

# ASO Safety Solutions

## ELMON Safety Relay Mat and Edge

**1114-0210**

ELMON safety relays are used to evaluate safety contact mats, safety contact edges and safety bumpers sensors at crush and shear locations. An ASO sensor can be connected to the switching device. An integrated terminating resistor in the sensor enables steady-state current monitoring.

### Features

- Single channel operation
- Two safety output contacts and 1 auxiliary output contact
- Allows evaluation of a sensor in two and four-wire systems
- Manual or Auto reset via dip switch setting
- Easy diagnostic status via 3 LEDs
- DIN rail mounting

### Safety Data per EN 13849-1

|                          |     |
|--------------------------|-----|
| <b>Category</b>          | 3   |
| <b>Performance level</b> | Ple |
| <b>MTTF<sub>d</sub></b>  | 195 |
| <b>DC<sub>avg</sub></b>  | 99% |

### Safety Data per IEC/EN 62061, IEC/EN 61508

|                                |                    |
|--------------------------------|--------------------|
| <b>Sil CL</b>                  | SIL CL 3           |
| <b>Sil</b>                     | SIL3               |
| <b>HFT</b>                     | 1 [Single channel] |
| <b>DC<sub>avg</sub></b>        | 99%                |
| <b>SFF</b>                     | 99%                |
| <b>PFH<sub>d</sub> (t-20a)</b> | 6.51E-09           |



### ELMON Safety Relay

| Part Number      | Price    | Type           | Voltage            | Outputs                                       | Connection            |
|------------------|----------|----------------|--------------------|-----------------------------------------------|-----------------------|
| <b>1114-0210</b> | \$186.00 | Single channel | 120V AC/ 24V AC/DC | 2 NO safety contacts; 1 NO monitoring contact | Fixed screw terminals |

