

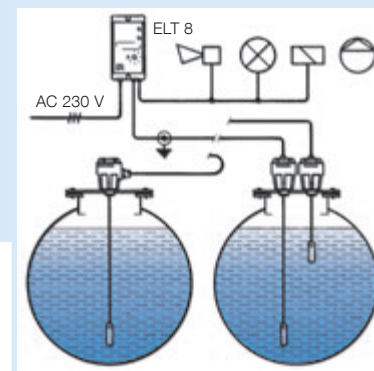
# Conductivity level switch

## CoFox® ELT 8

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- For conductive media such as water, waste water, emulsions and many more.
- Can be used as a level switch, level controller for filling or level controller for emptying
- With LEDs for normal operation and relay output



**Application** Suitable for use with electrically conductive liquids which do not foam excessively, are not viscous and not adhesive (bridging), e.g. water, emulsions or waste water. Can also be used as a water alarm unit in conjunction with floor water probe BWS 11.

**Description** The CoFox® ELT 8 level switch operates on the basis of conductivity.

The following functions can be selected:

- Level switch
- Level control for filling
- Level control for emptying

The sensitivity is adjustable. 2 voltage-free relay contacts are provided for switching functions. The units feature LEDs for normal operation and relay output active.

### Switching functions

**Level switch:** The relay can be set to either energise or de-energise in case of contact or loss of contact with the liquid of the probe rod. The switching point must be adjusted according to the conductivity of the liquid.

**Level control for filling:** A minimum of 2 probe rods are required. Set the internal switch to "max" (H). The relay energises when the min. probe loses contact with the liquid. Relay de-energises when the max. probe comes into contact with the liquid.

**Level control for emptying:** A minimum of 2 probe rods are required. Set the internal switch to "min" (L). The relay energises when the max. and min. probes have contact with the liquid. The relay de-energises when the min. probe loses contact with the liquid.

### Technical specifications

#### Adjustment range

2.5–50 kOhm (20–400  $\mu$ S/cm)  
Fully adjustable

#### Operating temperature range

Ambient: -10/+60 °C

#### Supply voltage

AC 230 V or DC 24 V

#### Power input

4 VA

#### Probe circuit

Max. AC 3 V

#### Switching outputs

Relay contact: 2 voltage-free changeover contacts  
Contact rating: AC 250 V, 500 VA  
DC 12 V, 1 A

#### Visual indication

Green LED: Normal operation  
Red LED: Alarm condition

#### Fail-safe mode

Integrated selector for min. or max. fail-safe mode (low/high)

#### Housing

Wall mounting housing with plug-in base, impact-resistant plastic (ABS)  
W x H x D: 53 x 113 x 108 mm  
Degree of protection: IP 30 (EN 60529)

#### Scope of delivery

Level switch without probe

| Version                                  | DG | Part no.      | Price € |
|--|----|---------------|---------|
| ELT 8 AC 230 V                           | E  | <b>53503</b>  |         |
| ELT 8 DC 24 V                            | E  | <b>53503A</b> |         |
| Accessories                              |    |               |         |
| <b>Alarm acknowledgement unit AQ 220</b> | H  | <b>53230</b>  |         |
| <b>Combined alarm light and horn</b>     | G  | <b>61020</b>  |         |
| <b>Cable extension fitting KVA</b>       | G  | <b>40041</b>  |         |

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See page 39/40 for probes for level switches; water alarm units from page 100.

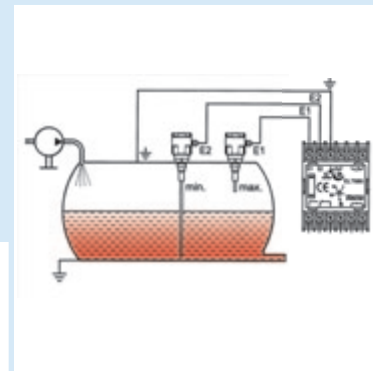
# Conductivity level switch

## CoFox® ELT 680

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- Specially designed for applications in the food industry
- Detection of interface layers between liquids with different levels of conductivity (product, foam)
- Adjustable delay helps to avoid unwanted switching
- Contact resistance does not influence measurement



**Application** Suitable for use with electrically conductive media, predominantly liquids, e.g. milk, wine, fruit juices, waste water or lyes. Also suitable for foaming or adhesive media, e.g. beer or yoghurt.

