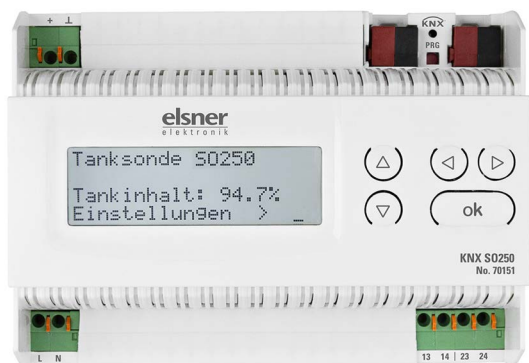




KNX S0250

Ultrasonic Probe

Item number 70151



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This manual is amended periodically and will be brought into line with new software releases. The change status (software version and date) can be found in the contents footer. If you have a device with a later software version, please check **www.elsner-elektronik.de** in the menu area "Service" to find out whether a more up-to-date version of the manual is available.

Clarification of signs used in this manual



Safety advice.



Safety advice for working on electrical connections, components, etc.

DANGER!

... indicates an immediately hazardous situation which will lead to death or severe injuries if it is not avoided.

WARNING!

... indicates a potentially hazardous situation which may lead to death or severe injuries if it is not avoided.

CAUTION!

... indicates a potentially hazardous situation which may lead to trivial or minor injuries if it is not avoided.



ATTENTION! ... indicates a situation which may lead to damage to property if it is not avoided.

ETS

In the ETS tables, the parameter default settings are marked by underlining.

1. Safety and usage instructions



Installation, testing, operational start-up and troubleshooting should only be performed by a qualified electrician.



DANGER!

Risk to life from live voltage (mains voltage)!

- Inspect the device for damage before installation. Only put undamaged devices into operation.
 - Comply with the locally applicable directives, regulations and provisions for electrical installation.
 - Immediately take the device or system out of service and secure it against unintentional switch-on if risk-free operation is no longer guaranteed.
-

Use the device exclusively for building automation and observe the operating instructions. Improper use, modifications to the device or failure to observe the operating instructions will invalidate any warranty or guarantee claims.

Operate the device only as a fixed-site installation, i.e. only in assembled condition and after conclusion of all installation and operational start-up tasks, and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

For information on installation, maintenance, disposal, scope of delivery and technical data, please refer to the installation instructions.

2. Description

The **Ultrasonic Probe KNX SO250** is used for measurement of the fill level of liquids in tanks or for distance measurement. In addition to application areas like rainwater cisterns or fuel tanks, also e. g. fish ponds or wells or the parking distance of trucks can be monitored.

The display directly indicates the distance/fill level. The integrated key pad is used for selection of the tank dimensions and setting of two relay switching outputs. When the relays are switched an additional acoustic alarm can be emitted.

The KNX software ETS software allows individual parameterization of all bus functions of the **KNX SO250**. Five switching outputs with adjustable threshold values are available.

Functions:

- **Distance measurement**

- **Fill level measurement** in spherical, rectangular and cylinder tanks. Several similar tanks as battery
- Setting of the two **relays** with the integrated display and keypad
- Setting of **bus functions** by means of the KNX software ETS. 5 switching outputs with adjustable threshold values (Threshold values can be set by parameter or via communication objects)

3. Commissioning

Configuration is made using the KNX software as of ETS 5. The **product file** can be downloaded from the ETS online catalogue and the Elsner Elektronik website on www.elsner-elektronik.de.

After the bus voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.

3.1. Addressing of the device at the bus

The equipment is delivered with the individual address 15.15.255. This can be changed via the ETS. There is a button and a control LED on the unit for this purpose.

4. Settings on the device



The display of the **KNX SO250** is only used for defining the specifications for the two output relays. Additional parameterization options can be found in the ETS programme file.

The bus allows blocking of a measurement and to request a repeated measurement. The blocking and the measured value also apply for the relays.

4.1. Standard display screen

Standard screen:

```
KNX SO250 Tank Sensor
Distance: 59.4cm
Settings >
```

or

```
KNX SO250 Tank Sensor
Tank content:
4885 Litre
Settings >
```

The display shows the currently measured distance and/or the tank content (according to the setting). If a measurement is not possible the message „No echo received!“ will be displayed.