### ELMON Safety Relay Specifications

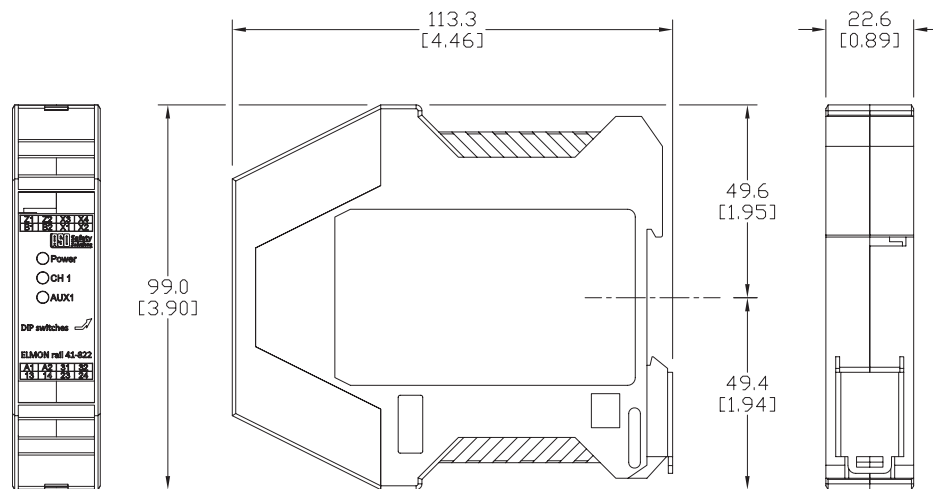
| General Specifications                    |                                                                                                                                                                                    |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Temperature</b>                        | Single mounting: -20° to +55°C [-4° to +131°F]; Mounted in a row: Max. +35°C [+95°F]<br>(NOTE: Single mounting requires 1 inch [25.4 mm] of free space on each side of the relay.) |
| <b>Altitude</b>                           | < 2,000 meters                                                                                                                                                                     |
| <b>Vibration Resistance</b>               | Tested to IEC 60068-2-6                                                                                                                                                            |
| <b>Degree Of Protection</b>               | IP20                                                                                                                                                                               |
| <b>Housing</b>                            | Polyamide PA 6.6                                                                                                                                                                   |
| <b>Weight</b>                             | 210g [7.4 oz]                                                                                                                                                                      |
| <b>Agency Approvals and Standard</b>      | cULus file E329422, CE, TUV                                                                                                                                                        |
| <b>Terminal Designation per EN 50 005</b> | Single or fine stranded cable 0.75 to 1.5 mm <sup>2</sup>                                                                                                                          |
| <b>Wire Fixing</b>                        | M3.5 terminals                                                                                                                                                                     |
| Input Specifications                      |                                                                                                                                                                                    |
| <b>Nominal Voltage</b>                    | 24V AC/DC or 120VAC                                                                                                                                                                |
| <b>Voltage Range</b>                      | 90-110%                                                                                                                                                                            |
| <b>Maximum Consumption</b>                | 1.5 W [24VDC]; 1.2 VA [24VAC]; 3.5 VA [120VAC / 60Hz]; 3.8 VA [120VAC / 50Hz]                                                                                                      |
| <b>Nominal Frequency</b>                  | 50Hz-60Hz                                                                                                                                                                          |
| <b>Control Voltage</b>                    | 5V DC                                                                                                                                                                              |
| <b>Control Current</b>                    | 63mA                                                                                                                                                                               |
| <b>Short Circuit Protection</b>           | Yes                                                                                                                                                                                |
| <b>Over Voltage Protection</b>            | Yes                                                                                                                                                                                |
| Output Specifications                     |                                                                                                                                                                                    |
| <b>Electrical Contact Life</b>            | 1,000,000 cycles                                                                                                                                                                   |
| <b>Mechanical Life</b>                    | 10 x 10 <sup>6</sup>                                                                                                                                                               |
| <b>Contact Type</b>                       | 2 NO safety contacts and 1 NO monitoring contact(s)                                                                                                                                |
| <b>Operate Delay</b>                      | ≤ 550ms [Power on: >850ms]                                                                                                                                                         |
| <b>Release Delay</b>                      | 11ms                                                                                                                                                                               |
| <b>Nominal Output Voltage</b>             | 230VAC                                                                                                                                                                             |
| <b>Thermal Current (I<sub>th</sub>)</b>   | 1A                                                                                                                                                                                 |
| <b>Short Circuit Strength</b>             | 1A middle time-lag fuse (glass tube 5x20)                                                                                                                                          |
| <b>Switching Capacity</b>                 | AC-15 (230V AC, 1A, 800,000 operations); DC-13 (24V DC, 1A, 950,000 operations)                                                                                                    |
| <b>Switching Frequency</b>                | Max. 6600 cycles/hour                                                                                                                                                              |

# ASO Safety Solutions

## ELMON Safety Relay Mat and Edge

### Dimensions

mm [in]



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## Application Examples

Note: Safety-oriented monitoring of a safety contact edge with start release via release pushbutton and separate continuation of the control circuits (category 3 compliant application according to EN ISO 13849-1).

In order to check the functionality of the load breaking K1 and K2 relays the break contacts of these contactors are integrated into the start circuit (Z1 Z2).

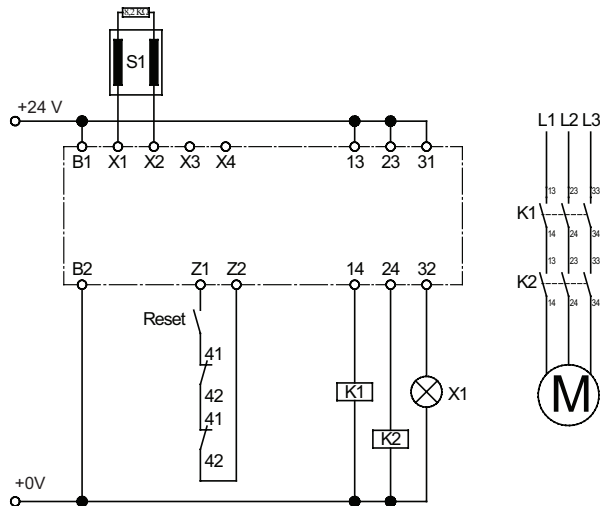
The signaling relay output is used to visualize the switching state of the safety contact strip.

