

MSR38D/DP

Description

The Minotaur MSR38D/DP is a microprocessor-based, monitoring safety relay, with delayed, safety-rated, solid-state outputs.

The inputs of the MSR38D/DP are the same as the MSR30. They can be connected to gate interlocks, e-stop devices or four-wire safety mats. The gate interlocks and e-stops can be either single channel or dual channel normally-closed circuits.

The reset capability of the MSR38D/DP allows it to set up for monitored manual or automatic/manual reset.

The outputs include two delayed normally-open safety rated outputs that can be connected to loads up to 2 A at 24V DC. These outputs can be used to send a safety stop signal to a machine or manufacturing system. The delay is accomplished by the configuration of jumpers on the terminals. The delay can be easily adjusted by reconfiguring the jumpers.

The MSR38D/DP also has one solid-state normally-closed auxiliary output, which must only be used to indicate the status of the MSR38D/DP. The auxiliary output responds immediately to the change in input status; it is not delayed.



Features

- Category 4 per EN 954-1
- Stop Category 0 or 1
- Two delayed solid-state safety outputs
- One solid-state auxiliary output
- One N.C., two N.C. or safety mat input
- Monitored manual or automatic/manual reset

LED Indicators

Green	Power (Pwr)
Green	K1 Closed
Green	K2 Closed

Specifications

Safety Ratings	
Standards	EN 954-1, ISO 13849-1, IEC/EN 60204-1, ANSI B11.19, AS4024.1
Safety Classification	Cat. 4 per EN 954-1 (ISO 13849-1), SIL CL3 per EN IEC 62061, PLe per ISO 13849-1
Functional Safety Data * Note: For up-to-date information, visit http://www.ab.com/safety/	PFH _D : < 9.2 x 10 ⁻¹⁰ MTTF _d : > 631 years Suitable for performance levels PLe (according to ISO 13849-1:2006) and for use in SIL3 systems (according to IEC 62061) depending on the architecture and application characteristics
Certifications	CE Marked for all applicable directives, cULus, c-Tick, and TÜV
Power Supply	
Input Power Entry	24V DC SELV
Power Consumption	3 W
Inputs	
Safety Inputs	1 N.C. or 2 N.C. or SM
Input Resistance, Max.	200 Ω
Reset	Auto./Manual or Monitored Manual
Power On Delay/ Recovery Time	3 seconds/20 ms
Response Time	15 ms
Outputs	
Safety Contacts	2 N.O. SS, 2 A @ 24V DC
Auxiliary Contacts	1 N.O. SS, 50 mA @ 24V DC
Fuses, Output	External 6 A slow blow or 10 A fast acting
Power LED Diagnostics	3 s Blink: Initialization Constant: Normal Operation 2 Blinks: Configuration change during operation 4 Blinks: Solid state output switch fault 5 Blinks: Reset switch closed after reset Continuous blinking: Internal fault
Environmental and Physical Characteristics	
Enclosure Type Rating/ Terminal Protection	IP40 (NEMA 1), DIN 0470/ IP20, DIN 0470
Operating Temperature [C (F)]	-5...+55 ° (23...131 °)
Vibration	10...55 Hz, 0.35 mm
Shock	10 g, 16 ms, 100 shocks
Mounting	35 mm DIN Rail
Weight [g (lb)]	130 (0.287)
Conductor Size, Max.	0.2...2.5 mm ² (24...14 AWG)

* Usable for ISO 13849-1:2006 and IEC 62061. Data is based on the following assumptions:
- Mission time/Proof test interval of 20 years

Wiring Terminations

S11 & S21	Pulse train output
S12 & S22	Input contacts
A1 - S34	Reset switch
S11 - S34	Automatic reset, start-up test disabled
S21 - S34	Automatic reset, start-up test enabled
A1 - Y2	Monitoring circuit
A1 - Y41	Cross-fault monitoring disabled

Product Selection

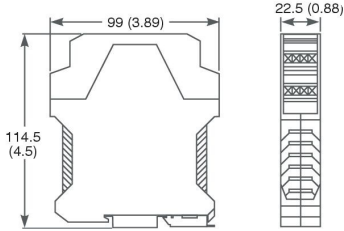
Inputs	Delayed Safety Outputs	Instantaneous Auxiliary Outputs	Terminals	Reset Type	Power Supply	Cat. No.
1 N.C., 2 N.C., Safety Mat	2 N.O. Solid State	1 N.O. Solid State	Fixed	Auto./Manual or Monitored Manual	24V DC SELV	440R-M23203
			Removable			440R-M23204

Accessories

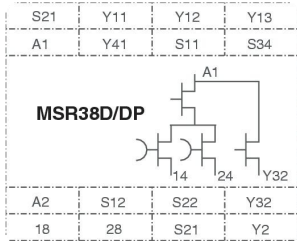
Description	Cat. No.
Bag of 4, 4-Pin Screw Terminal Blocks	440R-A23209
Bag of 4, 4-Pin Spring Clamp Terminal Blocks	440R-A23228

Approximate Dimensions

Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.

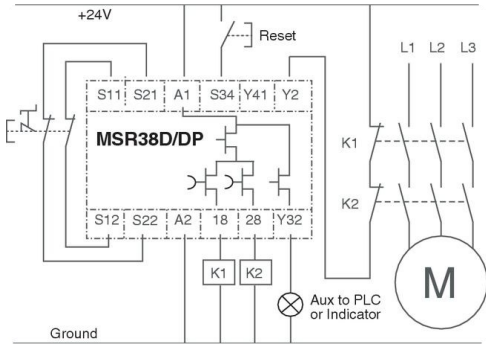


Block Diagram

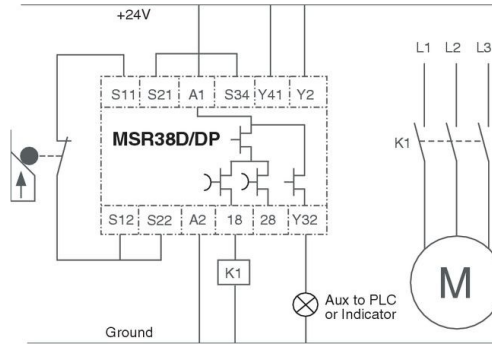


Typical Wiring Diagrams

See MSR30 on page Description for additional input wiring configurations.



Dual Channel E-Stop, Dual Channel Delayed Outputs, Monitored Manual Reset, Output Monitoring



Single Channel Gate Interlock, Single Channel Delayed Output, Automatic Reset, No Output Monitoring

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

Delay(s)	Y11	Y12	Y13	Delay(s)	Y11	Y12	Y13	Delay(s)	Y11	Y12	Y13
0	—	—	—	8	S21	S11	—	50	—	S21	S21
0.5	S11	—	—	10	—	S11	S21	60	S11	S11	S11
1	—	S11	—	12	S21	—	S11	80	S11	S11	S21
1.5	—	—	S11	15	—	S21	S11	100	S11	S21	S11
2	S21	—	—	18	S11	S11	—	120	S11	S21	S21
3	—	S21	—	21	S11	—	S11	160	S21	S11	S11
4	—	—	S21	26	—	S11	S11	200	S21	S11	S21
5	S11	S21	—	30	S21	S21	—	250	S21	S21	S11
6	S11	—	S21	40	S21	—	S21	300	S21	S21	S21