

# Safety Relays Type: SCR-1

## OVERVIEW:

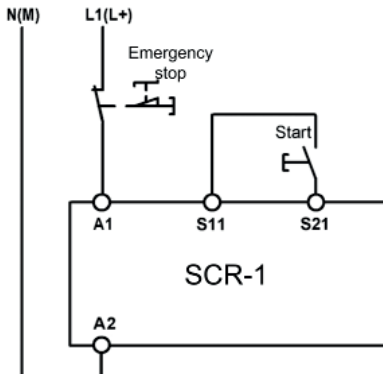
The SCR-1 is a low cost all purpose Safety Relay that ensures the quick and safe deactivation of the moving parts of a machine in case of danger. Internal fault monitoring takes place during restart via the start button.

Applications include single and dual channel emergency stop circuits or dual channel safety guard monitoring using Tongue Switches.

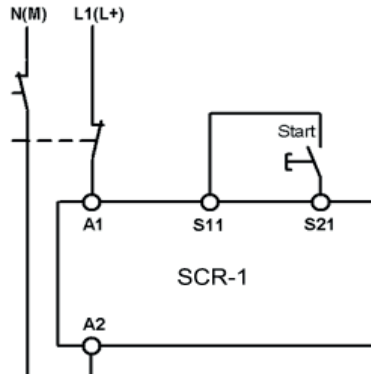
## FEATURES:

- 2 Safe, redundant safety output contacts
- Standards: EN60204-1, ISO13849-1, EN62061
- Up to Category 3 to ISO13849-1
- Up to PLd to ISO13849-1 SILCL2 EN62061
- Single or Dual Channel input - LED indication of input status
- Redundancy and cycle monitoring
- Feedback loop for monitoring contactors or expansion modules
- 22.5mm Din Rail Mounting

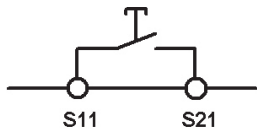
## APPLICATIONS:



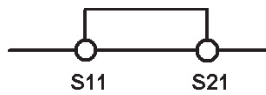
Single Channel Interlocking to PLC ISO13849-1 and Cat1



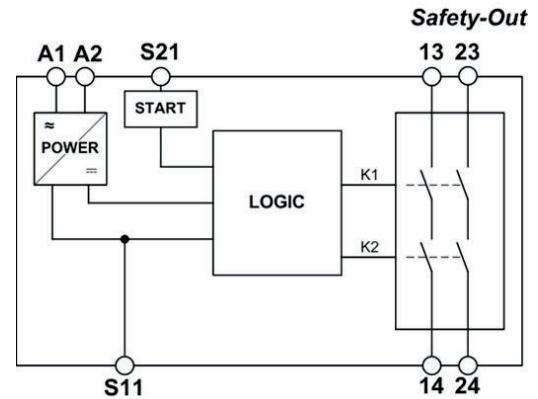
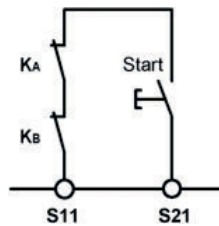
Dual Channel Interlocking to PLd ISO13849-1 and Cat3



Manual Start



Automatic Start



Block Diagram and Electrical Connection

- A1 A2 Power
- S11 24Vdc Control Voltage
- S21 Control Line
- 13-14 Safety Output Contact 1
- 23-24 Safety Output Contact 2

### Feedback Circuit

The feedback circuit monitors machine contactors or expansion modules

**Standards:** EN60204-1 EN292 EN418 ISO13849-1 EN954-1 EN1088 EN62061

**Safety Classification and Reliability Data:** Specified PL or SILCL were determined under worst case conditions

Monitored Safety Inputs Circuits	2NC or 1NC
Safety Switching Outputs	2NC positively guided
Operating Voltage	24Vac/dc 3VA approx.
Supply Deviation	+/-10%
Control Voltage at S11	24Vdc
Control Current S11 to S14	40mA approx.
Monitored Reset Circuit Loop	Auto or Monitored Manual Reset
Maximum Line Conductor Cross Section	2.5 sq mm
Maximum Length of Control Line	1000m with 0.75 sq mm
Contact Material	AgNi
Indication - Green	LED1 internal relay K1 energised LED2 internal relay K2 energised LED1 and 2 OSSD closed
Contact Service Life	Mechanical 1x10 <sup>7</sup> Electrical 1x10 <sup>5</sup>
Safety Contact Breaking Capacity	AC 250V, 1500VA, 6A, ohmic 230V, 4A for AC15 DC 24V, 30W, 1.25A, ohmic 24V, 30W, 2.0A for DC-13
External Fuse Protection - Safety Outputs	4A slow blow or 6A quick blow
Minimum Voltage and Current	24V, 20mA dc
Response Time on Output Opening	90ms
Rated Insulation Voltage	250V
Degree of Protection	IP20
Rated Impulse Withstand Voltage	4kV
Operating Temperature	-15C to +40C
IP Protection IEC529	Terminals IP20
Mounting	35mm DIN rail
Weight	160g approx.

<b>ISO13849-1</b>	
Performance Level	d
Category (ISO13849-1)	3
MTTFd	848 years
DC (average)	96.6%
Proof Test Interval (Life)	20 years
Safety Data Annual Usage	365 days per year 24 hours per day Test cycle 3600 seconds/cycle Full load AC15

<b>EN62061</b>	
SILCL	2
Proof Test Interval (life)	20 years
Hardware Fault Tolerance	1
DC (average)	96.6%
PFHd	1.03 x 10 <sup>-7</sup>

SALES NUMBER	TYPE	SUPPLY VOLTAGE	ISO13849-1 CATEGORY	SWITCH INPUT CIRCUITS	OUTPUT CONTACTS
180009	SCR-1	24Vac/dc	Up to Cat3	2NC	2NC

