

- Industrial design
- Width 45mm
- Level monitoring of conductive liquids
- 1 change over contact



## Technical data

### 1. Functions

Level monitoring of conductive liquids with adjustable threshold, timing for tripping delay and turn-off delay separately adjustable

### 2. Time ranges

|                            | Adjustment range |     |
|----------------------------|------------------|-----|
| Start-up suppression time: | -                |     |
| Tripping delay:            | 0.5s             | 10s |
| Switch-off delay:          | 0.5s             | 10s |

### 3. Indicators

Green LED ON: indication of supply voltage  
Yellow LED ON/OFF: indication of relay output

### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
Mounted on DIN-Rail TS 35 according to EN 50022  
Mounting position: any  
Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20  
Initial torque: max. 1Nm  
Terminal capacity:  
1 x 0.5 to 2.5mm<sup>2</sup> with/without multicore cable end  
1 x 4mm<sup>2</sup> without multicore cable end  
2 x 0.5 to 1.5mm<sup>2</sup> with/without multicore cable end  
2 x 2.5mm<sup>2</sup> flexible without multicore cable end

### 5. Input circuit

|                         |                            |                |
|-------------------------|----------------------------|----------------|
| Supply voltage:         |                            |                |
| 24V AC                  | terminals A1-A2            | (TLH4X 24VAC)  |
| 110V AC                 | terminals A1-A2            | (TLH4X 110VAC) |
| 230V AC                 | terminals A1-A2            | (TLH4X 230VAC) |
| Tolerance:              |                            |                |
| 24V AC                  | -15% to +10%               | (TLH4X 24VAC)  |
| 110V AC                 | -15% to +10%               | (TLH4X 110VAC) |
| 230V AC                 | -15% to +10%               | (TLH4X 230VAC) |
| Rated frequency:        | 48 to 63Hz                 |                |
| Rated consumption:      |                            |                |
| 24V AC                  | 2VA (1.5W)                 | (TLH4X 24VAC)  |
| 110V AC                 | 2VA (1.5W)                 | (TLH4X 110VAC) |
| 230V AC                 | 2VA (1.5W)                 | (TLH4X 230VAC) |
| Duration of operation:  | 100%                       |                |
| Reset time:             | 500ms                      |                |
| Residual ripple for DC: | -                          |                |
| Drop-out voltage:       | >30% of the supply voltage |                |

### 6. Output circuit

1 potential free change over contact  
Switching capacity: 1250VA (5A / 250V AC)  
Fusing: 5A fast acting  
Mechanical life: 20 x 10<sup>6</sup> operations  
Electrical life: 1 x 10<sup>5</sup> operations at 1000VA resistive load  
Switching frequency: max. 60/min at 100VA resistive load  
max. 6/min at 1000VA resistive load (according to IEC 947-5-1)  
Insulation voltage: 250V AC (according to IEC 664-1)  
Surge voltage: 4kV, overvoltage category III (according to IEC 664-1)

### 7. Measuring circuit

|                      |   |             |
|----------------------|---|-------------|
| Input:               | conductive probes (type SK1,SK2,SK3) terminals E1-E2-E3 |             |
| Switching threshold: | 5kΩ   | 0.25 to 5kΩ |
|                      | 100kΩ   | 5 to 100kΩ  |
| Sensor voltage:      | max. 16V AC   |             |
| Sensor current:      | 5kΩ   | max. 7mA    |
|                      | 100kΩ   | max. 200μA  |
| Line length:         | 5kΩ   | max. 1000m  |
|                      | 100kΩ   | max. 100m   |

