

# VIPER Safety Relays Type: SCR-21-i (with added diagnostics)

## DESCRIPTION:

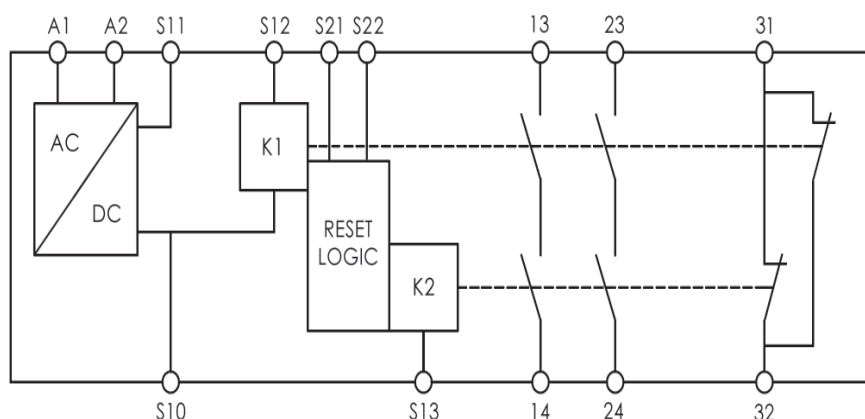
The Viper Safety Relays range from IDEM are designed to meet the latest safety standards and offer enhanced LED diagnostics and simplified wiring. Applications include the monitoring of safety interlock switches (guard door monitoring), emergency stop devices and sensors.

The SCR-21-i internal logic uses force guided relays to achieve cross monitoring, this ensures that a single fault does not lead to the loss of the safety function and that all faults are detected at or before the next safety demand.

## FEATURES:

- Outputs 2NC contacts and 1NO contact.
- Feedback circuit to monitor external contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 4.
- Monitored manual or automatic start.
- Single and dual channel operation.
- Output expansion units available to increase number of outputs.

## BLOCK DIAGRAM AND ELECTRICAL CONNECTION:



### Electrical Connection

A1 A2	Power 24Vac/dc
S11	Control Output
S10 S13 S12	Control Inputs
S21	Auto Reset Input
S22	Manual Reset Input
13-14	Safety Output Contact 1
23-24	Safety Output Contact 2
31-32	Auxiliary Output Contact



## SPECIFICATIONS:

STANDARDS				
EN ISO13849-1	EN ISO13849-2	EN62061	EN60204-1	EN ISO12100
POWER SUPPLY CIRCUIT				
Operating Voltage	24V AC/DC			
Operating Voltage Tolerance	85-110%			
Rated Supply Frequency	50Hz-60Hz			
Power Consumption	2.5W (24V AC/DC)			
CONTROL CIRCUITS				
Rated Output Voltage	24V DC (S11)			
Output Current	100mA (S11)			
Response Time	100ms			
Release Time	25ms			
Recovery Time	90ms			
OUTPUT CIRCUITS				
Rated Output Voltage	250V AC			
Maximum Current per Output	6A			
Maximum Total Current all Outputs	8A			
Safety Contact Breaking Capacity AC	250V, 1500VA, 6A, Ohmic 230V, 4A for AC-15			
	DC 24V, 30W, 1.25A, Ohmic			
Minimum Contact Load	10V 10mA			
Minimum Contact Fuses	4A slow blow, 6A fast blow			
Contact Material	AgSnO <sub>2</sub>			
Contact Service Life	10 x 10 <sup>6</sup>			
GENERAL DATA				
Rated Impulse Withstand Voltage	4kV			
Rated Insulation Voltage	250V			
Degree of Protection	IP20			
Temperature Range	-20C to +55C			
Degree of Contamination	2			
Overvoltage Category	III			
Weight	160gr (5.5 oz.)			
Mounting	Any position			

### SAFETY CHARACTERISTICS

EN62061	SIL3
ISO13849-1	Plc Category 4
PFH	4.1E-10 1/h (0.4% of SIL3 (1 E-07 1/h))
PFD Av. (T=20a)	3.6E-05 (3.6% of SIL3 (1 E-03))
MTTFd	142a (High)
DC Av.	99% (High)

