

MSR33RT/RTP

Description

The Minotaur MSR33RT/RTP is a microprocessor-based, monitoring safety relay, with safety-rated, solid-state outputs.

The MSR33RT/RTP is designed to operate with dual channel inputs where one channel is normally closed and the other is normally open. The Sipha sensors can be connected to the MSR33RT/RTP inputs.

Test pulses are used to dynamically check the input circuits. All inputs and outputs are short-circuit protected.

The reset capability of the MSR33RT/RTP allows it to set up for monitored manual or automatic reset. A start-up test can be enabled if automatic reset is used. The start-up test requires the inputs to be cycled before energizing the outputs. The reset and start-up test is determined by the connection wiring.

The outputs include two 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 MSR33 also has one solid-state, normally-open auxiliary output, which must only be used to indicate status of the MSR33RT/RTP.

Features

- Category 4 per EN954-1
- Stop Category 0
- Two solid-state N.O. safety outputs
- One solid-state N.O. auxiliary output
- One N.O. and one N.C. input

LED Indicators

Green	Power (Pwr)
Green	CH1 Energized
Green	CH2 Energized

Specifications



Safety Ratings	
Standards	EN 954-1, ISO 13849-1, IEC/EN 60204-1, ANSI B11.19, AS 4024.5
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 SIL CL3 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. + 1 N.O.
Input Simultaneity	Infinite
Input Resistance, Max.	200 Ω
Reset	Auto. or Monitored Manual
Power On Delay/ Recovery Time	3 seconds/20 ms
Response Time	15 ms
Outputs	
Safety Contacts	2 N.O. Solid State
Auxiliary Contacts	1 N.O. Solid State
Power LED Diagnostics	3 s Blink: Initialization Constant: Normal Operation 2 Blinks: Configuration change during operation 4 Blinks: Solid state output switch fault Continuous blinking: Internal fault
Environmental and Physical Characteristics	
Enclosure Type Rating/ Terminal Protection	IP40 (NEMA 1), DIN VDE 0470-1/ IP20
Operating Temperature [C (F)]	-5...+55 ° (23...131 °)
Vibration	10...55 Hz, 0.35 mm
Shock	10 g, 16 ms, 100 shocks
Mounting	In panel enclosure (IP54); 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 checking dynamic 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

Product Selection

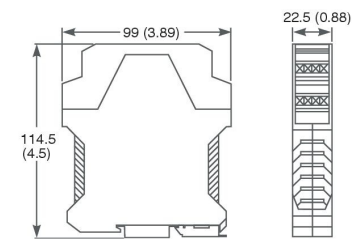
Inputs	Safety Outputs	Auxiliary Outputs	Terminals	Reset Type	Power Supply	Cat. No.
1 N.C. & 1 N.O.	2 N.O. Solid State	1 N.O. Solid State	Fixed	Auto. or Monitored Manual	24V DC SELV	440R-F23199
			Removable			440R-F23200

Accessories

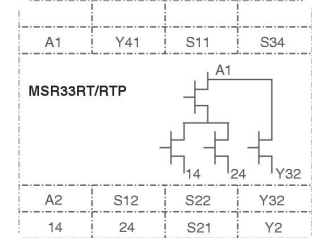
Description	Cat. No.
Bag of 4, 4-Pin Screw Terminal Blocks	440R-A23209
Bag of 4, 4-Pin Spring Clamp Terminal Blocks	440R-A23228

Approximate Dimensions

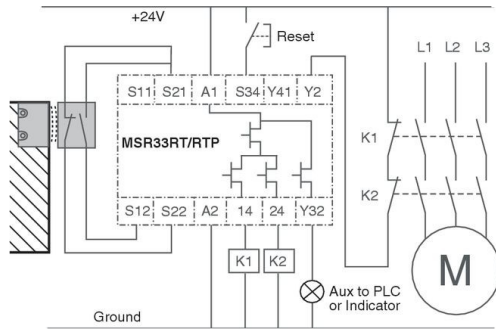
Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.



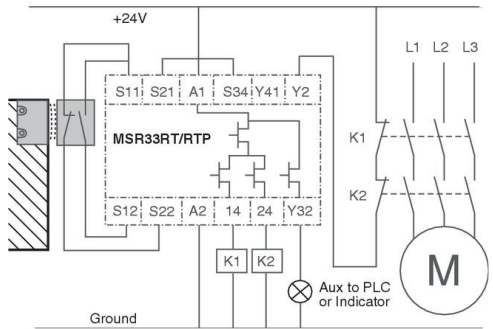
Block Diagram



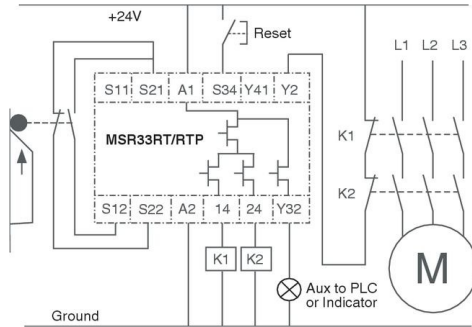
Typical Wiring Diagrams



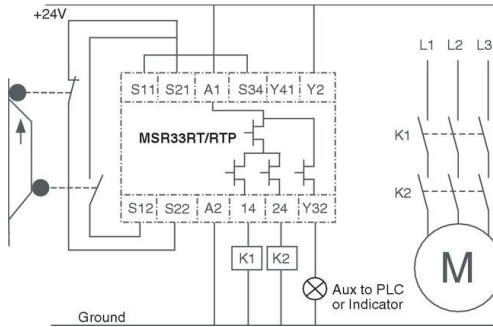
Sipha Sensor Inputs, Dual Channel Outputs,
Monitored Manual Reset, Output Monitoring Start-up Test Disabled



Sipha Sensor Inputs, Dual Channel Outputs,
Automatic Reset, No Output Monitoring Start-up Test Enabled



Dual Channel Inputs, Dual Channel Outputs,
Monitored Manual Reset, Output Monitoring Start-up Test Disabled



Dual Independent Inputs, Dual Channel Outputs,
Automatic Reset, No Output Monitoring Start-up Test Disabled