



The conductivity sensor for sanitary use

Conductivity sensor

Application

The Alfa Laval conductivity sensor is designed to fulfill the demands of conductivity sensors in Sanitary production. The main features are:

- Wetted parts in AISI316L, stainless steel or PEEK
- Compact, food compatible, hygienic design
- Process temperature -20 to 140°C
- 4 configurable measuring ranges
- Adjustable, active temperature compensation
- Insensitive to polarization, adhesion and solids
- LCD display for conductivity and temperature
- 4-20 mA output for conductivity and temperature



TECHNICAL DATA

Temperature

Measuring range: -20 to 140°C
Resolution: 0.1°C
Accuracy: $\leq \pm 0.2^\circ\text{C}$ between 20 and 50°C
 $\leq \pm 1.5^\circ\text{C}$ between -20 and 140°C
Repeatability: 0.2% of FS
Protection class: IP67
Max media pressure: 10 bar

Electrical data

Power supply: 12-36 Vdc
Power consumption max: 180 mA
Output conductivity: 4-20 mA, max. load 500 Ohm,
Output temperature: 4-20 mA, max. load 500 Ohm,
Connection: M12 plug or M16 cable gland
Response time: <3 ms

PHYSICAL DATA

Sensor length (L): 38 or 84 mm

Materials

Wetted parts: AISI 316L and PEEK
Fieldhouse: AISI 304

Operating temperature

Wetted parts: -20 to 130°C (140°C < 1 hour)
Field house: -20 to 60°C

Weight

Conductivity sensor: Approx. 1500 gr.

Process connection

- Clamp DN38 (ISO2852)/clamp DN40 (DIN32676)
- Clamp DN50 (ISO2852)/clamp DN51 (DIN32676)
- G1" (ISO228)
- DN32 (DIN11851)
- DN40 (DIN11851)
- DN50 (DIN11851)

Certificates

3.1 (Option) (FDA conformity declaration for Peek materials included)

Conductivity

Accuracy: ±1% of the selected range

Measuring range: 0 to 999 mS/cm

Range		Resolution
0 to 0.5	mS/cm	0.001 mS/cm
0 to 1	mS/cm	0.001 mS/cm
0 to 2	mS/cm	0.010 mS/cm
0 to 3	mS/cm	0.010 mS/cm
0 to 5	mS/cm	0.010 mS/cm
0 to 10	mS/cm	0.100 mS/cm
0 to 20	mS/cm	0.100 mS/cm
0 to 30	mS/cm	0.100 mS/cm
0 to 50	mS/cm	0.100 mS/cm
0 to 100	mS/cm	1.000 mS/cm
0 to 200	mS/cm	1.000 mS/cm
0 to 300	mS/cm	1.000 mS/cm
0 to 500	mS/cm	1.000 mS/cm
0 to 999	mS/cm	1.000 mS/cm

Standard range

The Alfa Laval conductivity sensor is a sensor for inductive measurement of conductivity. The compact design in all stainless steel enables installation in pipes from DN40 and upwards. Precise, configurable temperature compensation and remote setting of the four pre-configured measuring ranges make the Alfa Laval conductivity sensor ideal for a wide range of conductivity measurements. The integrated display for mS/cm and °C offers the user instant local supervision, which is an advantage e.g. in manually operated cleaning systems.

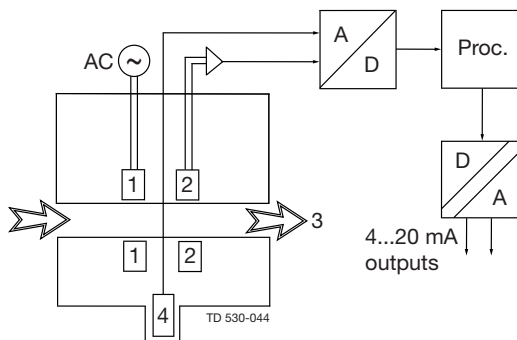
A high operating temperature limit is an advantage in SIP systems. The optimized flow geometry and the fast response time make the Alfa Laval conductivity sensor particularly suitable in applications for separation of medias and measurements of cleaning agents in CIP equipment. The accuracy is excellent even at very low conductivity and flow rates.

Working principle

Inductive conductivity measurement is based on the principle of a transformer. The primary side of the transformer is controlled by an AC voltage generator. The liquid flowing through the channel bore (3) in the measuring head and forms a conductor loop, which links between the primary side of the transformer (1) and the secondary side of the transformer (2).

The output current is proportional with the conductivity of the media. Signal conditioning, amplification and conversion provide a 4-20 mA signal output from the galvanically isolated D/A converter.

The fast-response temperature sensor in the tip (4) compensates for the temperature in the liquid resulting in maximum accuracy and reliability.



Electrical data

Both output signals are as standard galvanically isolated from the power supply. Adjustment of measuring range and local readout of conductivity and temperature is done via jog wheel and LCD display in field housing. Range selection can also be done remotely.

