

## Dual-Channel Safety Monitoring Relay

- Power requirements—the SR231A will accept 24 VDC
- Inputs—the SR231A is designed to monitor two magnetically encoded non-contact switches with 1 N/C and 1 N/O contacts
- Outputs—the SR231A has 2 N/O outputs to route power to the coils of external device power contactors plus 2 N/C auxiliary solid state outputs for signaling purposes
- External Device Monitoring (EDM) is provided with a N/C loop between Y1 and Y2 on the SR231A
- Selectable reset modes—automatic/manual reset mode is available on the SR231A
- The SR231A has removable terminal blocks



Conforms to EN60947-1/5, EN61000-6, EN62061, EN ISO 12100-2, EN ISO 13849-1/2  
UL and C-UL listed  
CSA and TÜV Rheinland approved

## Specifications

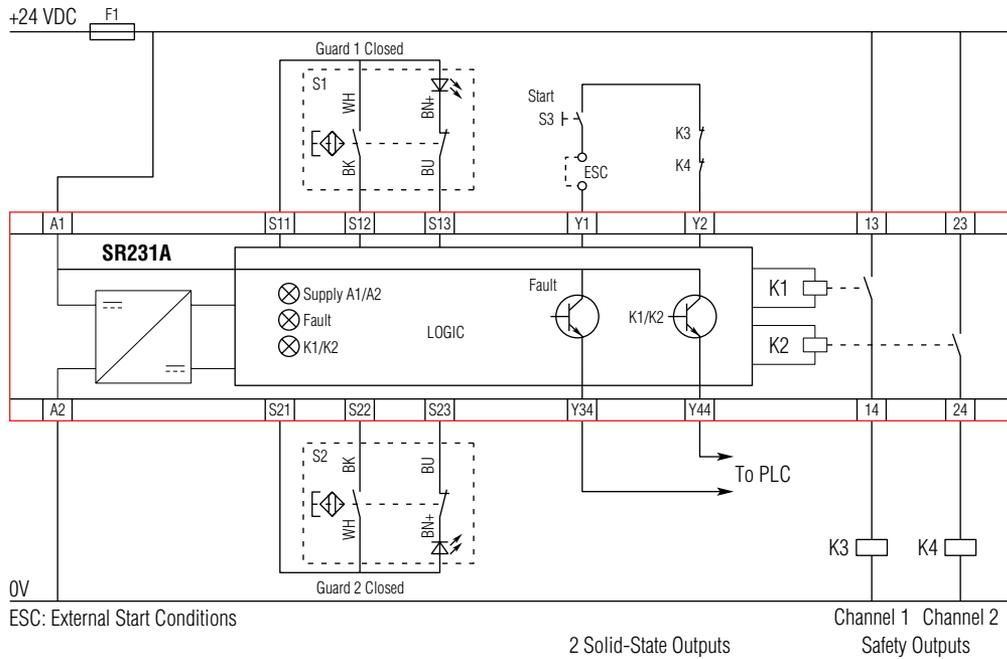
Electrical	All Models
Power Supply:	±20%, 24 VDC
Power Consumption:	≤2.5 W
Internal Fuse:	Electronic
Safety Inputs:	1 N/C + 1 N/O from two magnetically coded switches
Relay Outputs:	2 N/O (2 solid state for signaling)
Max Switched AC:	Inductive AC-15, 1800 VA inrush, 180 VA maintained
Max Switched DC:	Inductive DC-13, 1.5 A/24 V
Min Switched Current/Voltage:	10 mA/1 V (provided that the contact has never been used with higher loads)
Impulse Withstand Voltage:	4000 V
Max Drop-Out Time:	20 ms
Max Output Fuse:	4 A slow acting fuse or 6 A quick-acting fuse
Reset Mode:	Automatic/manual
External Device Monitoring (EDM):	N/C loop between Y1 and Y2
Mechanical	
Mounting:	35 mm (1.38 in.) DIN rail
Case Material:	Polyamide PA6.6
Max Wire Size:	0.2 to 1.5 mm <sup>2</sup> (24 to 16 AWG)
Weight:	180 g (6.4 oz.)
Color:	Red
Indication:	Green = Power on, Red = Fault indication, Green = Outputs closed
Mechanical Life:	1 x 10 <sup>6</sup> operations
Environmental	
Enclosure Protection:	IP20 terminals, IP40 (NEMA 1) housing
Operating Temperature:	-10 to 55°C (14 to 131°F)
Compliance	
Standards:	EN60947-5-3, EN ISO 13849-1, EN292, EN60204-1
Approvals/Listings:	CE-marked for all applicable directives, UL and C-UL, CSA, TÜV Rheinland
Reliability Data	
per EN ISO 13849-1:	Cat. 4, PLe, PFHd 3.92E-09