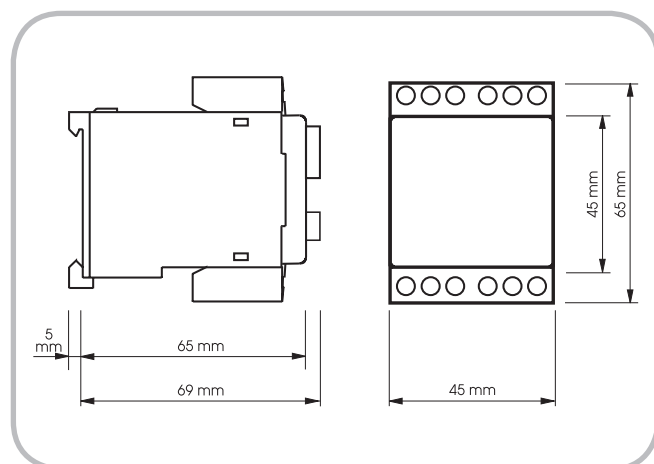
### 8. Accuracy

|                        |                                      |
|------------------------|--------------------------------------|
| Base accuracy:         | -5% to +10% (of maximum scale value) |
| Adjustment accuracy:   | ≤10% (of maximum scale value)        |
| Repetition accuracy:   | <2%                                  |
| Voltage influence:     | ≤0,06% / V                           |
| Temperature influence: | ≤0,05% / °C                          |

### 9. Ambient conditions

|                        |   |
|------------------------|---|
| Ambient temperature:   | -25 to +55°C (according to IEC 68-1)            |
| Storage temperature:   | -25 to +70°C                                    |
| Transport temperature: | -25 to +70°C                                    |
| Relative humidity:     | 15% to 85% (according to IEC 721-3-3 class 3K3) |
| Pollution degree:      | 3 (according to IEC 664-1)                      |

### 10. Dimensions



## Functions

Level monitoring of conductive liquids with adjustable threshold, timing for tripping delay and turn-off delay separately adjustable

### Pump up

Connection of the probe rods E1, E2 and E3. Alternatively the electrically conducting container can be connected in lieu of the test probe E3.

When the air-fluid level falls below the minimum probe E2, the set interval of the tripping delay ( $t_1$ ) begins. After the interval has expired the output relay R switches into on-position (yellow LED illuminated). When the air-fluid level again rises above the maximum probe E1, the set interval of the turn-off delay ( $t_2$ ) begins. After the interval has expired the output relay switches into off-position (yellow LED not illuminated).

### Pump down

Connection of the probe rods E1, E2 and E3. Alternatively the electrically conducting container can be connected in lieu of the test probe E3.

When the maximum probe E1 gets moistened, the set interval of the tripping delay ( $t_1$ ) begins. After the interval has expired the output relay R switches into on-position (yellow LED illuminated). When the air-fluid level falls below the minimum probe E2, the set interval of the turn-off delay ( $t_2$ ) begins. After the interval has expired the output relay switches into off-position (yellow LED not illuminated).

### Minimum monitoring

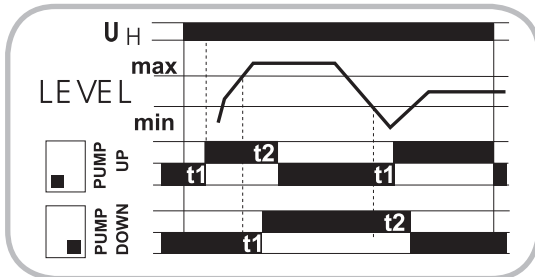
Connection of probe rods E2 and E3 (Bridge E1-E3). Alternatively the electrically conducting container can be connected in lieu of the test probe E3.

When the air-fluid level falls below the probe E2, the set interval of the tripping delay ( $t_1$ ) begins. After the expiration of the interval the output relay R switches into on-position (yellow LED illuminated). When the air-fluid level again rises above the probe E2, the set interval of the turn-off delay ( $t_2$ ) begins. After the interval has expired the output relay again switches into off-position (yellow LED not illuminated).

### Maximum monitoring

Connection of probe rods E2 and E3 (Bridge E1-E3). Alternatively the electrically conducting container can be connected in lieu of the test probe E3.

When the probe E2 gets moistened, the set interval of the tripping delay ( $t_1$ ) begins. After the interval has expired the output relay R switches into on-position (yellow LED illuminated). When the air-fluid level sinks below the probe E2, the set interval of the turn-off delay ( $t_2$ ) begins. After the interval has expired the output relay again switches into off-position (yellow LED not illuminated).



## Connections

