

ELMON vario 01-27



Betriebsanleitung (Original, Gültigkeit siehe letzte Seite)
ELMON vario 01-27 Schaltgerät

Seite 2-6

Deutsch

Operating Manual (see last page for validity)
ELMON vario 01-27 Relay

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English

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Technical and operating relevant changes to the products and devices specified in this documentation are reserved at any time also without advance notice.

English

2. Safety terms and protection measures

- It is the responsibility of the manufacturers and operators of the plant / machine, on which the controller is used, to observe and fulfil all valid safety regulations and rules.
- This manual must be available at the installation place of the relay at all time.
Any person assigned with the operation and maintenance of the relay must read and follow this manual.
- The relay may only be installed and initially operated by qualified personnel who are familiar with this manual and the valid regulations.
The instructions in this manual must be strictly taken into consideration and fulfilled.
Electrical work may only be carried out by qualified personnel.
- All electrical engineering and the professional organizations safety regulations are to be considered.
- Before performing any work on the relay the voltage must be disconnected and verified that there is no live voltage.
- If the potential free contact of the relay output is connected to a dangerous voltage it is also necessary to switch off this voltage before working on the safety relay.
- The safety relay contains no user-serviceable parts.
Any unauthorised modifications and / or repairs of the relay will terminate any guarantee and claim against the manufacturer.

ELMON

Relay

Safety Notes

- Do not install the safety relay close to strong heat sources.
- Adequate protection devices must be provided for capacitive and inductive loads at the output.



The ELMON vario 01-27 relay is ***not*** intended for use in a safety system!

The liability of the manufacturer is terminated with neglect or deliberate abuse.

3. General

The single-channel relay ELMON vario 01-27 finds application in the monitoring of contact mats, contact edges and safety bumpers with constant 8,2 k Ω resistance.

The quiescent current monitoring of the pressure sensitive sensor is made possible by the integrated terminal resistor. When the target quiescent current flows the output relay is activated and the switching contact **COM** **NO** is closed. When the sensor is pressed or the sensor circuit is interrupted, the relay contact opens. The monitoring state of the sensor and the applied supply voltage are indicated by LED's.

4. Intended use

The intended use of the safety relay is the monitoring of contact mats, contact bumper and contact edges with constant 8,2 k Ω resistance.

A different, or beyond this use is not intended. The manufacturers do not assume liability for damages and malfunctions caused by not intended use.

The manufacturer must permit the use in special applications.

English

5. Overview

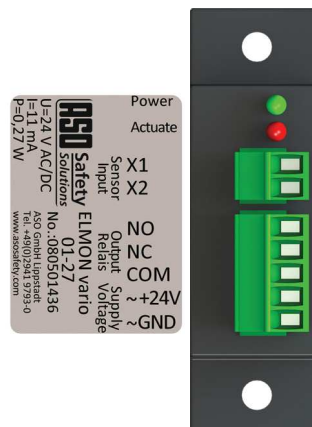
5.1 LED signals

LED **Power** green
Supply Voltage

LED **Actuate** red
Sensor operated or Sensor circuit is interrupted

5.2 Terminals

X1 X2 Connector sensor
NO Relay output NO (normally open)
NC Relay output NC (normally close)
COM Relay output COM (common)
~+24 V Supply Voltage. 24 V AC/DC
~AC/DC



6. Commissioning

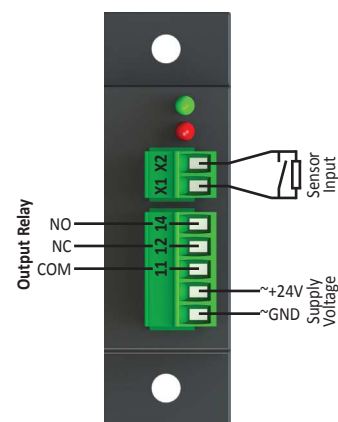
6.1 Preconditions

- The voltage supply must correspond with the requirements for safety low voltage (SELV).
- Cables outside the cabinet must be protected accordingly.

6.2 Electrical Connection

- Connect the sensor (edge, mat or bumper) to the clamps **X1 X2** *Sensor Input*.
- Connect the 24V AC/DC voltage supply to the clamps **~+24 V** *~GND Supply Voltage*.
- Connect the monitored control circuit to clamps **COM NO** *Output Relay* for an „Opener contact“ or to the clamps **COM NC** *Output Relay* for a „Closer contact“.
- The limit values for supply voltage and switching capability of the relay indicated in the „Technical Data“ are to be considered.

After the successful initial operation the safety outputs are activated (relay contact **COM NO** „closed“ resp. contact **COM NC** „opened“). Operating the Sensor causes the relay output contact to change the condition.



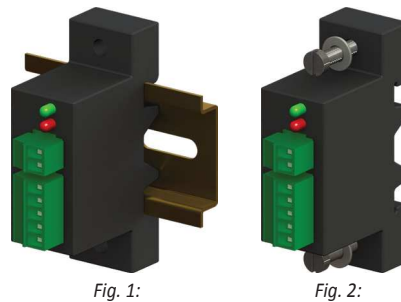
English

6.3 Mechanical Mounting

The mechanical mounting of the relay is to fix professionally to a suitable mounting place. The enclosure of the ELMON vario 01-27 permits to mount the relay in two different ways.

