

Modular Monitoring Safety Relays

Minotaur MSR238



Description

The MSR238 is a time-delayed output expansion module for the modular Minotaur MSR200 family of monitoring safety relays. It can be connected to either the MSR210 or MSR211 base unit or to the MSR230 output module to provide time-delayed outputs.

Up to 2 output modules can be connected to one base unit by simply removing the terminator, included with each base unit, and connecting the ribbon cables of the neighboring module. The connecting ribbon cable provides power to the MSR238 as well as a check on its status. The terminators must be inserted into the final output module.

The MSR238 has two safety rated outputs that work in parallel with the safety outputs of the base unit. When the output of the base unit is activated, the outputs of the MSR238 are the user-selected time delay expires. The time delay is set by connecting jumpers to the wiring terminals.

The outputs are 2 normally open safety rated outputs. The safety outputs have independent and redundant internal contacts to help ensure the safety function. The delayed normally closed output is an auxiliary signal that must only be used to indicate the status of the MSR238.

Features

- Category 3 per EN 954-1
- Stop category 1
- 2 Diagnostic LEDs
- Removable terminals
- 2 N.O. Delayed Safety Outputs
- 1 N.C. Delayed Aux. Output

Specifications

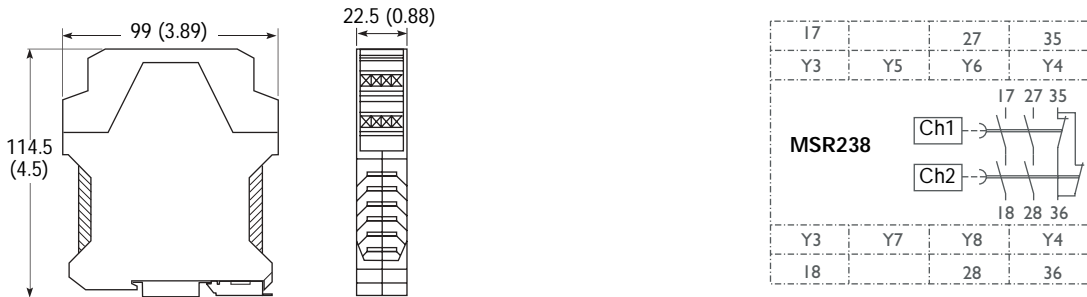
Standards	EN 954-1, ISO 13849-1, IEC/EN 60204-1, IEC 60947-4-1, IEC 60947-5-1, ANSI B11.19, AS4024.1
Approvals	C-Tick, CE marked for all applicable directives, cULus and TÜV
Category	Cat. 3 per EN954-1 (ISO13849-1)
Power Supply	24V DC from the base unit
Power Consumption	2.5W
Fuses	
Output (Ext. Recommended)	6A Slow Blow or 10A Quick Blow
Outputs	2 N.O. Safety 1 N.C. Auxiliary
Output Utilization per IEC 60947-4-1 (Resistive)	AC-1: 6A/250V AC DC-1: 6A/24V DC
① Output Utilization per IEC 60947-5-1 (Inductive)	B300, AC-15 3A/250V AC, 3A/125VAC P300, DC-13 2.5A/24V DC
Thermal Current (non switching)	1x6A, 2x4A
Min. Switched Current/Voltage	10mA/10V DC
Contact Material	AgSnO ₂ with 2 micron gold plating
Indication LEDs	Green = CH1 Output Active Green = CH2 Output Active
Impulse Withstand Voltage	2500V
Pollution Degree	2
Operating Temperature	-5°C to +55°C (+23°F to 141°F)
Humidity	95% RH
Enclosure Protection	IP40 (NEMA 1)
Terminal Protection	IP20
Maximum Conductor Size	0.2 – 2.5mm ² (24-12 AWG)
Torque Settings—term. screws	0.4 – 0.5 Nm (3.54 – 4.43 lb ² in)
Case Material	Polyamide PA 6.6
Mounting	35mm DIN rail
Weight	215 (0.47lbs)
Electrical Life	
222V 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	10,000,000 cycles
Vibration	10-55 Hz, 0.35mm
Shock	10g, 16ms, 100 shocks