The following settings can be made directly at the KNX SO250 Tank Sensor:

- Distance measurement
- Fill level measurement

- Relay set-up
- Acoustic alarm

The display will be dimmed after keys have not been operated for 60 seconds.

4.1.1. Function of the keys in the display menu

▶	Confirm the selection, continue with next step.
◀	Go to previous step.
▽△	Change setting (select a setting or change a value). The cursor (flashing rectangle) indicates which menu item is selected.
ok	Confirm the setting and return to the standard display screen.

4.2. Distance measurement

The **Ultrasonic Probe KNX SO250** can measure distances. The following settings are made in the menu „Distance measurement“:

- Unit of the distance display
- Time interval between measurements

Standard screen:

```
KNX SO250 Tank Sensor
Distance: 59.4cm
Settings >
```

or

```
KNX SO250 Tank Sensor
Tank content:
4885 Litre
Settings >
```

Press key ▶ once to enter the "Settings" menu.

```
Distance measur. > █
Fill level meas. >
Relay set-up >
Acoustic alarm >
```

Move the cursor (flashing rectangle on the right) using the keys ▽ and △ to the menu item "Distance measurement" and press key ▶.

```
Display in mm > █
Display in cm >
Display in m >
```

Move the cursor using the keys ▽ or △ to the required setting. You can display the distance in millimetres (mm), centimetres (cm) or meters (m). Confirm your selection by pressing the key ▶.

```
Measurement
frequency?
Once every 8 sec. █
```

Use the keys ▽ and △ to set the required time interval for the measurements.

Setting options: From 1 s to 9 s in increments of one second from 10 s to 50 s in increments of ten seconds, from 1 min to 120 min in increments of 10 minutes.

Confirm your selection by pressing the key \blacktriangleright . You will automatically return to the standard screen.

4.3. Fill level measurement

The **KNX SO250** Tank Sensor can measure the fill level of liquids in tanks. Possible tank designs are rectangular tanks, spherical tanks, vertical or horizontal tanks. If more than one similar tank exist in a battery only one tank needs to be described for the **KNX SO250** to calculate the content according to the specified tank number. The following settings are made in the „Fill level measurement“ menu:

- Tank design
- Tank volume/capacity/fill height
- Probe distance to liquid for full tank
- Number of tanks in a battery
- Unit of the fill level display
- Time interval for measurements

Standard screen:

```
KNX SO250 Tank Sensor
Distance: 59.4cm
Settings >
```

or

```
KNX SO250 Tank Sensor
Tank content:
4885 Litre
Settings >
```

Press key \blacktriangleright once to enter the “Settings” menu.

```
Distance measurem. >
Fill level meas. >█
Relay set-up >
Acoustic alarm >
```

Move the cursor (flashing rectangular at the right side) using the keys \blacktriangledown and \blacktriangle to the menu item “Fill level measurement” and press key \blacktriangleright .

```
Rectangular tank >█
Spherical tank >
Cylinder vertical >
Cylinder horizont. >
```

Move the cursor using the keys \blacktriangledown or \blacktriangle to the required setting. The KNX SO250 can determine the fill level of rectangular tanks, spherical tanks, vertical or horizontal cylindrical tanks.

Press key \blacktriangleright to confirm your selection and continue as described for the relevant tank design.

4.3.1. Rectangular tank

```
Tank volume in l >■
Tank volume in m³ >
Please select unit!
```

Move the cursor (flashing rectangular at the right side) using the keys ∇ and Δ to the required setting. You can specify the capacity of a tank in Litres (l) or cubic metres (m³). Press key \triangleright to confirm your selection.

```
Please enter the
maximum capacity
of one tank:
5000 Litres >■
```

or

```
Please enter the
maximum capacity
of one tank:
5000 m³ >■
```

Use the keys ∇ and Δ to select the maximum capacity of a tank (in a later step the number of existing tanks can be specified).

Setting options: *Litres*: 1 to 99 l in increments of one Litre, 100 to 900 l in increments of hundred Litres, 1000 to 100,000 l in increments of thousand Litres. *Cubic metres*: 1 to 99 m³ in increments of one cubic metre, 100 to 900 m³ in increments of hundred cubic metres, 1000 to 100,000 m³ in increments of thousand cubic metres.

Press key \triangleright to confirm your selection.

```
Please enter the
maximum fill level of
the tank:
230 cm ■
```

Use the keys ∇ and Δ to select the maximum fill level of the tank (1 to 254 cm).

Press key \triangleright to confirm your selection and continue as described in “Settings for all tank designs”.

4.3.2. Spherical tank

```
Please enter the inside
diameter
of the tank:
200 cm ■
```

Use the keys ∇ and Δ to select the inside diameter of a tank (1 to 1000cm).

Press key \triangleright to confirm your selection and continue as described in “Settings for all tank designs”.

4.3.3. Cylinder vertical

```
Please enter the inside
diameter
of the tank:
200 cm █
```

Use the keys ∇ and Δ to select the inside diameter of a tank (1 to 1000 cm). Press key \blacktriangleright to confirm your selection.

```
Please enter the
maximum fill level
of the tank:
230 cm █
```

Use the keys ∇ and Δ to select the maximum fill level of the tank (1 to 254 cm).

Press key \blacktriangleright to confirm your selection and continue as described in “Settings for all tank designs”.

4.3.4. Cylinder horizontal

```
Please enter the tank
length:
200 cm > █
```

Use the keys ∇ and Δ to select the length of the tank.

Setting options: 1 to 99 cm in increments of one centimetre, 100 to 900 cm in increments of hundred centimetres, 1000 to 100,000 cm in increments of thousand centimetres.

Press key \blacktriangleright to confirm your selection.

```
Please enter the
inside diameter
of the tank:
200cm █
```

Use the keys ∇ and Δ to select the inside diameter of the tank (1 to 1000 cm).

Press key \blacktriangleright to confirm your selection and continue as described in “Settings for all tank designs”.

4.3.5. Settings for all tank designs

```
Please enter the probe
distance
to the liquid for
a full tank: 15cm █
```

Use the keys ∇ and Δ to select the distance of the probe to the liquid for full tank (12 to 200 cm). Press key \blacktriangleright to confirm your selection.

```

Please enter the number
of tanks
in a battery:
 2 tanks █
  
```

Use the keys ∇ and Δ to select how many of the described tanks exist in one battery (1 to 100 tanks). Press key \triangleright to confirm your selection.

```

Display in Litres > █
Display in m³ >
Display in % >
  
```

Move the cursor to the required setting using the keys ∇ or Δ . The KNX SO250 can indicate the tank fill volume in Litres (l), cubic metres (m³) or percent (%). Press key \triangleright to confirm your selection.

```

Measurement frequency?
Once every 8 sec. █
  
```

Use the keys ∇ and Δ to specify the required time interval for the measurements.

Setting options: From 1 s to 9 s in increments of one second, from 10 s to 50 s in increments of ten seconds, from 1 min to 120 min in increments of 10 minutes.

Press key \triangleright to confirm your selection. You will automatically return to the standard screen.

4.4. Relay set-up

Standard screen:

```

KNX SO250 Tank Sensor
Distance: 59.4cm
Settings >
  
```

or

```

KNX SO250 Tank Sensor
Tank content:
 4885 Litre
Settings >
  
```

Press key \triangleright once to enter the "Settings" menu.

```

Distance measur. > █
Fill level meas. >
Relay set-up >
Acoustic alarm >
  
```

Move the cursor (flashing rectangular at the right side) to the menu item "Relay set-up" using the keys ∇ or Δ and press key \triangleright .

4.4.1. Set relay 1 / 2

```
R 1 settings >■
R 2 settings >
R 1 fault warning >
R 2 fault warning >
```

If you want to use the relay for automatic filling/emptying or for overflow/empty warning, use the keys ▾ or ▲ to move the cursor to the "R 1 settings" or "R 2 settings" menu item.

The setting options are the same for both relays. Confirm your selection with the key ▶.

```
Tank fill level >■
Tank drainage >
Overflow warning >
Empty warning >
```

Use the buttons ▾ or ▲ to move the cursor to the desired setting. Confirm your selection with the key ▶.

Tank fill level:

```
Start tank filling
with R 1 when
a minimum level of
15% is reached.
```

use the keys ▾ and ▲ to set the minimum level (in %) at which the filling of the tank is started. Confirm with the key ▶.

```
Stop tank filling
with R 1 when
a maximum level of
90% is reached.
```

Use the keys ▾ and ▲ to set the maximum level (in %) at which the filling of the tank is stopped. Confirm your setting with the key ▶. You will automatically return to the initial position.

Tank drainage:

```
Start tank drainage
with R 1 when
a maximum level of
90% is reached.
```

Use the keys ▾ and ▲ to set the maximum level (in %) at which the emptying of the tank is started. Confirm your setting with the key ▶.

```
Stop tank drainage
with R 1 when
a minimum level of
15% is reached.
```

Use the keys ▾ and ▲ to set the minimum level (in %) at which the emptying of the tank stops. Confirm your setting with the key ▶. You will automatically return to the initial position.

Overflow warning:

```
Warn "Tank is full"
with R 1 when
a maximum level of
90% is reached.
```

Use the keys ∇ and Δ to set the maximum level (in %) from which an overflow message is output. Confirm your setting with the key \triangleright . You will automatically return to the basic status.

Empty warning:

```
Warn "Tank is empty"
with R 1 when
a minimum level of
15% is reached.
```

Use the keys ∇ and Δ to set the minimum level (in %) from which an empty message is output. Confirm your setting with the key \triangleright . You will automatically return to the basic status.

4.4.2. Relay 1 / 2 for fault warning

```
R 1 settings > █
R 2 settings >
R 1 fault warning >
R 2 fault warning >
```

If you want to output a fault warning via the relay, use the keys ∇ or Δ to move the cursor to the menu item "R 1 Fault warning" or "R 2 Fault warning".

Confirm your selection with the key \triangleright . You will automatically return to the basic status.

The selected relay now closes in the event of a fault, further settings are not possible. To switch off the fault message, select a function for the relay in the "R 1/2 settings" menu item.

4.5. Acoustic alarm

The **KNX SO250** Tank Sensor can optionally emit an acoustic alarm if the actual values are below or above the values specified for the relays.

Standard screen:

```
KNX SO250 Tank Sensor
Distance: 59.4cm
Settings >
```

or

```
KNX SO250 Tank Sensor
Tank content:
4885 Litre
Settings >
```

Press key \triangleright once to enter the "Settings" menu.

```
Distance measurement >
Fill level meas. >
Relay set-up >
Acoustic alarm >
```

Move the cursor (flashing rectangular on the right side) to the menu item "Acoustic alarm" using the keys ∇ or Δ and press key \triangleright .

```
Acoustic alarm off >
with relay 1 >
with relay 2 >
with relay 1 & 2 >
```

Move the cursor to the required setting using the keys ∇ or Δ . The KNX SO250 can emit an acoustic alarm if relay 1 is switched on, if relay 2 is switched on or if relay 1 or relay 2 is switched on.

Press key \triangleright to confirm your selection. You will automatically return to the standard screen.

4.6. Language

Standard screen:

```
KNX SO250 Tank Sensor
Distance: 59.4cm
Settings >
```

or

```
KNX SO250 Tank Sensor
Tank content:
4885 litres
Settings >
```

Press key \triangleright once to enter the "Settings" menu.

```
Language >
```

Move the cursor (flashing rectangular on the right side) to the menu item "Language" using the keys ∇ or Δ and press key \triangleright .

```
Sprache : Deutsch
Language : English
Langue : Français
Lingua : Italiano v
```

Move the cursor to the desired language using the ∇ or Δ keys (German, English, French, Italian or Spanish).

Press key \triangleright to confirm your selection. You will automatically return to the standard screen.

5. Transmission protocol

5.1. Listing of all communication objects

Abbreviations

EIS types:

EIS 1 Switching 1/0

EIS 5 Floating decimal value

EIS 6 8 bit value

EIS 9 Float value

Flags:

C Communication

R Read

W Write

T Transmit

U Update

No.	Name	Function	EIS-type	Flags
0	Measured value in Litres	Output	5	C R T
1	Measured value in m ³	Output	9	C R T
2	Measured value in %	Output	6	C R T
3	Measured value in m	Output	9	C R T
4	Measured value request	Input	1	C R W
5	Lock measurement	Input	1	C R W
6	Sensor fault	Output	1	C R T
7	Min/max adjustment	Input	1	C R W
8	Request max fill level	Input	1	C R W
9	Max fill volume in Litres	Output	5	C R T
10	Max fill volume in m ³	Output	5	C R T
11	Threshold value 1 in litres: 16 bit value	Input / Output	5	C R W T U
12	Threshold value 1 in m ³ : 16 bit value	Input / Output	9	C R W T U
13	Threshold value 1 in %: 16 bit value	Input / Output	5	C R W T U
14	Threshold value 1 in m: 16 bit value	Input / Output	9	C R W T U
15	Threshold value 1: 1 = increase 0 = decrease	Input	1	C R W
16	Threshold value 1: increase	Input	1	C R W
17	Threshold value 1: decrease	Input	1	C R W
18	Threshold value 1: switching output	Output	1	C R T
19	Threshold value 1: switching output lock	Input	1	C R W
20	Threshold value 2 in litres: 16 bit value	Input / Output	5	C R W T U

No.	Name	Function	EIS-type	Flags
21	Threshold value 2 in m ³ : 16 bit value	Input / Output	9	C R W T U
22	Threshold value 2 in %: 16 bit value	Input / Output	5	C R W T U
23	Threshold value 2 in m: 16 bit value	Input / Output	9	C R W T U
24	Threshold value 2: 1 = increase 0 = decrease	Input	1	C R W
25	Threshold value 2: increase	Input	1	C R W
26	Threshold value 2: decrease	Input	1	C R W
27	Threshold value 2: switching output	Output	1	C R T
28	Threshold value 2: switching output lock	Input	1	C R W
29	Threshold value 3 in litres: 16 bit value	Input / Output	5	C R W T U
30	Threshold value 3 in m ³ : 16 bit value	Input / Output	9	C R W T U
31	Threshold value 3 in %: 16 bit value	Input / Output	5	C R W T U
32	Threshold value 3 in m: 16 bit value	Input / Output	9	C R W T U
33	Threshold value 3: 1 = increase 0 = decrease	Input	1	C R W
34	Threshold value 3: increase	Input	1	C R W
35	Threshold value 3: decrease	Input	1	C R W
36	Threshold value 3: switching output	Output	1	C R T
37	Threshold value 3: switching output lock	Input	1	C R W
38	Threshold value 4 in litres: 16 bit value	Input / Output	5	C R W T U
39	Threshold value 4 in m ³ : 16 bit value	Input / Output	9	C R W T U
40	Threshold value 4 in %: 16 bit value	Input / Output	5	C R W T U
41	Threshold value 4 in m: 16 bit value	Input / Output	9	C R W T U
42	Threshold value 4: 1 = increase 0 = decrease	Input	1	C R W
43	Threshold value 4: increase	Input	1	C R W
44	Threshold value 4: decrease	Input	1	C R W
45	Threshold value 4: switching output	Output	1	C R T
46	Threshold value 4: switching output lock	Input	1	C R W
49	Threshold value 5 in %: 16 bit value	Input / Output	5	C R W T U
50	Threshold value 5 in m: 16 bit value	Input / Output	9	C R W T U
51	Threshold value 5: 1 = increase 0 = decrease	Input	1	C R W
52	Threshold value 5: increase	Input	1	C R W
53	Threshold value 5: decrease	Input	1	C R W
54	Threshold value 5: switching output	Output	1	C R T
55	Threshold value 5: switching output lock	Input	1	C R W
56	Software version	readable	16 bit	C R

6. Parameter setting

6.1. General settings

6.1.1. Distance measurement

Sensor settings:

Sensor measures	Distance • Filling level
Distance offset in cm	<u>12</u> ... 200
Use malfunction object	Yes • <u>No</u>

Measuring behaviour:

Perform measuring	<u>cyclically</u> • on request and cyclically
Use object measuring block If the object is used: for value: 1 = Block measurement 0 = release measurement Value before 1st communication: 0	Yes • <u>No</u>

Note: If the measurement is made on request the measured value will be sent immediately.

