

# Conductivity Sensors



## SE 656N Digital Toroidal Conductivity Sensor

Conductivity sensor with maximum chemical resistance to highly oxidizing media.

The SE 656N toroidal conductivity sensor is a sturdy and corrosion-resistant sensor that, thanks to its high chemical resistance and durability when exposed to aggressive media, is particularly suitable for applications in the chemical industry. A combination of a large sensor opening and dirt-repellent material prevents blockages and deposits in media with a high pollution degree. The inductive measuring principle enables full galvanic isolation of the measurement from the medium.

The sensor is an all-rounder, suitable for a multitude of applications with a range covering six decades. Equipped with Memosens protocol as a digital version, it offers considerable process and data security, and ensures reliable data recording.

### Applications

Concentration measurement, in particular of highly oxidizing acids and bases, online quality monitoring of chemical products in tanks and pipes, phase separation of product mixtures, paper manufacturing (high fiber concentration), heavily soiled media and wastewater, fouling media.

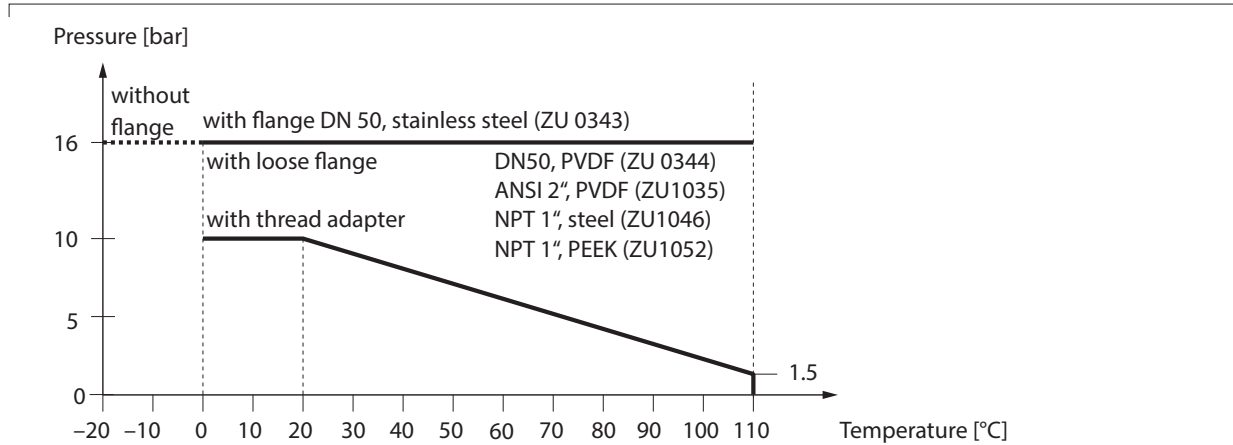
### Facts

- Process-wetted material: PFA
- Sturdy design
- Resistant to contamination and fouling
- Range of six decades
- Inductive measuring principle, full galvanic isolation of sensor coils from process medium
- Digital with Memosens protocol

### Specifications

Cell factor:	1.98/cm ( $\geq 30$ mm wall clearance)
Measuring range:	0 ... 2,000 mS/cm
Resolution:	0.002 mS/cm
Measurement error $-4$ °F ... 212 °F ( $-20$ ... $+100$ °C):	$\pm 0.005$ mS/cm + 0.5 % of measured value
Measurement error $>212$ °F ( $>100$ °C):	$\pm 0.010$ mS/cm + 0.5 % of measured value
Material:	PFA
Temperature detector:	Pt1000 (Class A in acc. with IEC 60751)
Temperature response time $t_{90}$ (DIN 746-1):	approx. 11 min
Process temperature:	$-4$ °F ... 230 °F ( $-20$ ... 110 °C)
Ambient temperature:	$-4$ °F ... 140 °F ( $-20$ ... 60 °C)
Storage temperature:	$-4$ °F ... 176 °F ( $-20$ ... 80 °C)
Relative process pressure:	0 ... 232.06 psi (see pressure/temperature diagram)
Cable:	Fixed cable, 7 m with ferrules
Protection (EN 60529):	IP 68 (sensor mounted, with original gasket)
Mounting:	G $\frac{3}{4}$ " (nut A/F 36 and FFKM (Chemraz) gasket included in package contents)

**Pressure/Temperature Diagram**



**Product Range**

SE 656N conductivity sensor      Digital, with Memosens protocol

7 m cable

**Order No.**

SE 656N -GEFTW0KM

**Accessories**

NPT 1" adapter

Material: Stainless steel

ZU 1046

Material: PEEK

ZU 1052

Flange DN 50 PN 16<sup>1)</sup>

Material: 316 L

ZU 0343

Flange, DN 50 PN 10

Material: PVDF

ZU 0344

Flange ANSI 2", 150 lbs

Material: PVDF

ZU 1035

Gasket set B

Nut + FFKM O-ring (1 pc)  
Replacement for SE 656N-GEFTW0KM

ZU 0341N

Sealing kit C

PTFE washer DN 50  
(protects ZU 0343 flange against aggressive media)

