

## Conductivity transmitter with removable operating unit

- Intuitive menu structure
- Removable programming puck
- Data upload / download via puck
- Diagnostic function

Please see adapters



Conductivity transmitter with programmable outputs. Conductivity and temperature output via single or dual analog 4-20 mA. Two transistor outputs are also included. Transmitters are engineered for a wide scope of measuring ranges and can be delivered in 2-wire or 3-wire configurations. Intelligent, integrated, beautiful design fits perfectly with an assortment of easily configured fittings.

### Technical Data

#### Technical data (Pipe + conductivity meter)

**Pipe diameter** DN25 to DN110 (DN<25 with reduction)

#### Conductivity measurement

Measuring range 0.05 mS/cm... 10 mS/cm  
Resolution 1 nS/cm  
Accuracy  $\pm 3\%$  of measured value

#### Temperature measurement

Measuring range -40 °C to +130 °C (-40 to 266 °F)  
Internal resolution 0.1 °C (0.18 °F)  
Accuracy  $\pm 1$  °C (1.8 °F)  
Minimal temperature range 10 °C (i.e. 10 °C to 20 °C (50 to 68 °F) corresponding to 4... 20 mA)

#### Temperature compensation

none  
or according to a predefined graph (NaCl or ultra pure water)  
or according to a graph defined especially for your process

#### Medium temperature

with G 1½" PVC nut connection 0 °C to 50 °C (32 to 122 °F)  
with G 1½" PVDF nut connection -20 °C to 100 °C (-4 to 212 °F) restricted by the used adaptor  
restriction with adaptor S022 in:  
- PVC: 0 °C to 50 °C (32 to 122 °F)  
- PP: 0 °C to 80 °C (32 to 176 °F)  
- Metal: -20 °C to 100 °C (-4 to 212 °F)

**Fluid pressure max** PN16 (232 PSI) (see Pressure/Temperature chart)

#### Environment

**Ambient temperature** -10 °C to +60 °C (14 to 140 °F) (operating and storage)

**Relative humidity**  $\leq 85\%$ , without condensation

#### Electrical data

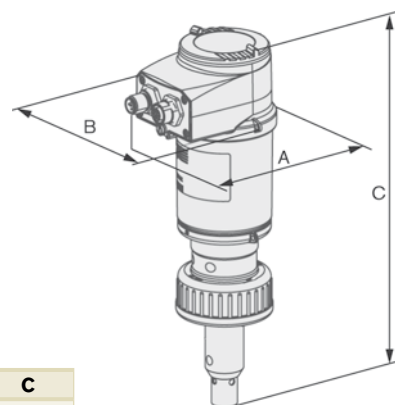
**Power supply**  
4 outputs meter (3-wire) 12 - 36 V DC, filtered and regulated

**Current consumption with sensor**  
4 outputs meter (3-wire)  $\leq 1$  A (with the 2 transistors loads)  
 $\leq 5$  mA (at 12 V DC without transistors load, without current loop)

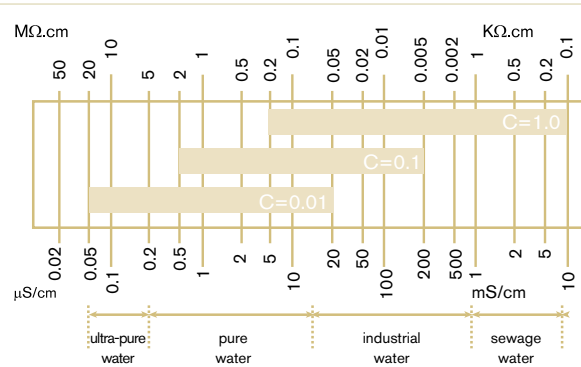
**Reversed polarity of DC** Protected

**Voltage peak** Protected

### Envelope Dimensions [mm] (see datasheet for details)



| A  | B  | C   |
|----|----|-----|
| 97 | 70 | 244 |



The electrode is selected according to the measuring range and medium by using this table.

|                           |  |
|---------------------------|--|
| <b>Short circuit</b>      | Protected for transistor outputs   |
| <b>Output</b>             |  |
| Transistor                | configurable as sourcing or sinking (respectively both as PNP or NPN), open collector max. 700 mA, 0.5 A max. per transistor if the 2 transistor outputs are wired<br>output NPN: 0.2 - 36 V DC<br>output PNP: V+ power supply |
| Current                   | 4... 20 mA programmable as sourcing or sinking,  |
| 4 outputs meter (3-wire)  | configurable in the same mode as transistor: sourcing or sinking,<br>max. loop impedance: 1100 W at 36 V DC;<br>610 W at 24 V DC; 100 W at 12 V DC   |
| Response time (10% - 90%) | 150 ms (standard)  |
| <b>General data</b>       |  |
| <b>Compatibility</b>      | Any pipe which are fitted out with Bürkert adaptor S022 (see separate data sheet)  |

