

# VIPER Safety Relays: SEU-31TD-i (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 SEU-31TD-i is an expansion unit with the added benefit of Time Delayed contacts.

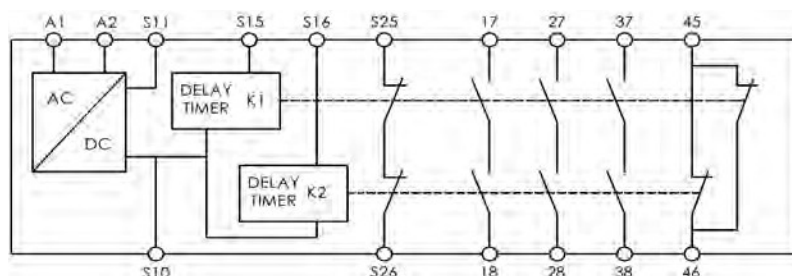
It has been designed to connect to a standard SCR-i relay to offer extra time delayed output contacts to the end user.

## FEATURES:

- Delayed contacts: 3NC 1NO (0-30 seconds).
- Feedback circuit to monitor external contacts - used for reinforcement of contacts.
- Easy diagnosis of status via visual indication of LEDs.
- Up to PLe, SILCL 3, Category 3.
- 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                   |
| S15 S16 S10 | Control Inputs                   |
| S25 S26     | Feedback Check Contacts          |
| 17-18       | Delayed Safety Output Contact 1  |
| 27-28       | Delayed Safety Output Contact 2  |
| 37-38       | Delayed Safety Output Contact 3  |
| 45-46       | Delayed Auxiliary Output Contact |

## 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)                                 |           |             |
| CONTROL CIRCUITS                    |                                            |           |             |
| Rated Output Voltage                | 24V DC (S11)                               |           |             |
| Output Current                      | 100mA (S11)                                |           |             |
| Response Time                       | 10 0ms                                     |           |             |
| 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                            | 35mm DIN Rail                              |           |             |

### SAFETY CHARACTERISTICS

|                 |                                        |
|-----------------|----------------------------------------|
| EN62061         | SIL3                                   |
| ISO13849-1      | Plc Category 4 (instant contacts)      |
|                 | Plc Category 3 (delayed contacts)      |
| PFH             | 2.3E-9 1/h (2.3% of SIL3 (1 E-07 1/h)) |
| PFD Av. (T=20a) | 2.0E-04 (20% of SIL3 (1 E-03))         |
| MTTFd           | 134a (High)                            |
| DC Av.          | 95% (Medium)                           |

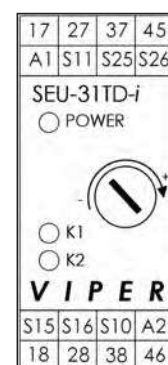
## LED DIAGNOSTICS:

### WHEN SAFETY RELAY IN OPERATION

Power Power applied to device

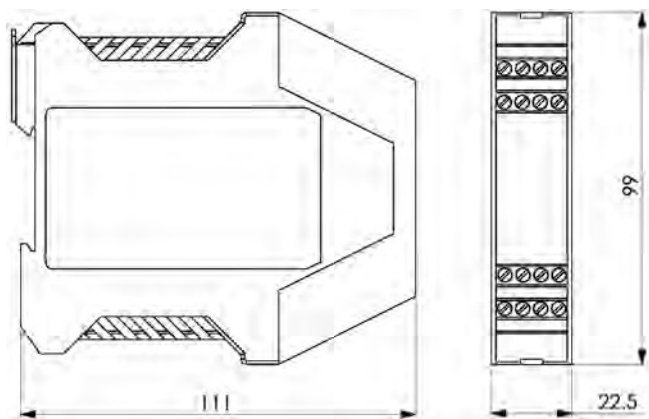
K1 Internal relay safety output contacts closed.

K2 Internal relay safety output contacts closed.