ZU 0342N

O-ring

Material: FKM  
Material: EPDM-FDA  
Material: FFKM

O-ring 30x2.5 FKM  
O-ring 30x2.5 EPDM-FDA  
O-ring 30x2.5 FFKM

Conductivity standard<sup>2)</sup>      KCl      0.1 mol/l      12.88 mS/cm ±1.5 %

500 ml

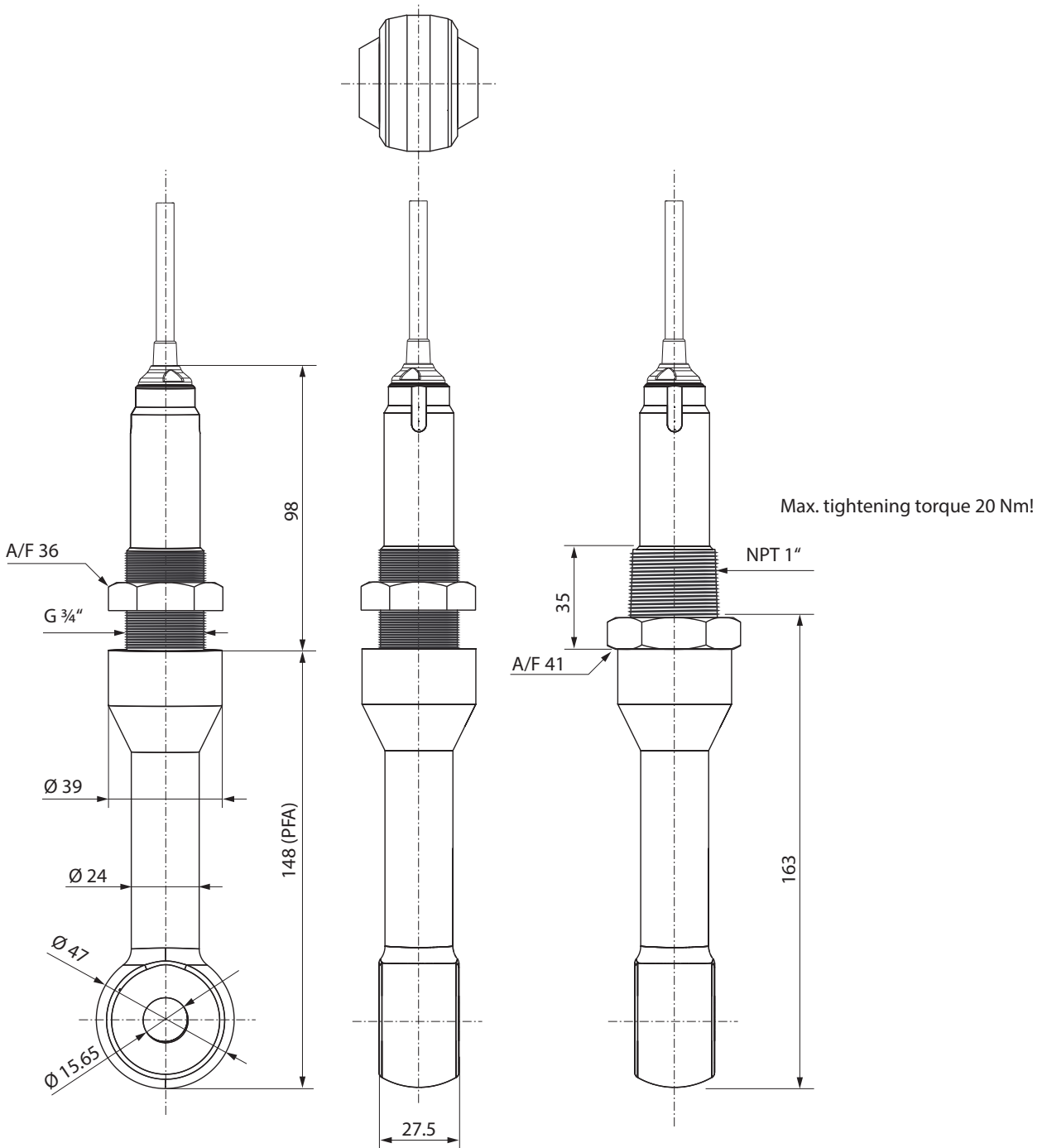
CS-C12880K/500

<sup>1)</sup> When measuring in aggressive media, sealing kit C is additionally required

