

Expansion Safety Relays with Delayed Outputs

MSR132E



Description

The Minotaur MSR132E is a monitoring safety expansion relay unit with single or dual channel input and either immediate or timed off-delay outputs. It is designed to be operated as an “extension” of a “master” safety relay. When wired properly, the outputs of the MSR132E will mimic the outputs of the master relay.

The outputs include four normally open safety rated outputs used to shut down the manufacturing system and two normally closed auxiliary outputs to indicate status of the MSR132E. One additional normally closed output is available to allow the host relay to monitor the status of the MSR132E. The safety, auxiliary and monitoring outputs have independent and redundant internal contacts to support the safety function.

A delayed output version is also available (MSR132ED) that have off-delayed outputs with a fixed time without the need for an auxiliary supply during the off-delay time.

Features

- Category 4/3 per EN 954-1
- Stop Category 0 or 1
- Four safety contacts N.O.
- Two auxiliary contacts N.C.
- One monitoring contact N.C.
- Single channel input

LED Indicators

Green	K1 Closed
Green	K2 Closed

Specifications

Safety Ratings	
Standards	EN 954-1, ISO 13849-1, IEC/EN 60204-1, IEC 60947-5-1, ANSI B11.19, AS 4024.1
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 *	PFH _D : < 0,46 x 10 ⁻⁹ MTTF _D : > 417 years Note: For up-to-date information, visit http://www.ab.com/Safety/
Certifications	CE Marked for all applicable directives, cULus, c-Tick, and BG

Power Supply	
Input Power Entry	24V AC/DC 50/60 Hz or 24V DC 0.8...1.1
Power Consumption	1,5 W

Inputs	
Safety Inputs	1 N.C. or 2 N.C.
Reset	Automatic
Power On Delay/Recovery Time	100 ms/100 ms
Response Time	50 ms

Outputs	
Safety Contacts	4 N.O.
Auxiliary Contacts	2 N.C.
Thermal Current _{I_{th}}	2 x 6 A or 3 x 5 A or 4 x 4 A nonswitching
Rated Impulse withstand Voltage _{I_{th}}	2500V
Switching Current @ Voltage, Min.	10 mA @ 10V
Fuses, Output	External 6 A slow blow or 10 A fast acting
Electrical Life (Operations)	(With surge suppression) 250V AC/6 A/1500VA cosφ = 1...0.1 M 250V AC/2 A/500VA cosφ = 1...0.5 M 250V AC/4 A/1000VA cosφ = 0.35...0.3 M 250V AC/1,5 A/1000VA cosφ = 0,6...0.1 M 24V DC/2 A/48 W = 1 M 10V DC/0,01 A/0.1 W = 2 M
Mechanical Life	2,000,000 operations

Utilization Category		
Resistive: AC-1	6 A @ 250V AC	
Resistive: DC-1	3 A @ 24V DC	
Inductive: AC-15	6 A @ 250V AC	6 A @ 125V AC
Inductive: DC-13	3 A @ 24V DC	
UL:	B300, R300, 6 A/250V AC, 3 A/24V DC	

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 (lbs)]	215 (0,474)
Conductor Size, Max.	0,2...4 mm ² (24...12 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
 - Functional test at least once within six-month period

Logic Expansion Safety Relays with Delayed Outputs MSR132E

Product Selection

Inputs	Safety Outputs	Auxiliary Outputs	Time Delay	Terminals	Reset Type	Power Supply	Cat. No.			
1 N.C. or 2 N.C.	4 N.O.	2 N.C.	0 s	Fixed	Automatic	24V AC/DC	440R-E23191*			
			0.5 s				440R-E23192			
			1 s				440R-E23193			
			2 s				440R-E23194			
			3 s				440R-E23195			
			0 s	Removable		24V AC/DC	440R-E23097*			
			0.5 s				440R-E23159			
			1 s				440R-E23160			
			2 s				440R-E23098			
			3 s				440R-E23161			
						4 s			24V DC	440R-E23162*

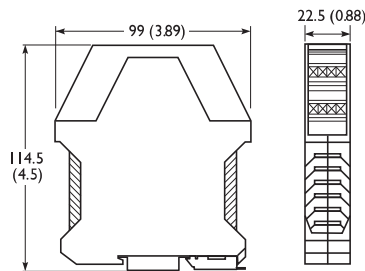
* Cat. 4 rated.
* 45 mm wide housing.

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

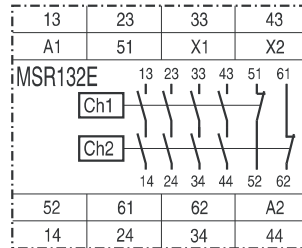
Approximate Dimensions

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

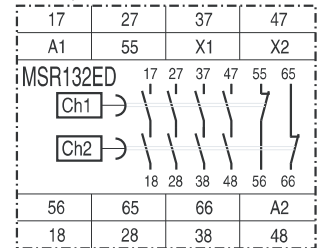


Block Diagram

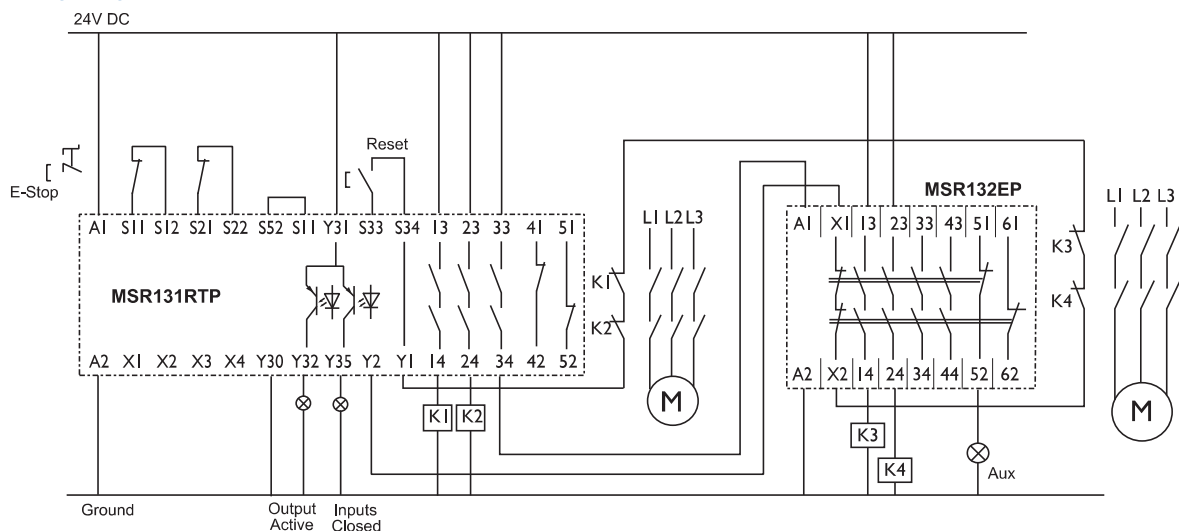
Standard Module



Off-delayed Modules



Typical Wiring Diagrams



Dual Channel E-Stop, Monitored Manual Reset, Dual Channel Output, Single Channel Delayed Expansion, Monitored Output

5-Safety Relays