

# Sensors for Conductivity Measurement

Chem



## SE 656 Toroidal Conductivity Sensor

**Special and precise sensor with high chemical resistance over a very large measuring range, for heavily polluted and strongly oxidizing media**

Corrosion-resistant toroidal sensor for measuring pure water up to maximum conductivities. Insensitive to strongly oxidizing media. Smooth, easy-to-clean design. High accuracy due to electrodeless measurement. Low risk of contamination because of large sensor opening. Also suitable for hazardous locations.

### Facts

- Robust design
- Extremely large measuring range due to inductive measuring principle
- Insensitive to contamination
- No process-wetted electrodes
- Extremely high chemical resistance (PFA)
- Measurement in hazardous locations

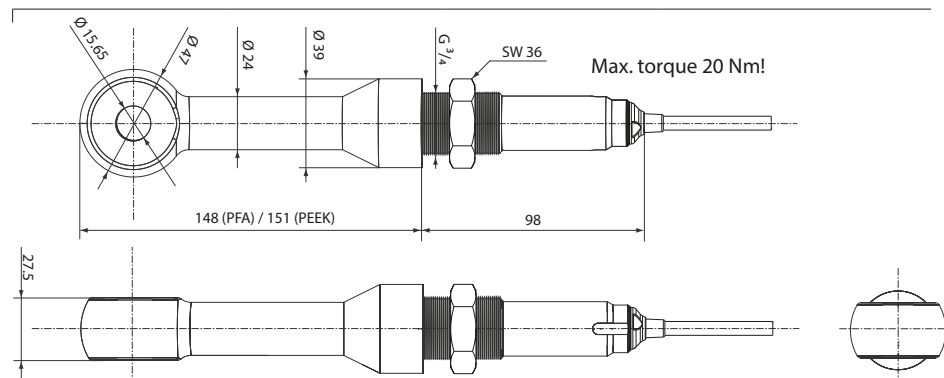
### Applications

Conductivity measurement of highly concentrated acid and alkaline solutions, hydrofluoric acid, nitric acid, concentrated sulfuric acid, oleum, concentrated alkaline solutions, strongly oxidizing media

### Specifications

Cell factor:	Approx. 2/cm ( $\geq 30$ mm distance to wall)
Measuring range:	0.002 to 2000 mS/cm
Accuracy:	$\pm (5 \mu\text{S/cm} + 0.5 \% \text{ measured value})$ at $-20 \text{ }^\circ\text{C} \dots +100 \text{ }^\circ\text{C}$ $\pm (10 \mu\text{S/cm} + 0.5 \% \text{ measured value})$ at $>100 \text{ }^\circ\text{C}$
Material:	Cell: PFA ; Gasket: FFKM (Chemraz)
Temperature detector:	Pt 100 (Class A)
Temp. response time $t_{90}$ :	Approx. 11 min
Temperature:	$-20 \dots +125 \text{ }^\circ\text{C}$
Pressure:	0 ... 16 bar
Cable:	Fixed cable, 5 m
Protection:	IP 68 (when mounted)
Assembly:	G 3/4" (36-mm nut and FFKM (Chemraz) gasket included in shipment)
ATEX Certificate (SE 656 X):	II 1 G Ex ia IIC T4/T6 Ga

### Dimension Drawing



All dimensions in mm

**Product Range**

SE 656 conductivity sensor	G 3/4"
SE 656X conductivity sensor	G 3/4"

Order No.