Transmission behaviour:

Measured value	<ul style="list-style-type: none"> • <u>send cyclically</u> • send in case of change • send in case of change and cyclically
from change in % (only for sending "in case of change")	<u>1</u> ... 50
send cyclically every (only for "cyclic" sending)	<u>5 sec</u> ... 2h
Output of the measured value in	m
General sending delay after power up and programming	5 sec • <u>10 sec</u> • 20 sec • 30 sec • 1 min • 2 min • 5 min

6.1.2. Fill level measurement

Sensor settings:

Sensor measures	Distance • Filling level
Use malfunction object	Yes • <u>No</u>

Measuring behaviour:

Perform measuring	<u>cyclically</u> • on request and cyclically
Use object measuring block If the object is used: for value: 1 = Block measurement 0 = release measurement Value before 1st communication: 0	Yes • <u>No</u>

Note: If the measurement is made on request the measured value will be sent immediately.

Transmission behaviour:

Measured value	• <u>send cyclically</u> • send in case of change • send in case of change and cyclically
from change in % (only for sending "in case of change")	<u>1</u> ... 50
send cyclically every (only for "cyclic" sending)	<u>5 sec</u> ... 2h
Output of the measured value in	<u>Litre</u> • cubic metres • % • m
Send max. filling amount on request	Yes • <u>No</u>
Send max. filling amount in (only when filling amount is sent on request and measured value is displayed in % or in m)	<u>Litre</u> • cubic metres
General sending delay after power up and programming	5 sec • <u>10 sec</u> • 20 sec • 30 sec • 1 min • 2 min • 5 min

6.2. Tank and calculation (only for fill level measurement)

6.2.1. Rectangular tank

Tank design	• Rectangular • Spherical tank • Cylinder vertical • Cylinder horizontal
Volume indicated in	<u>Litres</u> • Cubic metres
Volume in Litres Volume in cubic metres	1 ... 100.000; <u>1,000</u>
Fill height in cm	1 ... 254; <u>200</u>
Fill level correction	Yes • <u>No</u>

Correction of (only if fill level is corrected)	<u>Minimum</u> • Maximum • Minimum and Maximum
Shall correction be maintained after programming?	Yes • <u>No</u>

Note: When the fill level is adjusted the parameter fill height and/or sensor head distance is adjusted in the software.

6.2.2. Spherical tank

Tank design	<ul style="list-style-type: none"> • <u>Rectangular</u> • Spherical tank • Cylinder vertical • Cylinder horizontal
Inside diameter in cm	1 ... 254; <u>100</u>

6.2.3. Cylinder vertical

Tank design	<ul style="list-style-type: none"> • <u>Rectangular</u> • Spherical tank • Cylinder vertical • Cylinder horizontal
Inside diameter in cm	1 ... 1000; <u>100</u>
Filling height in cm	1 ... 254; <u>200</u>

6.2.4. Cylinder horizontal

Tank design	<ul style="list-style-type: none"> • <u>Rectangular</u> • Spherical tank • Cylinder vertical • Cylinder horizontal
Inside diameter in cm	1 ... 254; <u>100</u>
Length in cm	1 ... 100.000; <u>200</u>

6.2.5. Settings for all tank types

Number of tanks in a battery	1 ... 100; <u>10</u>
Sensor head distance for max. fill level in cm	<u>12</u> ... 200

Note: If the overall volume exceeds 670,760 Litres correct display of the measured value is only possible in m³.