## LED DIAGNOSTICS:

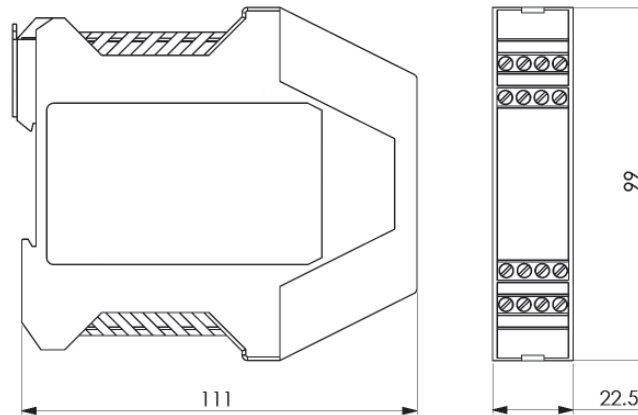
### WHEN SAFETY RELAY IN OPERATION

- Power Power applied to device
- Reset Reset Circuit is closed.
- CH1 External switch input 1 closed.
- CH2 External switch input 2 closed.
- K1 Internal relay safety output contacts closed.
- K2 Internal relay safety output contacts closed.

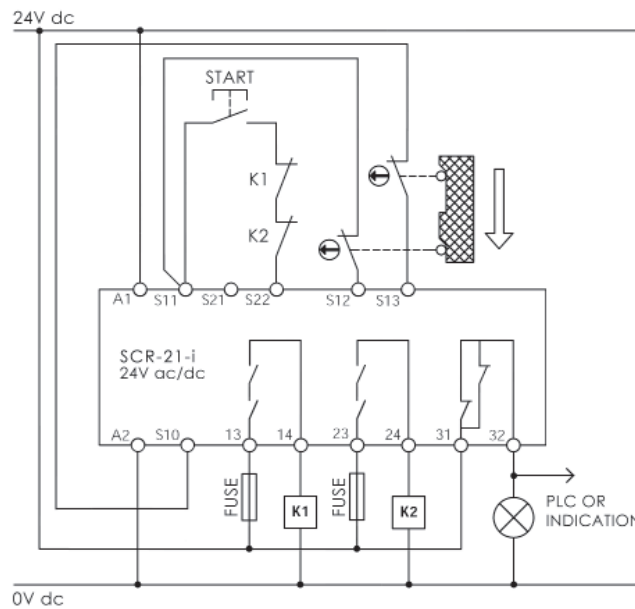
13	23	31
A1	S11	S21
SCR-21-i		
○	POWER	
○	RESET	
○	CH1	
○	CH2	
○	K1	
○	K2	
VIPER		
S12	S14	S10
A2		
14	24	32

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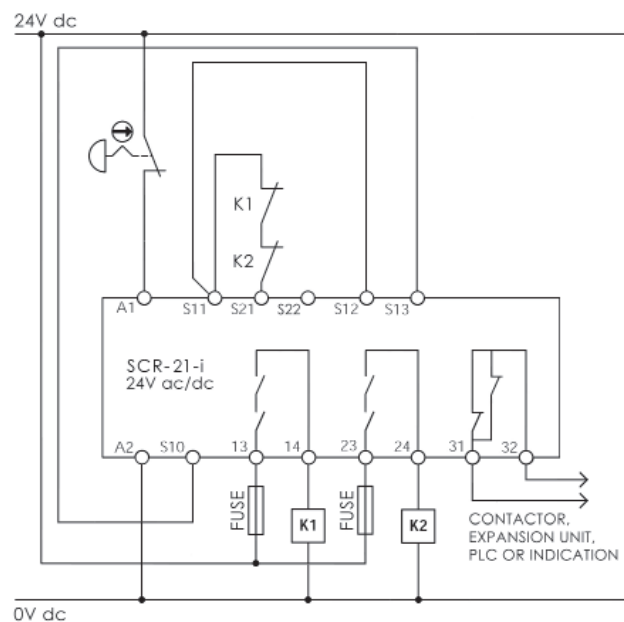
## DIMENSIONS:



## MANUAL RESTART MODE (Dual Channel) GUARD:



## AUTOMATIC RESTART MODE (Single Channel) E-STOP:



## SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
280001	SCR-21-i	Standard Screw Terminals	24Vac/dc	2NC	2NC 1NO
280001-P	SCR-21-i	Pluggable Screw Terminals	24Vac/dc	2NC	2NC 1NO