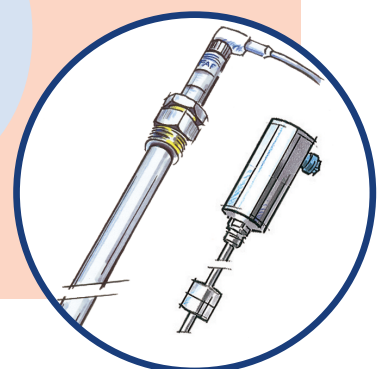


# Continuous Level Sensor CONDURIX

3  
1.1





# CONDURIX

## The Continuous Measurement of Filling Levels according to the Potentiometric Measuring Principle

The CONDURIX Sensor supplies information on filling levels of tanks. As a continuous level measurement or separating layer measurement it creates quality assurance and safety in the process.

### Application

The sensor CONDURIX is especially designed for use in continuous filling level measurement or continuous separating layer coverage. It is suitable for all electrically conductive liquids of  $\geq 1 \mu\text{S}/\text{cm}$ .



### Advantages of FAFNIR's Technology

- Measuring precision better than  $\pm 1\text{mm}$
- Micro-controlled measurement analysis
- 2-wire connection (4-20mA)
- Measuring result independent of pressure, temperature and density
- Filling level or separating layer coverage
- Very short measuring times in ms-range
- Suitable in all electrically conductive liquids  $\geq 1 \mu\text{S}/\text{cm}$
- Durability due to robust structure
- Measuring range freely adjustable for total probe length
- HART®**-protocol 
- ATEX approval for zone 0

## Function

The sensor works according to the potentiometric measuring principle. By means of the micro-controlled sensor electronics the current impulses are transmitted through the sensor electrode which is electrically insulated from the tank or external tube. This leads to a linear voltage drop on its electrical resistance. If the sensor electrode is dipped into a conductive liquid ( $\geq 1 \mu\text{S}/\text{cm}$ ) an electrical connection to the environment is created. The electrical potential is proportional to the filling level and is measured via a counterelectrode or the tank wall. In order for the input resistance of the measuring electronics to be big enough compared to the electrical resistance of the medium the conductivity of the liquids has to be  $\geq 1 \mu\text{S}/\text{cm}$ .

## Installation

The corresponding probes with flange or other process connections for each tank will receive probe lengths according to customer measurements.

## Design

### CONDURIX consists of:

- stainless steel housing (1.4305)
- stainless steel probe tube (1.4571); Hastelloy C; further on request
- Process connection: stainless steel screw-in unit; stainless steel flange 1.4571; plated with Hastelloy
- PEEK, PTFE seals; further on request

## Technical Data

### CONDURIX Sensor:

#### Connection:

- as required (e.g. screw-in unit, flange, ...)

#### Housing:

- protection type IP68

#### Functional Range:

- conductivity of measuring medium must be  $\geq 1 \mu\text{S}/\text{cm}$

#### Measuring Precision

##### Filling Level:

- better than  $\pm 1 \text{ mm}$
- resolution:  $< 0.1 \text{ mm}$
- analogue part:  $\pm 0.1 \% (20^\circ\text{C}) + 0.005 \% / \text{K}$

#### Measuring Precision

##### Separating Layer:

- continuous (the accuracy depends on the properties of the separating layer)
- resolution:  $< 0.1 \text{ mm}$
- analogue part:  $\pm 0.1 \% (20^\circ\text{C}) + 0.005 \% / \text{K}$

### Temperature Range:

- ambient temperature:  $-25^\circ\text{C}$  to  $+80^\circ\text{C}$
- media temperature: normal temp. design  $-40^\circ\text{C}$  to  $+125^\circ\text{C}$   
high temp. design  $-40^\circ\text{C}$  to  $+200^\circ\text{C}$

### Pressure Range:

- PEEK seals  
 $P_{\text{max}} = 20 \text{ MPa}$  (200 bar)  
(for ambient temperature)  
 $P_{\text{max}} = 5 \text{ MPa}$  (50 bar)  
(for  $T_{\text{max}} = 200^\circ\text{C}$ )
- PTFE seals  
 $P_{\text{max}} = 1.6 \text{ MPa}$  (16 bar)  
(for  $T_{\text{max}} = 200^\circ\text{C}$ )

### Electrical Data:

- 2-wire connection
- supply: 10 ... 30 VDC
- current signal: 4 ... 20 mA
- error message: adjustable to 3.6 or 21.5 mA
- **HART®**-protocoll version 6.0