6.3. Threshold Values

Use threshold value 1	Yes • <u>No</u>
Use threshold value 2	Yes • <u>No</u>
Use threshold value 3	Yes • <u>No</u>
Use threshold value 4	Yes • <u>No</u>
Use threshold value 5	Yes • <u>No</u>

6.3.1. Threshold Value 1 / 2 / 3 / 4 / 5

Threshold value:

Unit Note: for distance measurements only "cm" allowed!	Litre • cubic metres • % • <u>cm</u>
Threshold value setpoint per	<u>Parameter</u> • Communication object

For selection of „Threshold value setpoint per parameter“:

Threshold value in Litre	1 ... 10.000.000; <u>1,000</u>
Threshold value in m ³	1 ... 10.000.000; <u>10</u>
Threshold value in %	0 ... 100; <u>10</u>
Threshold value in cm	1 ... 254; <u>10</u>
Hysteresis of the threshold value in %	<u>0</u> ... 50

For selection of „Threshold value setpoint per communication object“:

The value communicated last shall be maintained	<ul style="list-style-type: none"> • <u>not</u> • after restoration of voltage • after restoration of voltage and programming
Start threshold value in Litre Start threshold value in m ³ Start threshold value in % Start threshold value in cm valid until 1st communication (not for output after ... programming)	1 ... 10.000.000; <u>1,000</u> 1 ... 10.000.000; <u>10</u> 0 ... 100; <u>10</u> 1 ... 254; <u>10</u>
Type of threshold change	<ul style="list-style-type: none"> • <u>Absolute value with a 16 bit comm. object (l)</u> • <u>Absolute value with a 32 bit comm. object (m3 and cm)</u> • <u>Absolute value with a 8 bit comm. object (%)</u> • Increase/decrease with one comm. object • Increase/decrease with two comm. objects

Step size (only for "increase/decrease" with one/two comm. object(s))	0,1 • 0,2 • 0,5 • <u>1</u> • 2 • 5 • 10 • 20 Liter 0,1 • 0,2 • 0,5 • <u>1</u> • 2 • 5 • 10 • 20 m ³ <u>1</u> • 2 • 3 • 4 • 5 • 10 % <u>1</u> • 2 • 5 • 10 cm
Hysteresis of the threshold value in %	<u>0</u> ... 50

Switching output:

Switching delay from 0 to 1	<u>none</u> • 1 sec ... 2h
Switching delay from 1 to 0	<u>none</u> • 1 sec ... 2h
When the following conditions apply, the output is (TV = Threshold value) (SD = Switching distance)	<ul style="list-style-type: none"> • <u>TV above = 1 TV - SD below = 0</u> • TV above = 0 TV - SD below = 1 • TV below = 1 TV + SD above = 0 • TV below = 0 TV + SD above = 1
Switching output sends	<ul style="list-style-type: none"> • <u>In case of change</u> • In case of change to 1 • In case of change to 0 • In case of change and cyclically • In case of change to 1 and cyclically • In case of change to 0 and cyclically
Send switching output in a cycle of	<u>5 sec</u> ... 2 h

Blocking:

Use block of the switching output	Yes • <u>No</u>
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If „use block of switching output: Yes“ is selected:

Evaluation of the blocking object	<ul style="list-style-type: none"> • <u>if value 1: block if value 0: release</u> • if value 0: block if value 1: release
Value of the blocking object before 1. communication	<u>0</u> • 1

Behaviour of switching output

with blocking	do not send telegram • send 0 • send 1
with release	(depending on switching output sending procedure)

The switching output procedure depends on the value of the parameter „Switching output sends ...“ (see „Switching output“).

Switching output sends in case of change	<ul style="list-style-type: none"> • do not send telegram • send status of the switching output
Switching output sends in case of change to 1	<ul style="list-style-type: none"> • do not send telegram • wenn Schaltausgang = 1 → sende 1

Switching output sends in case of change to 0	<ul style="list-style-type: none">• do not send telegram• if switching output = 0 → send 0
Switching output sends in case of change and cyclically	send switching output status
Switching output sends in case of change to 1 and cyclically	for switching output = 1 → send 1
Switching output sends in case of change to 0 and cyclically	for switching output = 0 → send 0

Questions about the product?

You can reach the technical service of Elsner Elektronik under
Tel. +49 (0) 70 33 / 30 945-250 or
service@elsner-elektronik.de

We need the following information to process your service request:

- Type of appliance (model name or item number)
- Description of the problem
- Serial number or software version
- Source of supply (dealer/installer who bought the device from Elsner Elektronik)

For questions about KNX functions:

- Version of the device application
- ETS version used for the project

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