**Description** The CoFox® ELT 680 level switch operates on the basis of conductivity. A delay can be set to avoid undesired switching as a result of surface turbulence. The sensitivity and adjustment range of the device have been designed in such a way as to keep contact resistance from impairing the reliability of the unit (e.g. caused by foam on the electrode insulator (in breweries, dairies and ice-cream plants). Furthermore, the unit is capable of interface layer detection between liquids having different levels of conductivity (e.g. water and milk) in pipes and tanks.

**Switching functions** The unit can be operated either with one electrode as a single-point controller or with two electrodes as a dependent dual-point controller.

### Technical specifications

#### Adjustment range

Variable adjustment  
 HR: 1 kOhm to 100 kOhm  
 LR: 50 Ohm to 2,000 Ohm

#### Operating temperature range

Ambient: -10/+60 °C

#### Supply voltage

AC 230 V or DC 24 V

#### Power input

2.5 W

#### Probe circuit

Max. AC 3 V

#### Switching output

Relay contact: 1 voltage-free changeover contact  
 Contact rating: AC 250 V, 750 VA  
 DC 12 V, 1 A

#### Visual indication

Green LED: Power on

#### Delay

Adjustable from 0 to 20 s

#### Fail-safe mode

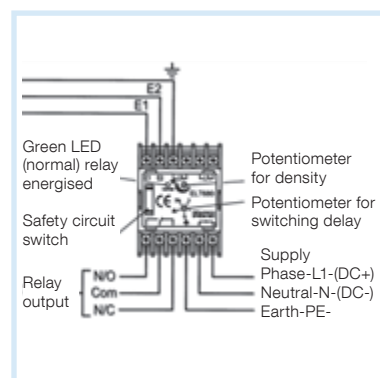
Integrated selector for min. or max. fail-safe mode (low/high)

#### Housing

DIN rail housing made of impact-resistant plastic (ABS)  
 W x H x D 73 x 55 x 112 mm  
 Degree of protection: IP 40 (EN 60529)

#### Scope of delivery

Level switch without probe



See page 39/40 for probes for level switches.

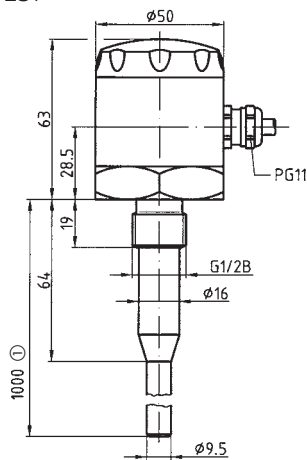
|  | DG | Part no.     | Price € |
|--|----|--------------|---------|
| <b>ELT 680</b><br>DC 24 V                | E  | <b>53682</b> |         |
| <b>ELT 680</b><br>AC 230 V               | E  | <b>53681</b> |         |
| Accessories                              |    |              |         |
| <b>Alarm acknowledgement unit AQ 220</b> | H  | <b>53230</b> |         |

# Probes for conductivity level switches, suitable for CoFox® ELT 8, ELT 500/4, ELT 680

Types and dimensions (mm)

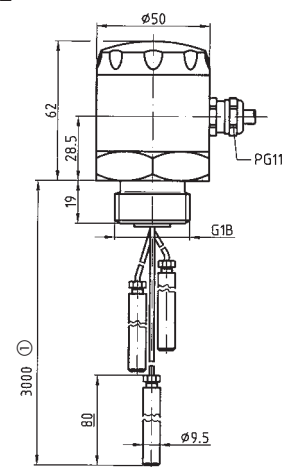
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Single-rod probe LST  
12



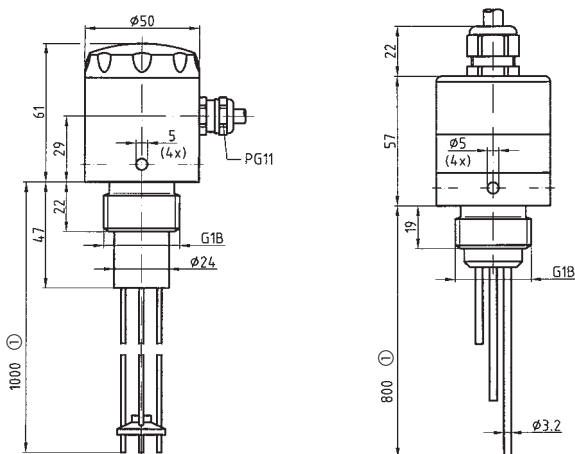
① Standard length (can be shortened)

Flexible probe LSE  
23



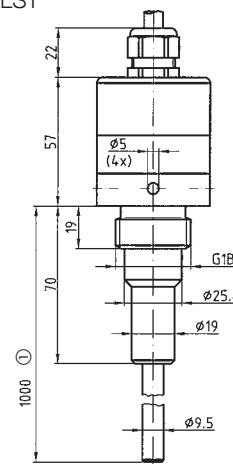
① Standard length (can be shortened)

Multi-rod probes LSM 01/LSM 02



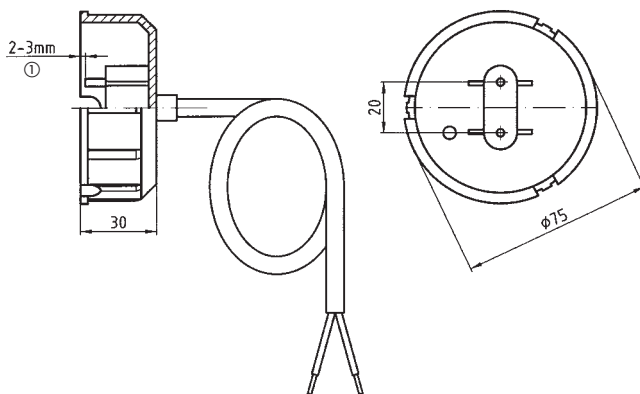
① Standard length (can be shortened)

Single-rod probe LST  
32



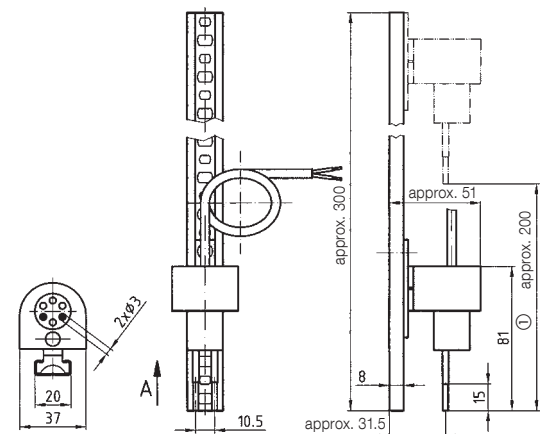
① Standard length (can be shortened)

Floor water probe BWS 11



① Response level

Wall mounting rail probe  
WSS



① Adjustment range

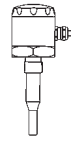
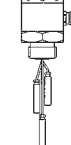
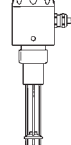
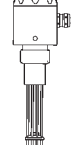
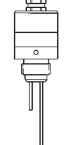
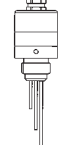
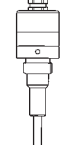
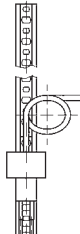
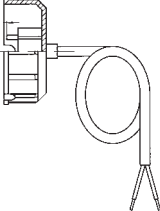
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Many other probe versions are available. Please enquire.

# Probes for conductivity level switches, suitable for CoFox® ELT 8, ELT 500/4, ELT 680

DG: E

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| Type  | Single-rod probe LST 12   | Flexible probe LSE 23  | Triple-rod probe LSM 01   | Quadruple-rod probe LSM 01  | Dual-rod probe LSM 02  | Triple-rod probe LSM 02   | Single-rod probe LST 32   |
|---|---|--|---|---|--|---|---|
| Version   |  |                     |  |  |  |  |  |
| Type number   | 6921 21 1000  | 6622 27 1030   | 6272 14 1230  | 6272 14 1240  | 6812 24 002P   | 6812 24 003P  | 6812 21 000P  |
| Suitable for  | CoFox® ELT 8 / CoFox® ELT 680   |  |   |   |  |   |   |
| Price €   |   |  |   |   |  |   |   |
| Part no.  | <b>55312</b>  | <b>55323</b>   | <b>55034</b>  | <b>55021</b>  | 55041  | 55044   | 55332   |
| <b>Probe head</b>   |   |  |   |   |  |   |   |
| Material  | Aluminium, screw cover ABS  | Aluminium, screw cover ABS   | PVC, screw cover ABS  | PVC, screw cover ABS  | Stainless steel 316 Ti   | Stainless steel 316 Ti  | Stainless steel 316 Ti  |
| Electrical connection   | PG 11   | PG 11  | PG 11   | PG 11   | 2 m fixed cable  | 2 m fixed cable   | 2 m fixed cable   |
| Degree of protection  | IP 66   | IP 65  | IP 65   | IP 65   | IP 66  | IP 66   | IP 66   |
| Process connection  | G½B   | G1B  | G1B   | G1B   | G1B  | G1B   | G1B   |
| <b>Electrodes</b>   |   |  |   |   |  |   |   |
| Number  | 1   | 3  | 3   | 4   | 2  | 3   | 1   |
| Material  | 316 Ti  | 316 Ti   | 316 Ti  | 316 Ti  | 316 Ti   | 316 Ti  | 316 Ti  |
| Insulator   | PTFE  | PTFE   | Epoxy resin   | Epoxy resin   | PTFE   | PTFE  | PTFE  |
| Diameter  | 9.5 mm  | 9.5 mm   | 3.2 mm  | 3.2 mm  | 3.2 mm   | 3.2 mm  | 9.5 mm  |
| Length  | 1,000 mm  | 3,000 mm   | 1,000 mm  | 1,000 mm  | 800 mm   | 800 mm  | 1,000 mm  |
| <b>Application area</b>   |   |  |   |   |  |   |   |
| Process pressure  | 0/3 bar   | 0/2 bar  | 0/3 bar   | 0/3 bar   | 0/10 bar   | 0/10 bar  | -1/+20 bar  |
| Temperature of medium   | -20/+150 °C   | 2 bar: 0/50 °C<br>1 bar: 0/100 °C  | 0/50 °C   | 0/50 °C   | -20/+120 °C  | -20/+120 °C   | -20/+220 °C   |
| <b>Wall mounting rail probe WSS</b>   |   |  |   |   |  |   |   |
|  | Application   | Height-adjustable wall mounting probe, suitable for CoFox® ELT 500/4 / CoFox® ELT 8 / CoFox® ELT 680 |   |   |  |   |   |
|   | Price €   |  |   |   |  |   |   |
|   | Part no.  | <b>55050</b>   |   |   |  |   |   |
|   | Temperature of medium   | 0/50 °C  |   |   |  |   |   |
|   | Adjustment range  | Approx. 200 mm   |   |   |  |   |   |
|   | Electrical connection   | Permanently installed cable, 150 cm  |   |   |  |   |   |
| <b>Floor water probe BWS 11</b>   |   |  |   |   |  |   |   |
|  | Application   | Suitable for CoFox® ELT 500/4 / CoFox® ELT 8 / CoFox® ELT 680  |   |   |  |   |   |
|   | Price €   |  |   |   |  |   |   |
|   | Part no.  | <b>55111</b>   |   |   |  |   |   |
|   | Response level  | Approx. 2–3 mm   |   |   |  |   |   |
|   | Temperature of medium   | 0/50 °C  |   |   |  |   |   |
|   | Probe diameter  | 75 mm  |   |   |  |   |   |
|   | Material  | PP, black  |   |   |  |   |   |
|   | Electrical connection   | Permanently installed cable, 150 cm  |   |   |  |   |   |

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Select according to the operating conditions. Special customised probes are available in addition to the standard probes listed. Please enquire.