

VIPER Safety Relays: SCR-31-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.

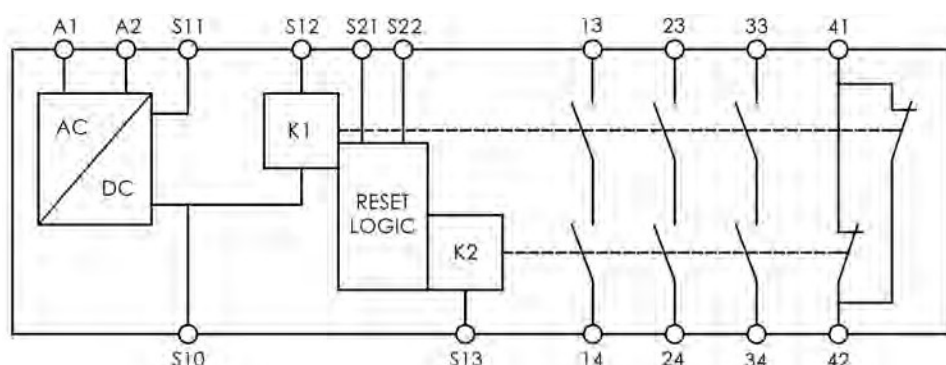
The SCR-31-i internal logic uses force guided relays to achieve cross monitoring, this ensures that a single fault does not lead to the loss of the safety function and that all faults are detected at or before the next safety demand.

FEATURES:

- Outputs 3NC 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
33-34	Safety Output Contact 3

SPECIFICATIONS:

STANDARDS			
EN ISO13849-1	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 ₂		
Contact Service Life	10 x 10 ⁶		
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	35mm DIN Rail		

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:

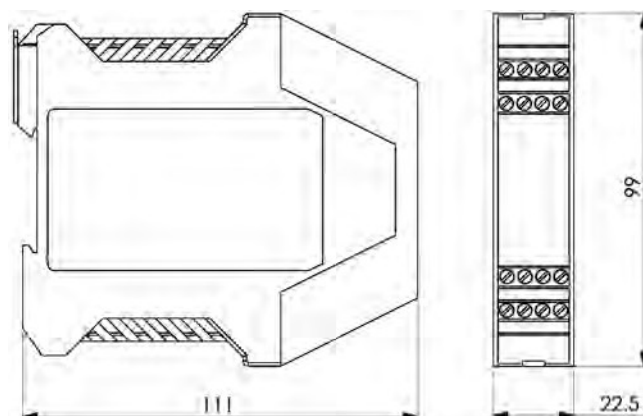
WHEN SAFETY RELAY IN OPERATION

- 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.

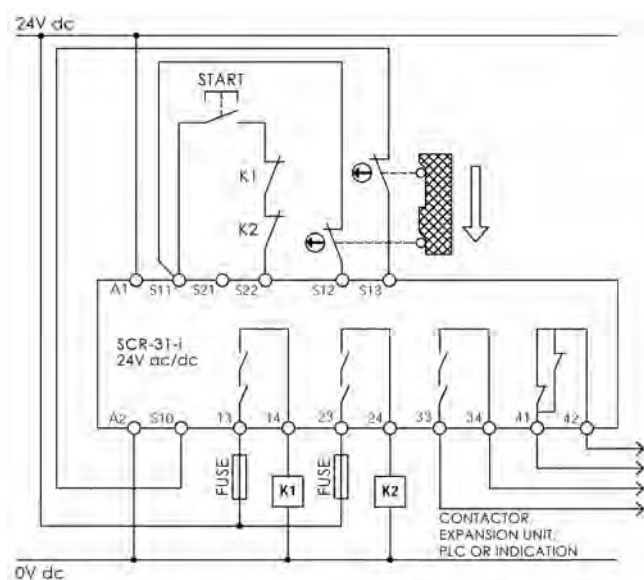
13	23	33	41
A1	S11	S21	S22
SCR-31-i			
○	POWER		
○	RESET		
○	CH1		
○	CH2		
○	K1		
○	K2		
VIPER			
S12	S13	S10	A2
14	24	34	42

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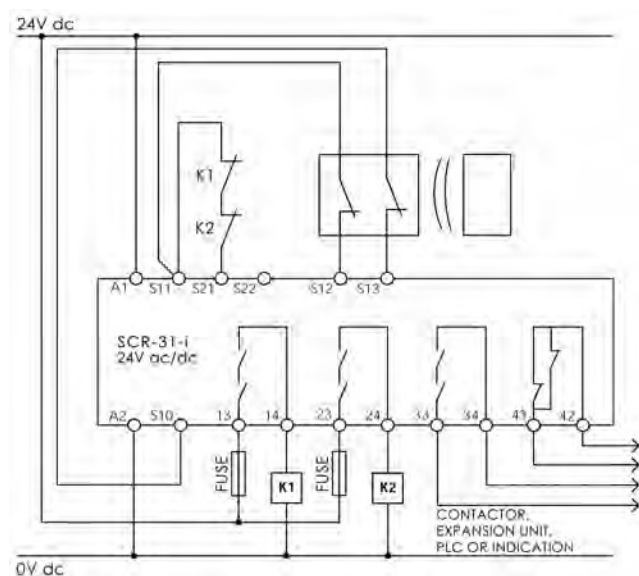
DIMENSIONS:



MANUAL RESTART MODE (Dual Channel) MECHANICAL SWITCHES:



AUTOMATIC RESTART MODE (Dual Channel) NON CONTACT:



SELECTION CHART & ORDERING:

SALES NUMBER	TYPE	TERMINAL TYPE	SUPPLY VOLTAGE	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
280002	SCR-31-i	Standard Screw Terminals	24Vac/dc	2NC	3NC 1NO
280002-P	SCR-31-i	Pluggable Screw Terminals	24Vac/dc	2NC	3NC 1NO