<b>SE 656</b>
<b>SE 656X</b>

**Accessories**

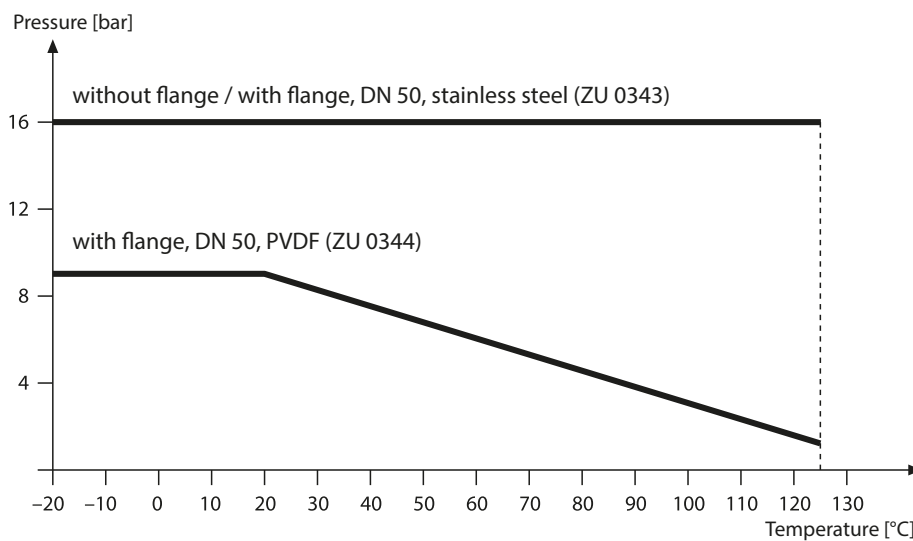
Flange DN 50 PN 16	Material: 316 L
Flange DN 50 PN 10	Material: PVDF
Sealing set A (spare parts)	Nut + FKM (Viton) O-ring (3 x)
Sealing set C	PTFE washer, DN 50 (protects ZU 0343 flange against aggressive media)
Conductivity standard*)	KCl 0.1 mol/l 12.88 mS/cm ± 1.5 % 250 ml

Order No.

<b>ZU 0343</b>
<b>ZU 0344</b>
<b>ZU 0340N</b>
<b>ZU 0342N</b>
<b>ZU 0348</b>

\*) Observe instructions for use (field conditions)

**Pressure/Temperature Diagram**



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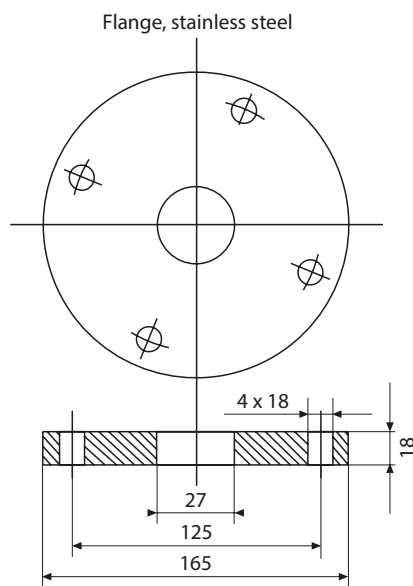
### Accessories / Specifications

316 L flange  
ZU 0343



DN 50 PN 16

Dimension drawing:

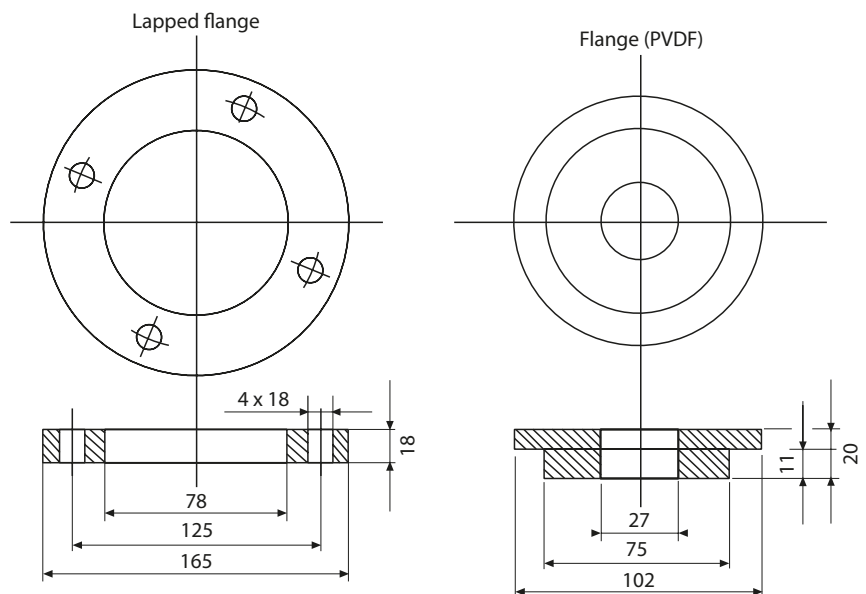


PVDF flange  
ZU 0344



DN 50 PN 10

Dimension drawings:



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### Overview of Accessories and Assembly

Example:

