

Inductive conductivity meter

8228

- Configurable outputs: up to 2 transistor and up to 2 analogue 4... 20 mA outputs
- Removable backlighted display
- Simulation of process values and diagnostic functions
- Sensor-versions available with PEEK, PVDF or PP

Please see fitting S020



The analysis gauge, Type 8228, includes a detachable display module. This is used for setup, configuration and calibration or required as a process value display. For temperature calibration, a temperature sensor is included as standard.

Technical Data

Complete device data (Fitting + conductivity meter)

Pipe diameter	DN15 to 400
Conductivity measurement	
Measuring range	100 µS/cm...2 S/cm
Resolution	0.1 µS/cm
Measurement deviation	±(2% of the measured value + 5 µS/cm)
Linearity	±2%
Repeatability	±(0.2% of the measured value + 2 µS/cm)
Response time t90	from 3 s (without filter) to 40 s (with slow filter)

Temperature measurement

Measuring range	-40 °C to +150 °C (-40 to 302 °F)
Resolution	0.1 °C (0.18 °F)
Measuring uncertainty	±1 °C (1.8 °F)
Response time t90	< 280 s (without filter)

Temperature compensation

- none or
- according to a predefined graph (NaCl, NaOH, HNO3 or H2SO4) or
- according to a graph defined especially for your process

Medium temperature with conductivity sensor in

PVDF	-15 °C to +100 °C (5 to 212 °F)
PP	0 °C to +80 °C (32 to 176 °F)
PEEK	-15 °C to 130 °C (5 to 266 °F)

Temperature limits may depend on the material the S020 fitting used is made of. Refer to the relevant data sheet or instruction manual and the pressure/temperature diagram of the fluid on page 3. If the temperature ranges given for the device and the fitting are different, use the most restrictive range.

Fluid pressure (max.) with conductivity sensor in

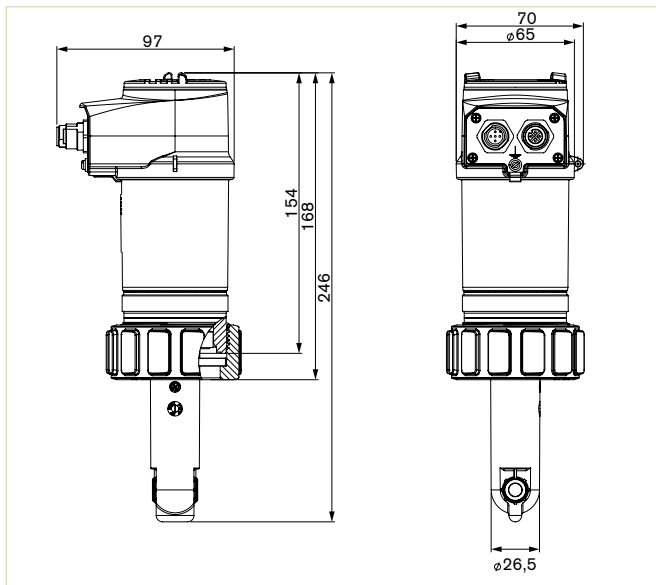
PVDF, PP	PN6 (87 PSI)
PEEK	PN10 (145 PSI)

Pressure limits may depend on the material the S020 fitting used is made of. Refer to the relevant data sheet or instruction manual and the pressure/temperature diagram of the fluid on page 3. If the temperature ranges given for the device and the fitting are different, use the most restrictive range.

Environment

Ambient temperature	-10 °C to +60°C (14 to 140 °F) (operating and storage)
Relative humidity	≤ 85%, without condensation
Height above sea level	Max. 2000 m

Envelope Dimensions [mm] (see datasheet for details)



Technical Data (continued)

General data

Compatibility	Any pipe which are fitted out with Bürkert INSERTION Fitting S020 (see corresponding data sheet)
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Materials

Housing / Cover	Stainless steel 1.4404, PPS / PC
Seal / Screws	EPDM / Stainless steel
Fixed connector holder	Stainless steel 1.4404 (316L)
M12 fixed connector	Brass nickel plated
Display / Navigation key	PC / PBT
Nut	PC