99.9 mS/cm 139.9 °C / 283.8° F Max. indication	0.001 mS/cm 000.1 °C Min. indication
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LCDisplay

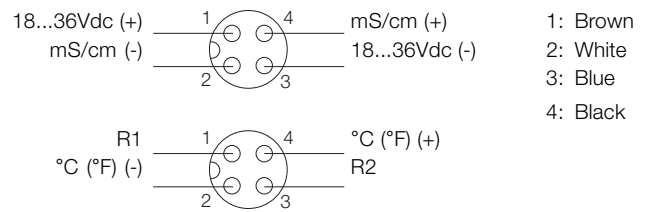


Jog shuttle

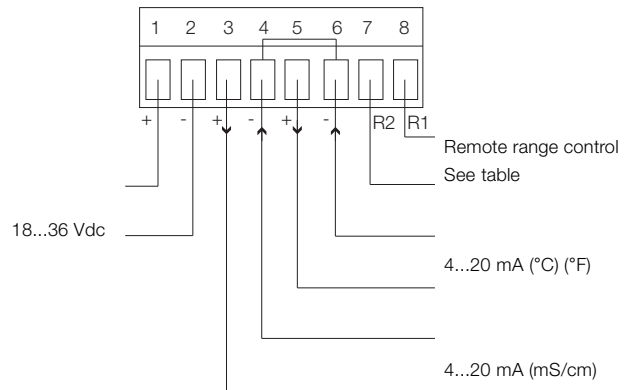
- PUSH: SW version
- TURN: Select menu
- PUSH: Config menu
- TURN: Select option
- Left: Decrease
- Right: Increase

Refer to installation manual

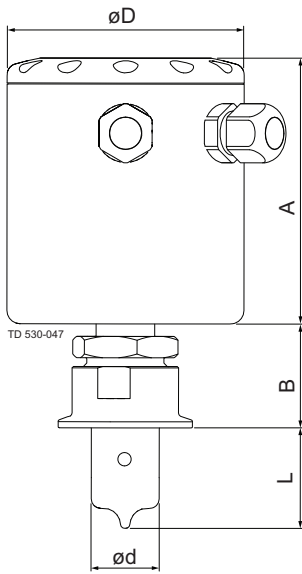
Electrical connections M12 plug



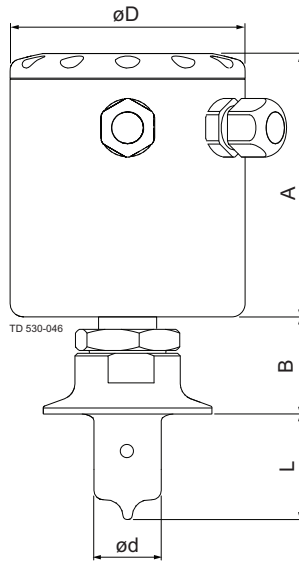
Electrical connection M16 cable gland



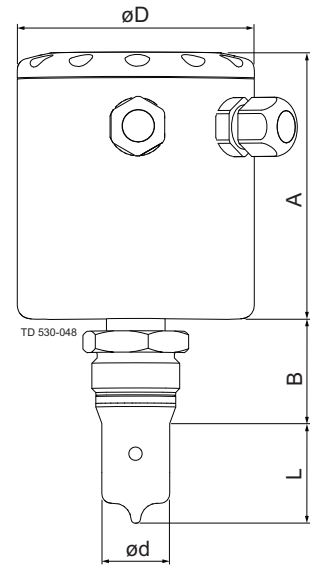
Dimensional drawing (mm)



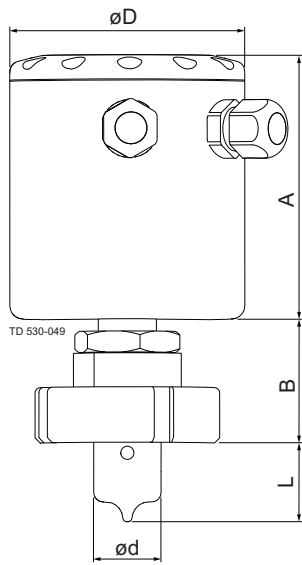
Clamp 1 1/2 (ISO2852/DIN32676):
TE67K1311111XX
TE67K1211111XX



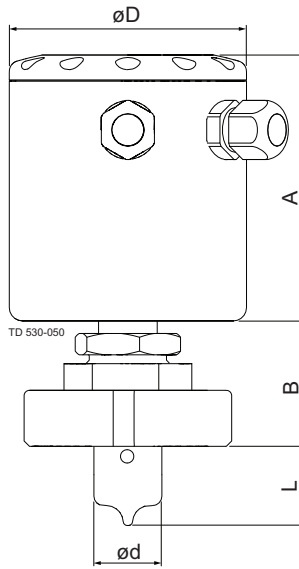
Clamp 2" (ISO2852/DIN32676):
TE67K1711111XX
TE67K1811111XX



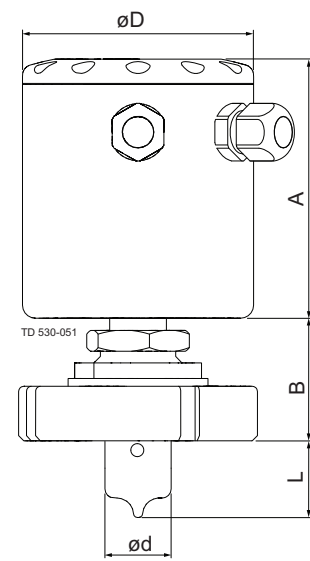
G1": (ISO228)
TE67K1511111XX
TE67K1611111XX



DN32 (DIN11851):
TE67K1511111XX
TE67K1611111XX



DN40 (DIN11851):
TE67K1B11111XX
TE67K1E11111XX



DN50 (DIN11851):
TE67K1B11111XX
TE67K1E11111XX

A	B	D	d
98	35	89	25.5

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