<sup>2)</sup> Check the user manual (field conditions)

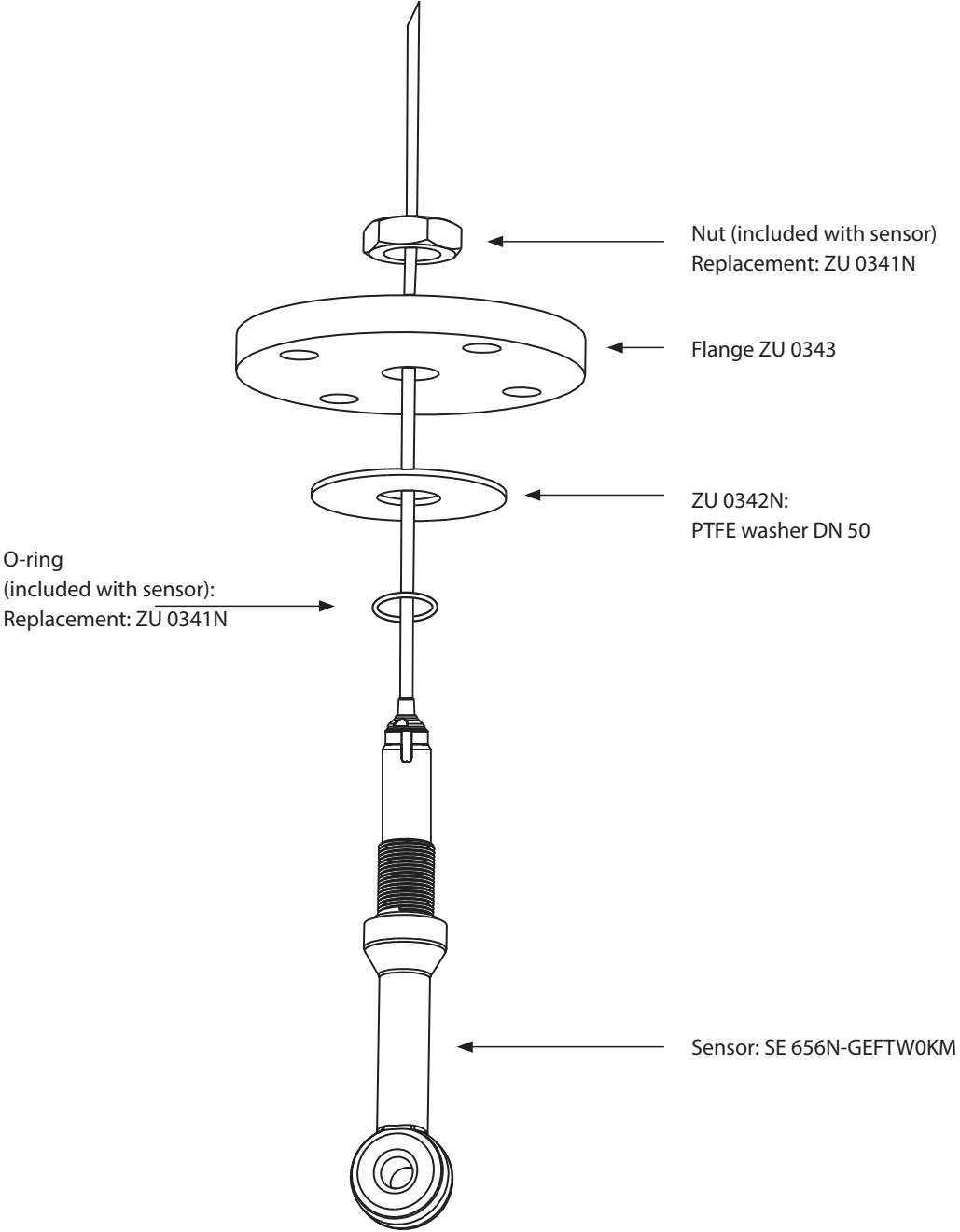
# Conductivity Sensors

## Dimension Drawing



**Overview of Accessories and Installations**

Example: Flange DN 50 stainless steel, with PTFE washer

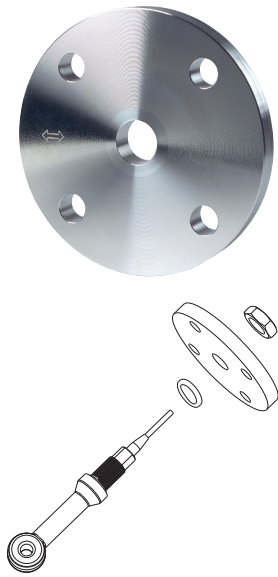


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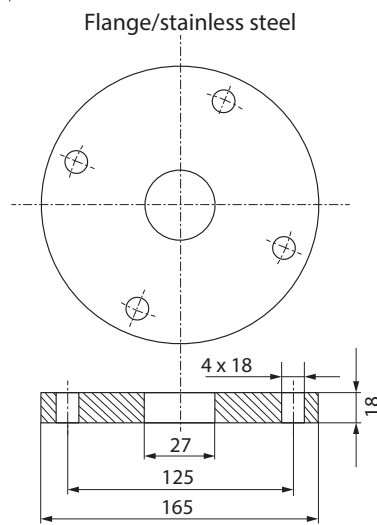
## Accessories/Specifications