Wetted part materials

Sensor holder	PP, PVDF or PEEK
Seal	FKM (standard) or EPDM (option)

Temperature sensor

Integrated in the sensor

Display (accessories)

Grey dot matrix 128x64 with backlighting

Electrical connections

2 outputs meter (3-wire)	1x 5-pin M12 male fixed connector,
4 outputs meter (3-wire)	1x 5-pin M12 male + 1x 5-pin M12 female fixed connectors

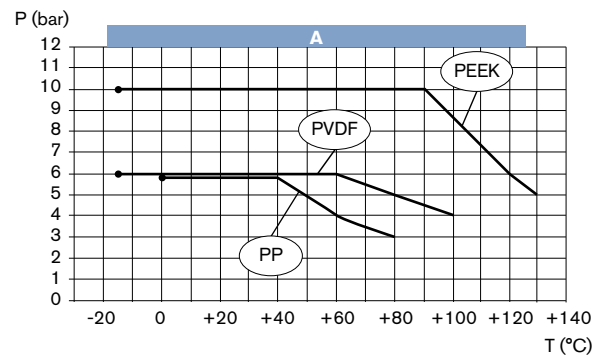
Connection cable

Shielded cable, ø 3 to 6.5 mm; max. 0.75 mm² cross section

Technical Data (continued)

Electrical data	
Supply voltage	12 - 36 V DC, $\pm 10\%$ oscillation rate, filtered and regulated, SELV (safety extra low voltage) circuit with a non dangerous energy level
Current consumption with sensor	≤ 25 mA (at 12 V DC and without the consumption of the 4... 20 mA output)
Reversed polarity of DC	Protected
Voltage peak	Protected
Short circuit	Protected
Output	
Transistor	Polarized, galvanically insulated configurable through wiring and through parameterizing as sourcing (PNP) or sinking (NPN) output NPN: 1 - 36 V DC, max. 700 mA (or 500 mA max. per transistor if both transistor outputs are wired) output PNP: V+ supply voltage, max. 700 mA (or 500 mA max. per transistor if both transistor outputs are wired)
Current (3-wire)	4... 20 mA configurable through wiring and through parameterizing as sourcing or sinking, 22 mA to indicate a fault (can be parametered) max. loop impedance: 1100 W at 36 V DC; 610 W at 24 V DC; 100 W at 12 V DC
Uncertainty of the output value	1% of the full scale
Response time (10% - 90%)	150 ms (default value)
Standards, directives and approvals	
Protection class acc. to EN 60529	IP65 and IP67 with M12 connectors plugged in and tightened and electronic module cover fully screwed down
Standard and directives	
CE	
EMC	EN 61000-6-2, EN 61000-6-3 and Annex1, EN 61326-1-7 (Table 2)
Pressure	Complying with article 3 of §3 from 97/23/CE directive.*
Vibration / Shock	EN 60068-2-6 / EN 60068-2-27

Pressure/temperature chart



A: Application range for complete device (conductivity meter with either PP, PVDF or PEEK sensor inserted into a Stainless steel S020 fitting)

8228

Ordering Chart

Holder material	Output	Seal material	Electrical connection	Item No
PP	1 x transistor NPN/PNP + 1 x 4 to 20 mA	FKM	5-pin M12 connector	566 601
	2 x transistor NPN/PNP + 2 x 4 to 20 mA	FKM	5-pin M12 male connector + 5-pin M12 female connector	566 602
PVDF	1 x transistor NPN/PNP + 1 x 4 to 20 mA	FKM	5-pin M12 connector	566 603
	2 x transistor NPN/PNP + 2 x 4 to 20 mA	FKM	5-pin M12 male connector + 5-pin M12 female connector	566 604
PEEK	1 x transistor NPN/PNP + 1 x 4 to 20 mA	FKM	5-pin M12 connector	566 605
	2 x transistor NPN/PNP + 2 x 4 to 20 mA	FKM	5-pin M12 male connector + 5-pin M12 female connector	566 606

Note for ordering chart:

For a complete conductivity unit the following items must be ordered:

- Transmitter Type 8228
- INSERTION Fitting Type S020

Further versions and information see datasheet type 8228.

Options

- UL and CSA approvals
- Preparameterized conductivity meters