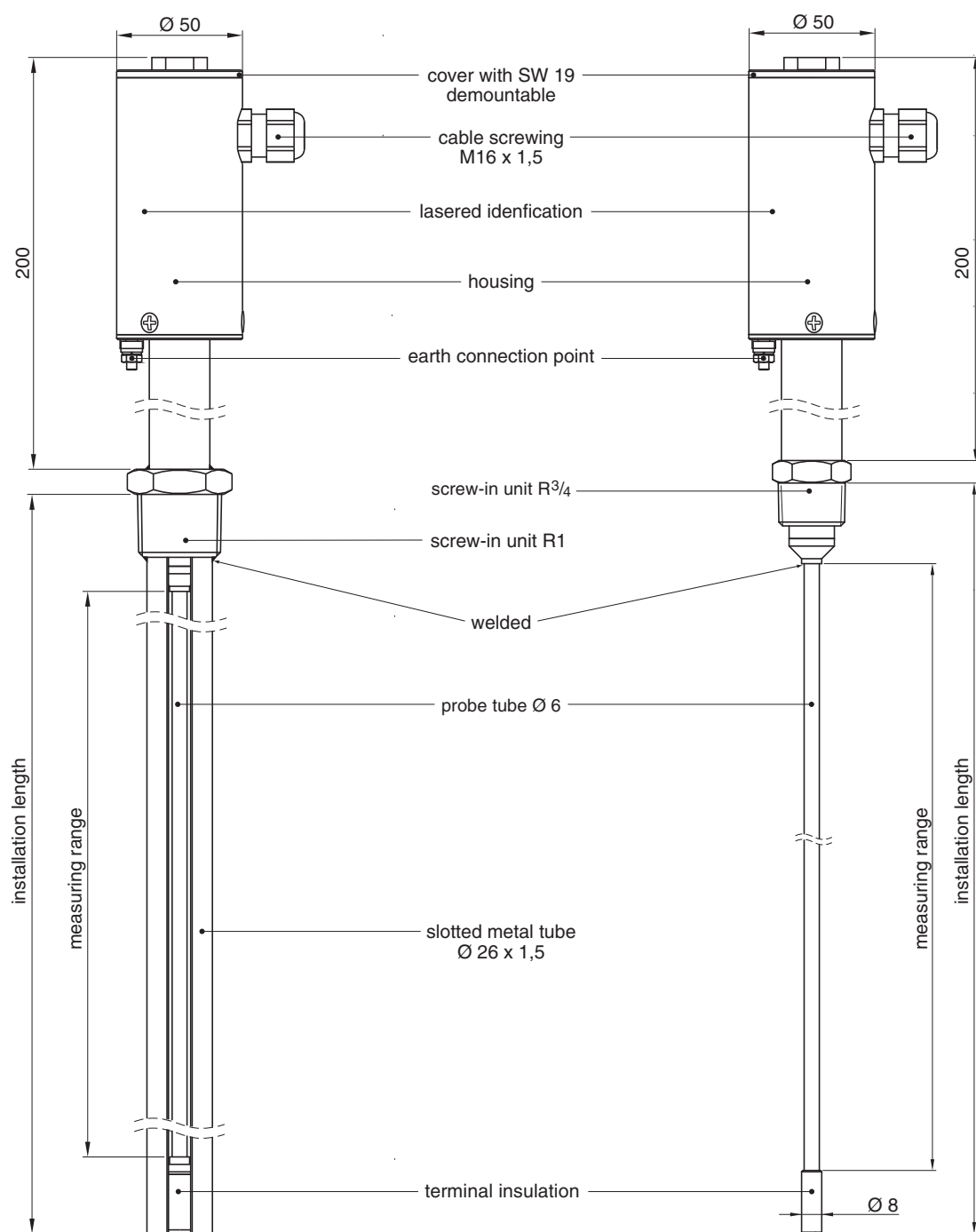
### Materials of Parts in

#### Contact with Media :

- stainless steel 1.4571
- PEEK or PTFE
- special materials for parts in contact with media: flange (plated on stainless steel 1.4571), screw-in unit, probe tube, Hastelloy C4 (2.4602); B3 (2.4600)

## CONDURIX MA

## CONDURIX Mono



Dimensions in mm

**Please include the following order no. in your order:**

**HART®**

	without	0
<b>HART®</b>	-protocoll	1

### Approval

without	0
ATEX	1

### Medium temperature range

-40 °C to +125 °C

-40 °C to +200 °C

Seal

PTFE ( $P_{\max} = 1.6 \text{ Mpa}$ ;  $T_{\max} = 200 \text{ }^{\circ}\text{C}$ ) **1**

PEEK ( $P_{\max} = 10 \text{ MPa}$ ;  $T_{\max} = 200 \text{ }^{\circ}\text{C}$ ) **2**

## Process Connection

R 3/4", screw-in unit from 1.4571

R 1/2", screw-in unit from 1.4571

R 1", screw-in unit from 1.4571

### Installation Length

state in uncoded text

**C**

0

Material of parts in contact with

stainless steel 1.4571

0

Hastelloy C4 / C22

1

## Design

## CONDURIX Mono for installation in conductive tanks

0

### CONDURIX MA for installation in non-conductive tanks

1

Order No.

520

Further details in the uncoded text are necessary for designs with flange.

## Installation length CONDURIX

e.g. 151 mm

Rated width DN

e.g. DN 40

### Pressure level PN

e.g. PN 16

**Design DIN; ANSI; TriClamp; opal tube**

e.g. DIN 2527

Form

e.g. B

**For further information contact us by telephone +49/40/39 82 07-0**

Current product information under: [www.fafnir.com](http://www.fafnir.com)