Flange 316 L  
ZU 0343

DN 50 PN 16



Dimension drawing:

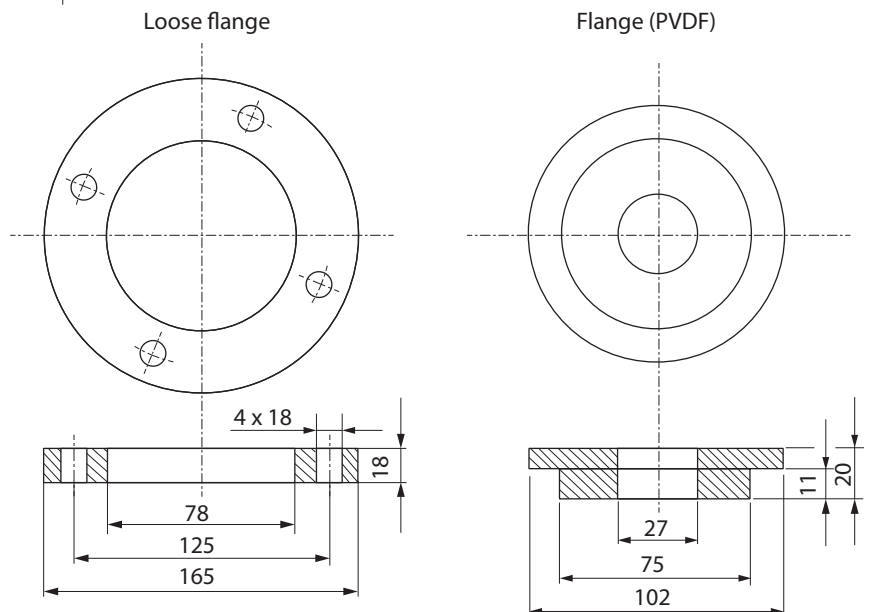


Flange PVDF  
ZU 0344

DN 50 PN 10



Dimension drawing:

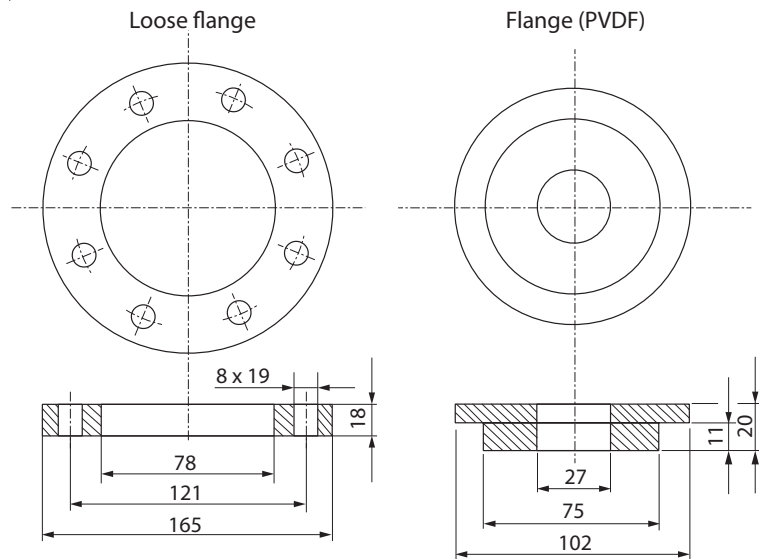
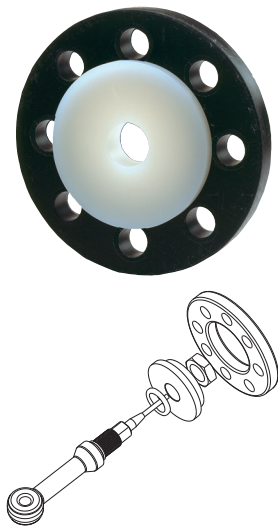


**Accessories/Specifications**

Flange ANSI 2"  
ZU 1035

150 lbs

Dimension drawing:



NPT 1" adapter

Stainless steel ZU 1046  
PEEK ZU 1052

Dimension drawing:



A/F 41 mm