Fig. 1 shows the mounting at a 35 mm DIN rail, which preferably is in the cabinet.

Fig. 2 shows the direct mounting via two screws on a suitable underground.



6.4 Connecting multiple sensors per sensor circuit



It's not allowed to connect ASO-sensors in parallel.

One or more sensors can be connected to sensor input X1 X2. For this purpose, the individual sensors are connected in series according to figure 3.

Safety contact edge *SENTIR edge*:

Up to five SENTIR edges may be connected in series. The maximum total length of the SENTIR edges shall not exceed 100 m. The length of one SENTIR edge may be up to 25 m. The total cable length of the in series connected SENTIR edges must not exceed 25 m.

Safety contact bumper *SENTIR bumper*:

Up to five SENTIR bumper may be connected in series. The maximum total length of the SENTIR bumper shall not exceed 15 m. The length of one SENTIR bumper may be up to 3 m. The total cable length of the in series connected SENTIR bumper must not exceed 25 m.

Safety contact mat *SENTIR mat*:

Up to ten SENTIR mats may be connected in series. The maximum total area shall not exceed 10 m². The maximum size of an SENTIR mat is 1350 x 2350 mm. The total cable length of the in series connected SENTIR mats must not exceed 25 m.

Before connecting the sensors that are connected in series, it is recommended that the resistance value of the arrangement is to be measured. The resistance must be 8.2 k Ω \pm 500 Ω when the sensor is inactive and must not exceed 500 Ω when it is active.

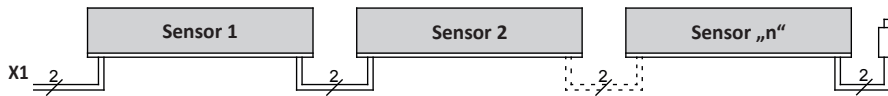


fig. 3 Interconnection of several SENTIR edges as an example

English

7. Fault diagnostic / Troubleshooting

Only the green **Power** LED should light up with the correct wiring and switching-on of the voltage supply. If the red LED lights up then there is an error in the system which can be localized by the LED

LED	Fault	Fault rectification
LED's do not light up	Supply voltage is failing, too low or wrongly connected	Verify the connections and the supply voltage: Connect 24 V AC/DC at clamps 24 V AC/DC Tolerance range: \pm 10%
LED <i>Actuate</i> lights up	Connecting cable of the PSS or the PSS itself is faulty	Verify the connections, the wiring and the connecting cables of the PSS (crushed cables, brittle cables etc.). Verify the PSS*

*the fault is not in the wiring, verify the function of the electronics by applying an 8.2 k Ω resistor to the **X1 X2** input of the safety relay. If the electronics work correctly, thereafter, the PSS must be checked by using a resistor measuring instrument (Ohmmeter). For this, the connection between the safety relay and the PSS must be disconnected, and the PSS must be connected to the measuring instrument. The resistor value must be 8.2 k Ω \pm 500 Ω for a not operated PSS, and in the operated condition the value should not exceed 500 Ω .

ELMON vario 01-27 Relay

8. Technical Data

Type

ELMON vario 01-27
Controller for monitoring 8,2 k Ω constant resistance pressure sensitive sensors with potential free relay output

Supply Voltage

U_E 24 V AC/DC $\pm 10\%$

Power consumption

P_{max} 0,27 VA 24 V AC/DC

PSS connection resistor

R_A 8,2 k Ω
 R_{AO} > 15,5 k Ω upper switching threshold
 R_{AU} < 1,2 k Ω lower switching threshold

Relay

Nominal current DC 1 A 30 V DC
 Nominal current AC 0,5 A 125 V AC
 Mechanical durability > 10⁵ activations

Switching time relay

Switching off delay < 5 ms
 (response time)
 Switching on delay ca. 100 ms

Enclosure

Polyurethane black
 Dimensions incl. clamp 64 x 46 x 20 mm

Protection class

IP65 for the enclosure
 IP20 for the clamps

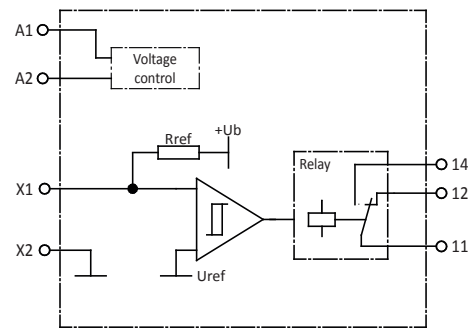
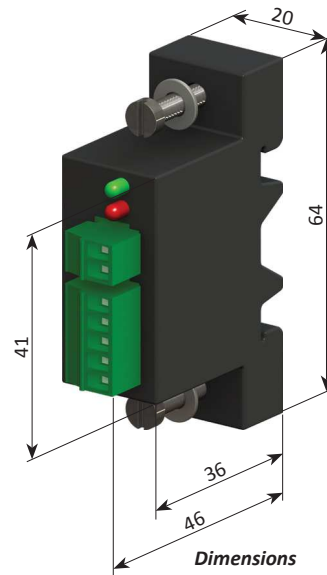
Weight 50 g

Temperature range -20 °C to +55 °C

Cable cross-section

single or fine strand wire 0,75 - 1,5 mm²

The technical data refer to a temperature of 20 °C.



Functional Diagram ELMON vario 01-27

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