Specifications are subject to change without notice.

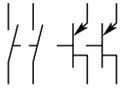
Note:

The safety contacts of the STI switches are described as normally closed (N/C)—i.e., with the guard closed, actuator in place, and the machine able to be started.

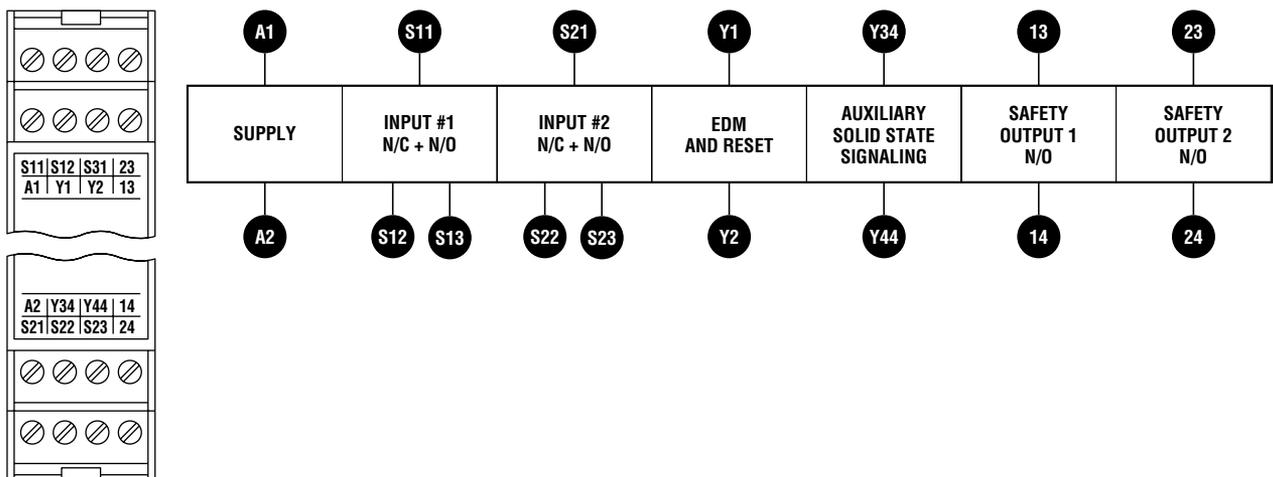
## Application



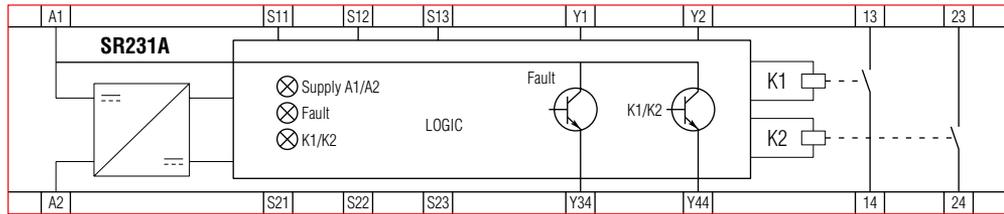
## Output Contact Arrangements



## Terminal Connections

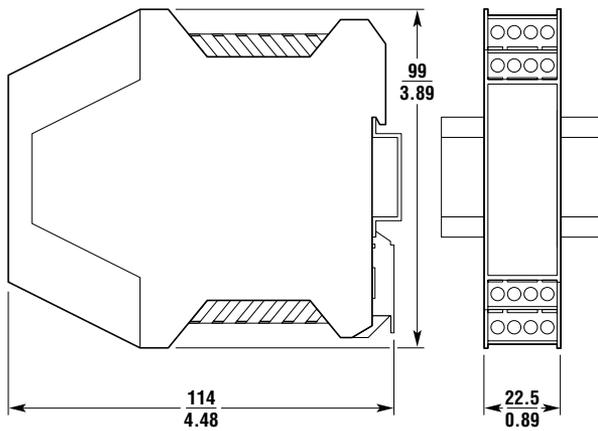


## Block Diagram



## Dimensions

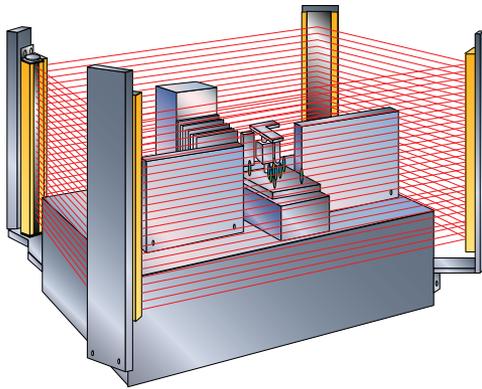
(mm/in.)



## Ordering

Model	Supply	Inputs	Outputs	Auxiliary	Part No.
SR231A00	24 VDC	1 N/C + 1 N/O (two)	2 N/O	2 Solid State	44510-2310

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**Application Solutions**

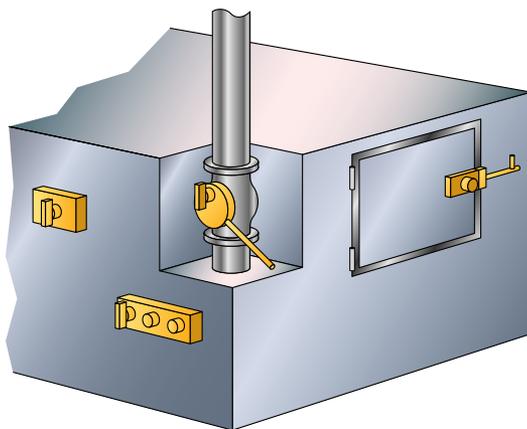
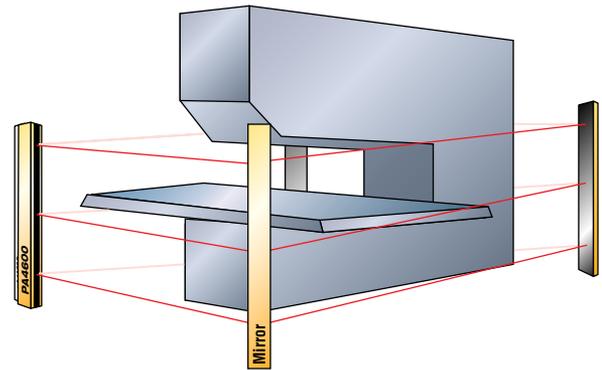


**Machine Guarding**

Here, a combination of the F3SJ safety light curtain and accessory mirrors provide four sided guarding of an automated machine used to manufacture computer disk drives.

**Perimeter Guarding**

The cost effective Perimeter Access Guarding Device PA4600 provides guarding of robot centers and large automated machinery. The STI corner mirrors direct the infrared beams to four sides of a machine.



**Process Systems Involving Non-Electrical Hazards**

Processes often involve energy sources that cannot be isolated by opening an electrical circuit. Many times pressure, chemical, or thermal hazards can be isolated by means of a valve lock. Closing the valve allows the master key to be released. The master key is inserted into a key exchange unit that then releases the door access keys.

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