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

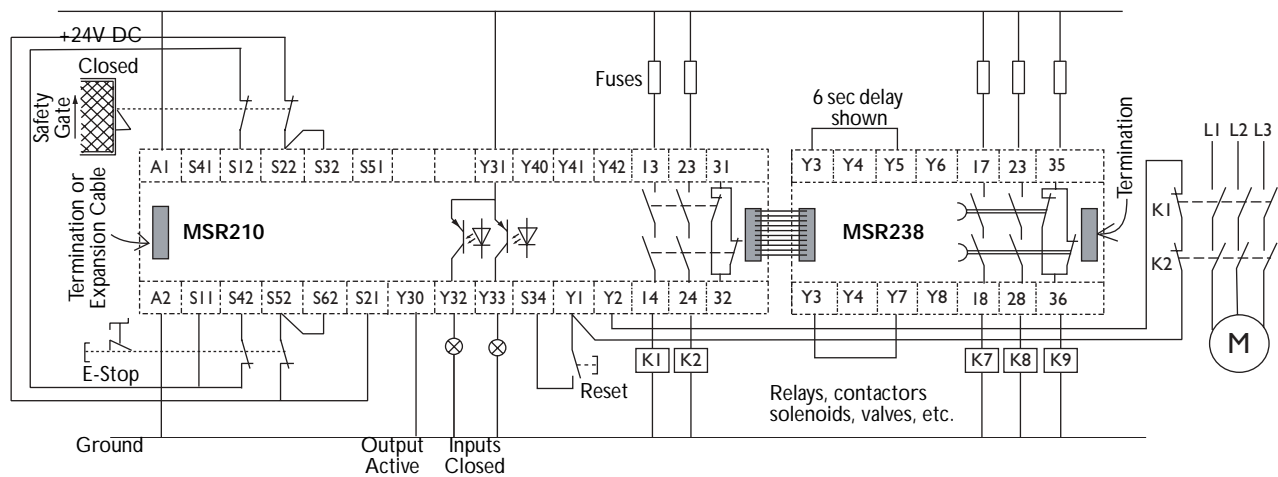
Product Selection

Delayed Safety Outputs	Delayed Auxiliary Outputs	Catalogue Number
2 N.O.	1 N.C.	440R-H23196

Dimensions—mm (inches) Block Diagram



Typical Wiring Diagram



Application Details (Typical)

Apply jumpers (links) on the terminals identified to achieve the desired off delay.

Delay (s)	Jumper	Jumper	Delay (s)	Jumper	Jumper	Delay (s)	Jumper	Jumper
0	None	None	8	Y3-Y6	Y3-Y7	60	Y4-Y5	Y3-Y8
0.5	Y3-Y5	None	9	Y4-Y5	Y3-Y7	80	None	Y4-Y7
1	Y4-Y6		10	None	Y4-Y8	100	Y3-Y5	Y4-Y7
1.5	Y3-Y6		15	Y4-Y6	Y4-Y8	120	Y4-Y6	Y4-Y7
2	Y4-Y5		18	Y3-Y6	Y4-Y8	160	Y3-Y6	Y4-Y7
3	Y3-Y5	Y4-Y6	21	Y4-Y5	Y4-Y8	200	Y4-Y5	Y4-Y7
4	Y3-Y6	Y4-Y5	26	None	Y3-Y8	250	Y3-Y5, Y4-Y6	Y4-Y7
5	None	Y3-Y7	30	Y3-Y5	Y3-Y8	300	Y3-Y6, Y4-Y5	Y4-Y7
6	Y3-Y5	Y3-Y7	40	Y4-Y6	Y3-Y8			
7	Y4-Y6	Y3-Y7	50	Y3-Y6	Y3-Y8			