IDEM SCR21 Series Single/Dual Channel Viper Safety Relays

SCR21-280001

The Viper Safety Relay series from IDEM are designed with enhanced LED diagnostics and simplified wiring. Applications include guard door monitoring, emergency stop devices and sensors. The SCR21 series' 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.

Note: Not for use with safety light curtains

Features

- Single or dual channel operation
- Monitored manual or auto start /reset
- Up to 2 safety output contacts and 1 auxiliary output contact
- Easy diagnostics of status via 6 LEDs
- Compact 22.5mm housing suitable for DIN rail mounting

Safety Data per EN 13849-1	
Category	***4***
Performance level	Ple
$MTTF_d$	142a (High)
DC_{avg}	99% (High)
Safety Data per IEC/EN 62061, IEC/EN 61508	
Sil CL	SIL CL 3
Sil	SIL3
HFT	1 (Dual channel)
DC_{avg}	99% (High)
SFF	90-99%
PFH_d (t-20a)	$3.60E^{-05}$

SCR21 Series Single/Dual Channel Safety Relays

Part Number	Price	Type	Voltage	Outputs	Connection
SCR21-280001	$177.00	Single and dual channel operation	24 VAC/VDC	2 N.O. / 1 N.C.	Fixed screw terminals
SCR21-280001-P	$177.00				Pluggable terminals

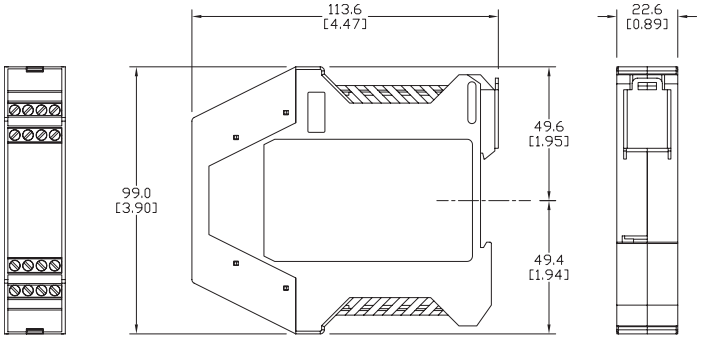
SCR21 Series Specifications

General Specifications	
Temperature	-20 to +55 °C [-4°F to +131 °F]
Altitude	< 2000m [6562ft]
Vibration Resistance	Tested to IEC 60068-2-6
Degree Of Protection	IP20
Housing	UL 94V-0 Thermoplastic
Weight	150g (5.3 oz)
Agency Approvals and Standard	cULus file E258676, CE, TUV
Terminal Designation per EN 50 005	1 x 4 mm² stranded ferruled (isolated) or 2 x 1.5 mm² stranded ferruled (isolated) or 2 x 2.5 mm² solid
Wire Fixing	M3.5 terminals with self-lifting wire protection or cage clamp terminals
Input Specifications	
Nominal Voltage	24 VAC/VDC
Voltage Range	85-110%
Maximum Consumption	2.5W (24 VDC)
Nominal Frequency	50 Hz-60 Hz
Control Voltage	24 VDC (S11)
Control Current	100 mA (S11)
Short Circuit Protection	Internal PTC (Positive Temperature Coefficient resistor)
Over Voltage Protection	Internal VDR (Voltage Dependent resistor)
Output Specifications	
Electrical Contact Life	6A / 250 VAC 100,000 cycles, 1A / 250 VAC 1,000,000 cycles
Mechanical Life	10×10^6
Contact Type	2 N.C. positively driven and 1 N.O. auxiliary contacts
Operate Delay	100 ms
Release Delay	25 ms
Nominal Output Voltage	250 VAC
Thermal Current (I_{th})	Max. 6A
Short Circuit Strength	Minimum Contact Fuses: 4A slow blow, 6A fast blow
Switching Capacity	AC–250V, 1500V, 6A, Ohmic 230V, 4A for AC-15 ; DC–24V, 30W, 1.25A, Ohmic
Switching Frequency	Max. 360 switching cycles/hr

IDEM SCR21 Series Single/Dual Channel Viper Safety Relays

Dimensions

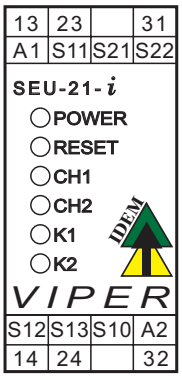
mm [in]



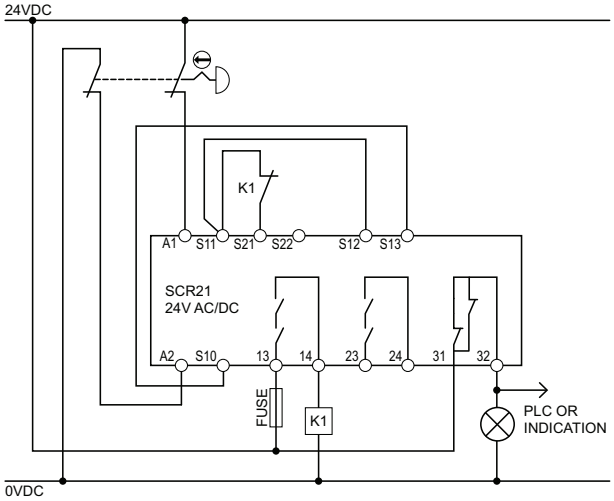
LED Diagnostics

When safety relay in operation

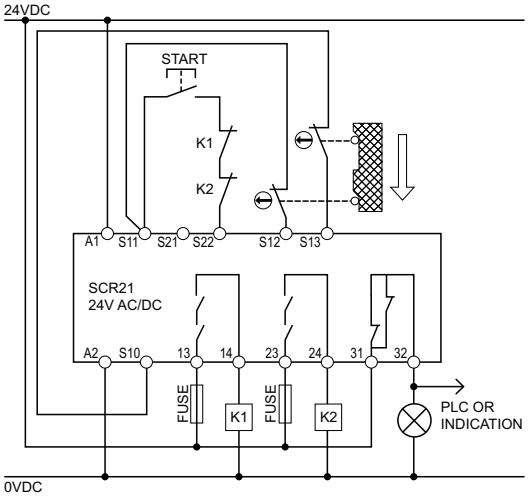
Power	Power applied to device
Reset	Reset circuit is closed
CH1	External switch input 1 closed
CH2	External switch input 2 closed
K1	Internal relay safety ouput contacts closed
K2	Internal relay safety output contacts closed



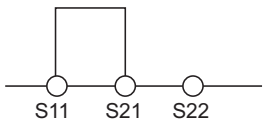
Applications



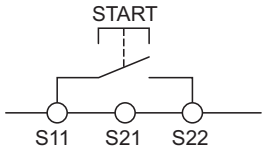
Automatic restart mode (single channel) E-Stop



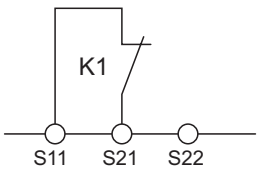
Manual restart mode (dual channel) guard



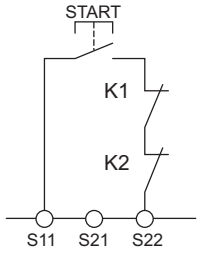
Auto Reset



Manual Reset



Contactor Auto Feedback



Contactor Manual Feedback

Note: A power supply unit with electrical isolation from the mains supply must be connected. External fusing of each safety output contact is necessary, a 4A slow-blow or 6A (quick action) must be provided. The maximum cabling and connecting resistance of control lines must not be exceed 300 Ω.

Safety Products

Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.

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