Circuit diagram in voltage-free state. Sensor not operated.

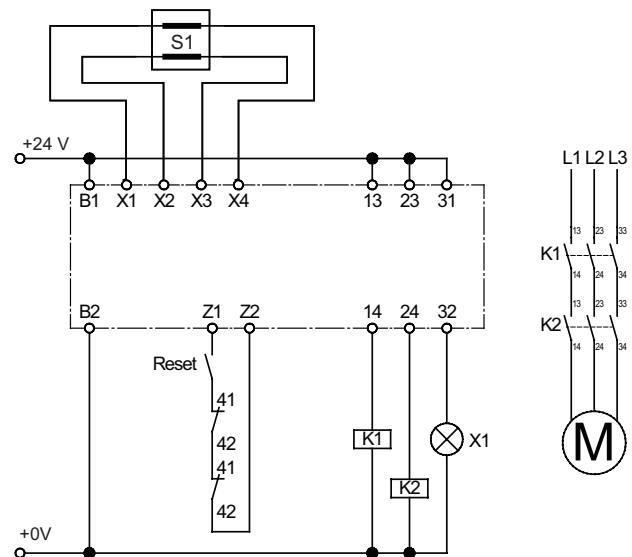
1 Sensor (edge, mat, or bumper)

2 Release key

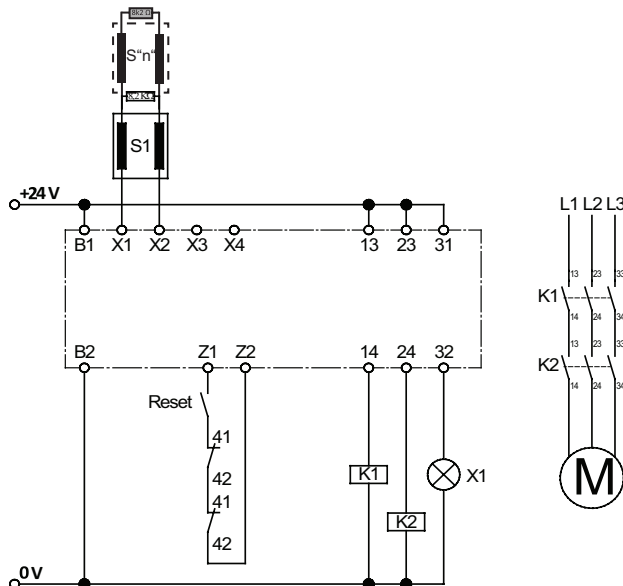
### 2-Wire Single Application Example



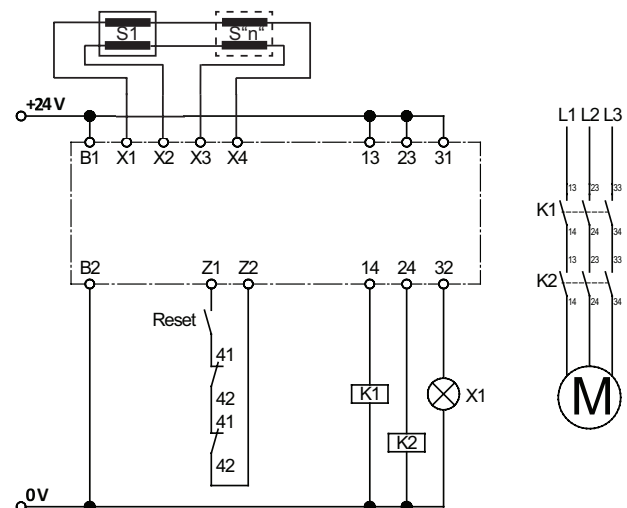
### 4-Wire Single Application Example



### 2-Wire Multiple Application Example



### 4-Wire Multiple Application Example



# 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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