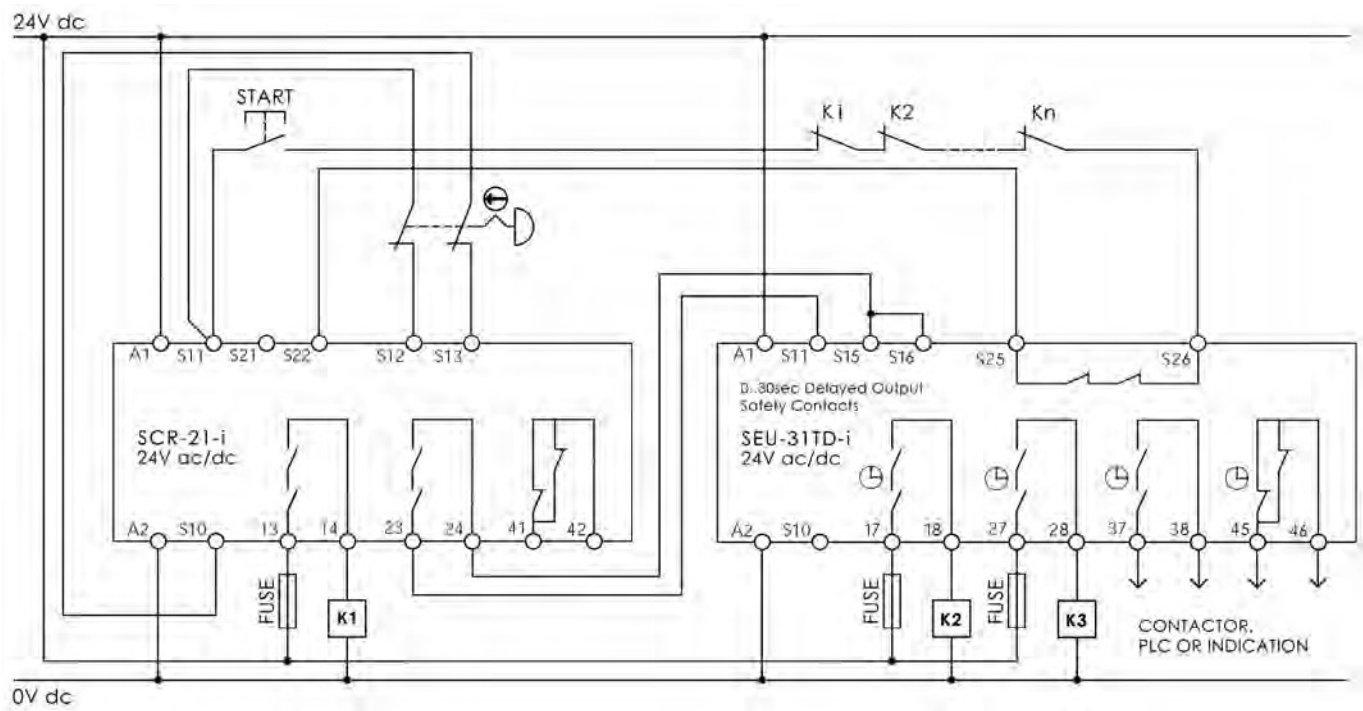


# VIPER Safety Relays: SEU-31TD-i (added diagnostics)

## DIMENSIONS:



## MANUAL RESTART MODE (Dual Channel) E-STOP:



## SELECTION CHART & ORDERING:

| SALES NUMBER | TYPE       | TERMINAL TYPE             | SUPPLY VOLTAGE | SWITCH INPUT CIRCUITS | DELAYED CONTACTS |
|--------------|------------|---------------------------|----------------|-----------------------|------------------|
| 280008       | SEU-31TD-i | Standard Screw Terminals  | 24Vac/dc       | 2NC                   | 3NC 1NO          |
| 280008-P     | SEU-31TD-i | Pluggable Screw Terminals | 24Vac/dc       | 2NC                   | 3NC 1NO          |