#### Materials


|                                |  |
|--------------------------------|--|
| Housing/cover                  | Stainless steel 1.4561, PPS / PC   |
| Seals/Screws                   | EPDM / Stainless steel   |
| Fixed connector mounting plate | Stainless steel  |
| Fixed connector                | Brass nickel plated  |
| Display/navigation key         | PC / PBT   |
| Nut                            | PVC or PVDF  |
| Wetted part materials          |  |
| Conductivity sensor            | PVDF, stainless steel 1.4571 (316Ti)   |
| Electrode                      | Stainless steel 1.4571 (316Ti) for cell constant C=0.01 or C=0.1 or graphite for cell constant C=1.0 |

|  |  |
|--|--|
| <b>Temperature sensor</b>                  | Pt1000 (316Ti) integrated in the sensor  |
| <b>Display (accessories)</b>               | Grey dot matrix 128x64 with backlighting   |
| <b>Electrical connections</b>              |  |
| 4 outputs meter (3-wire)                   | 1x 5-pin M12 male + 1x 5-pin M12 female fixed connectors                             |
| <b>Connection cable</b>                    | Shielded cable   |
| <b>Standards, directives and approvals</b> |  |
| <b>Protection class</b>                    | IP65 and IP67 with M12 cable plug mounted and tightened and cover fully screwed down |

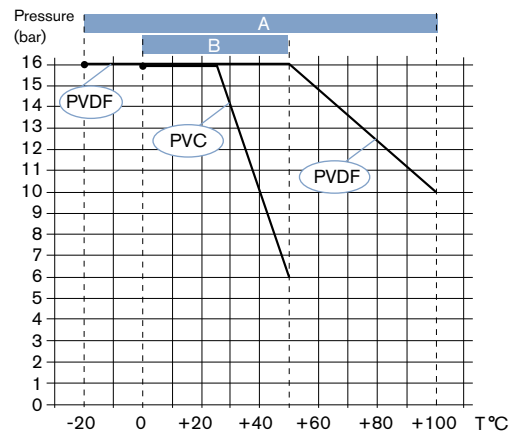
#### Standard and directives

|                   |  |
|-------------------|--|
| EMC               | EN 61000-6-2, EN 61000-6-3                               |
| Pressure          | Complying with article 3 of §3 from 97/23/CE directive.* |
| Vibration / Shock | EN 60068-2-6 / EN 60068-2-27                             |

#### Approvals

|   |                                  |
|---|----------------------------------|
| UL-Recognized for US and Canada  | 61010-1 + CAN/CSA-C22 No.61010-1 |
|---|----------------------------------|

## Pressure/Temperature chart



Application range of a 8222 ELEMENT conductivity meter:

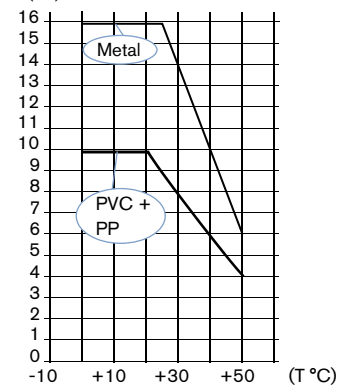
**A** : with PVDF nut (on request)

**B** : with PVC nut

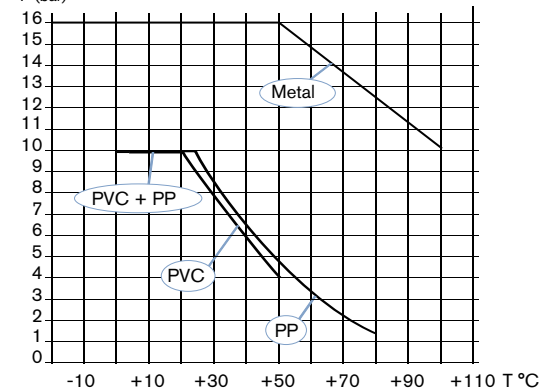
The measures have been made at an ambient temperature of 60 °C.

Application range of a 8222 ELEMENT conductivity meter

- with PVC nut with S022 adaptor  
P (bar)



- with PVDF nut with S022 adaptor  
P (bar)



## Ordering Chart

| Nut material | Cell constant | Electrical connection               | Item No |
|--------------|---------------|-------------------------------------|---------|
| PVC          | C = 0.01      | 5-pin M12 male and 5-pin M12 female | 559 619 |
|              | C = 0.1       | 5-pin M12 male and 5-pin M12 female | 559 615 |
|              | C = 1.0       | 5-pin M12 male and 5-pin M12 female | 559 611 |
| PVDF         | C = 0.01      | 5-pin M12 male and 5-pin M12 female | 559 621 |
|              | C = 0.1       | 5-pin M12 male and 5-pin M12 female | 559 617 |
|              | C = 1.0       | 5-pin M12 male and 5-pin M12 female | 559 613 |

## Accessories

| Description  | Item No |
|--|---------|
| Display/programming module                           | 559 168 |
| Electrical connector, 5-pin M12 male, plug only      | 560 946 |
| Electrical connector, 5-pin M12 male, 2 m prewired   | 559 177 |
| Electrical connector, 5-pin M12 female, plug only    | 917 116 |
| Electrical connector, 5-pin M12 female, 2 m prewired | 438 680 |

### Note

For a complete transmitter the following items must be ordered:

- Transmitter, Type 8222 ELEMENT
- Display/programmer module
- INSERTION Adapters (see Type S022)
- M12 cable socket, cable connector (only cable socket for a 4-20 mA current output, cable and cable connector for two 4-20mA current outputs)

Dimensions [mm] of conductivity meter Type 8222

