

Safety Relays

Monitoring Safety Relays

Minotaur MSR33RT/RTP



Housing with removable terminals shown.



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 Sipa 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 2A at 24V DC. These outputs can be used to send a safety stop signal to a machine or manufacturing system.

The MSR30 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
- 2 Solid State N.O. Safety Outputs
- 1 Solid State N.O. Auxiliary Output
- 1 N.O. & 1 N.C. Input

Specifications

Standards	EN954-1, ISO13849-1, IEC/EN60204-1, ANSI B11.19, AS4024.1
Safety Category	Cat. 4 per EN954-1 (ISO13849-1)
Approvals	CE for all applicable directives, C-Tick, cULus, TÜV
Power Supply	24V DC SELV (max with no load) electrically separate supply source
Power Consumption	3W
Safety Inputs	1 N.C. & 1 N.O.
Max. Allowable Input Resistance	200 ohms
Outputs	2 N. O. Safety, Solid State 1 N.O. Aux, Solid State
Output Rating Safety Auxiliary	2A @ 24VDC 50mA @ 24VDC
Short-Circuit Protection	Inputs and outputs (safety and aux)
Power On Delay	3s
Response Time	15ms
Recovery Time	20ms
Indication LEDs	Green = Power (Pwr) Green = CH1 Energized Green = CH2 Energized
Pwr LED 3s Blink Diagnostics Constant 2 Blinks 4 Blinks Continuous Blinking	Initialization Normal operation Config. change during operation Solid state output switch fault Internal Fault
Operating Temperature	-5°C to +55°C (+14° to +131°F)
Humidity	90% RH
Enclosure Protection	IP40 (NEMA 1), DIN VDE 0470-1
Terminal Protection	IP20
Pollution Degree	2
Conductor Size	0.2 – 2,5mm ² (24 – 14AWG)
Mounting	In panel enclosure (IP54) 35mm DIN rail
Weight	130g (0.287 lbs)
Vibration	10-55Hz, 0.35mm
Shock	10g, 16ms, 100 shocks

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

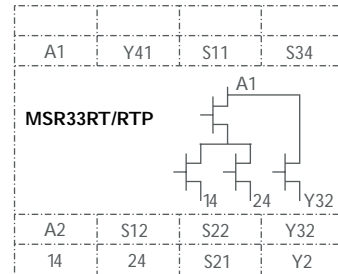
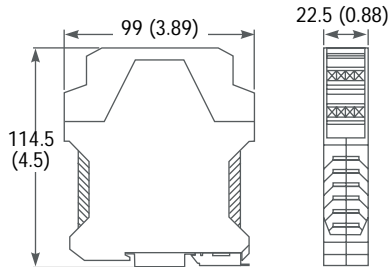
Wiring Terminations

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

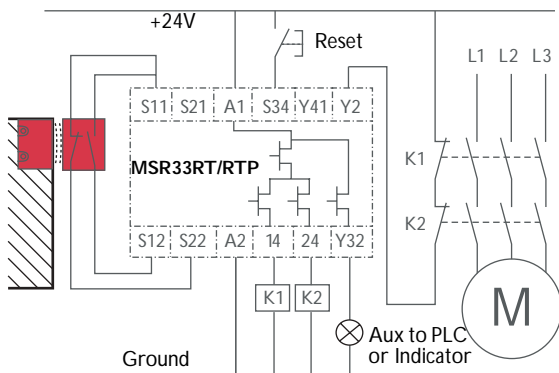
Product Selection

Inputs	Safety Outputs	Auxiliary Outputs	Terminals	Catalogue Number
1 N.C. & 1 N.O.	2 N.O. Solid state	1 N.O. Solid state	Fixed	440R-F23199
			Removable	440R-F23200

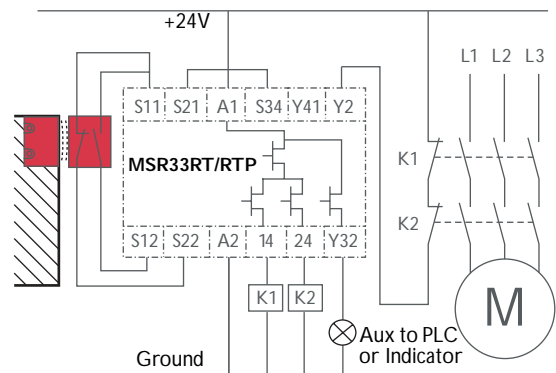
Dimensions—mm (inches) Block Diagram



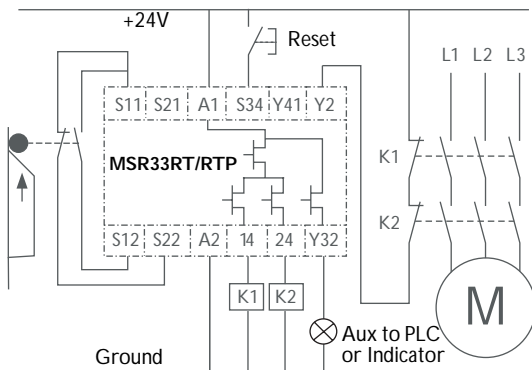
Typical Wiring Diagrams



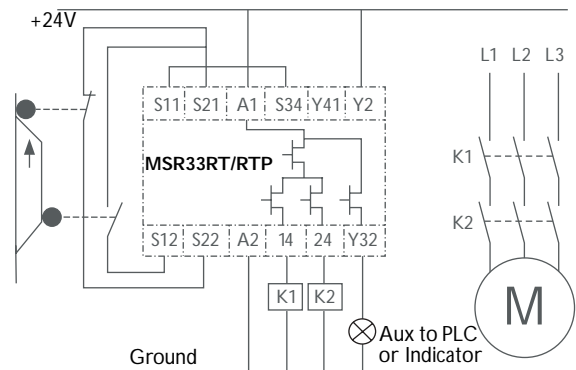
*Sipa Sensor Inputs, Dual Channel Outputs,
 Monitored Manual Reset, Output Monitoring
 Start-up Test Disabled*



*Sipa Sensor Inputs, Dual Channel Outputs,
 Automatic Reset, 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*