 AC-15; 2A/250V AC, 2A/125V AC P300 DC-13; 2A/24V DC
N.C.	
Thermal Current (non switching)	1 x 8A, 2 x 7A
Fuses Input (external)	500mA time delay
Output (external)	6A fast acting
Min. Switched Current/Voltage	1mA/10V
Power ON Delay	40ms
Manual Reset	200ms
Auto Reset	
Response Time	15ms
Indication LEDs	Green=Ready, Red=Mat Activated
Power K1	Green=K1 Closed, If K1 alone, check for short across reset button
K2	Green=K2 Closed
Operating Temperature	-15°C to +55°C (+5°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
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—term. screws	1 N·m (8 lb·in)
Case Material	Red Polycarbonate
Mounting	35mm DIN rail
Weight	220g (0.485lbs)
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
Maximum Operating Frequency	1200 cycles/hour
Mechanical Life	10,000,000 operations
Vibration	10g 10-55Hz
Shock	30g, 11ms half-sine

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

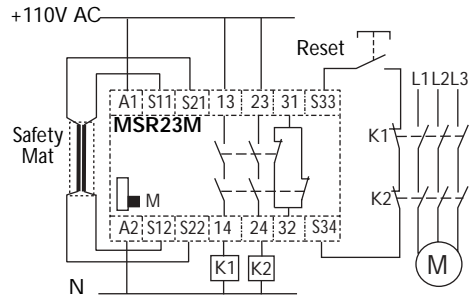
**Product Selection**

Inputs	Safety Outputs	Auxiliary Outputs	Power Supply	Catalogue Number
4-Wire Safety Mat	2 N. O.	1 N. C.	24V AC/DC	440R-P23073
			110V AC	440R-P23074

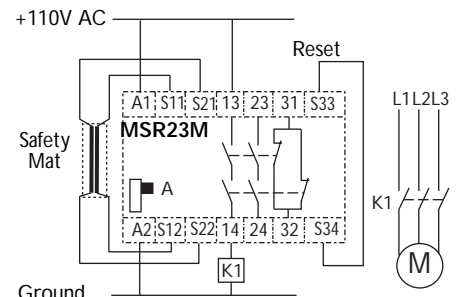
**Dimensions—mm (inches) Block Diagram**



**Typical Wiring Diagrams**



*Safety Mat Input, Monitored Manual Reset,  
 Dual Channel Output, Monitored Output*



*Safety Mat Input, Automatic Reset,  
 Single Channel Output, No Monitored Output*

**Application Details**

Disconnect power. Use a screwdriver to pop open cover to reveal internal switches.

