

# Supplementary instructions

## Plug connector Harting HAN 7D

for continuously measuring sensors



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**VEGA**

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### Safety instructions for Ex areas

Please note the Ex-specific safety information for installation and operation in Ex areas. These safety instructions are part of the operating instructions and come with the Ex-approved instruments.

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## **1 For your safety**

### **1.1 Appropriate use**

The described plug connectors are accessory parts for continuously measuring sensors.

They are used for separable connection to power supply/signal processing for two-wire sensors. Those are sensors whose power supply as well as measurement signal are transmitted over one pair of wires.

### **1.2 Impermissible use**

As a rule, it is not allowed to use plug connectors with four-wire instruments. Those are sensors whose power supply and measurement signal are transmitted over two separate pairs of wires.

### **1.3 General safety instructions**

The safety information in the operating instructions manual of the respective sensor must be noted.

## 2 Product description

### Scope of delivery

The scope of delivery encompasses:

- Screwed housing with pin insert
- Connector housing with insert
- Contact sleeves for connector housing
- Documentation
  - This supplementary instructions manual

### Function

The plug connector is an accessory part for sensors with single or double chamber housing. It is used as separable connection to power supply and signal processing.

### Configuration

The plug connector consists of the screwed housing, the connection cable to the sensor electronics as well as the connector housing. The individual cores of the connection cable are marked with figures for the terminals of the electronics module. The connector housing is available in straight and bent version.

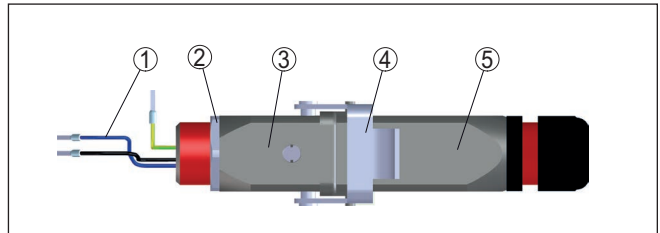


Fig. 1: Configuration plug connector Harting HAN 7D - Example straight version

- 1 Connection cable
- 2 Counter nut
- 3 Screwed housing
- 4 Locking clip
- 5 Connector housing

### Versions

The plug is available in straight or bent version.

The bent version may only be used on the following houses:

- Stainless steel - precision cast housing
- Aluminium housing

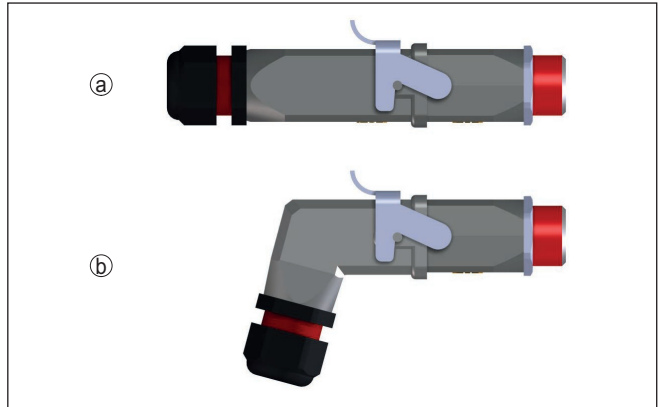


Fig. 2: Plug connector Harting HAN 7D - straight and bent version

a Straight version

b Bent version

### Application area

The plug connector is used instead of the cable gland in the single or double chamber housing. It is available Ex factory, either integrated in the sensor or unassembled as retrofitting set.

## 3 Mounting

### 3.1 Mounting preparations

#### Tools

The following tools are required for mounting:

- Spanner SW 24 for unscrewing the cable gland
- Screwdriver SW 24 for tightening the counter nut

### 3.2 Installation procedure

#### Position in the housing

The following illustration shows the position of the plug connector in the respective housing:

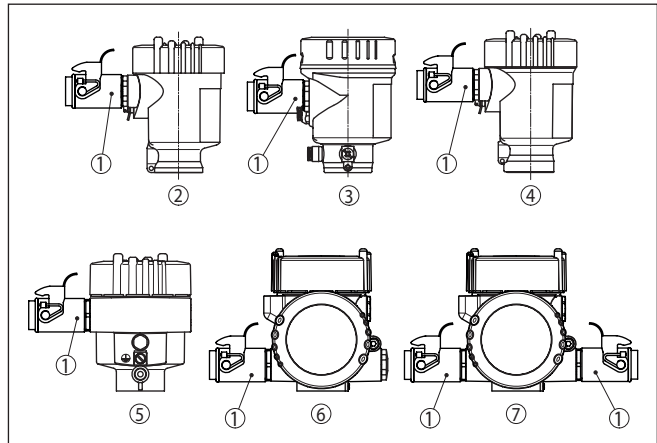


Fig. 3: Position of the plug connector on different instrument versions

- 1 Plug connector
- 2 Plastic single chamber
- 3 Stainless steel single chamber (electropolished)
- 4 Stainless steel single chamber (precision casting)
- 5 Aluminium - single chamber
- 6 Stainless steel double chamber (precision casting), aluminium
- 7 Stainless steel double chamber (precision casting), aluminium with additional current output

#### Mounting of the plug connector

Proceed as follows to mount the plug connector:

1. Open the cover of the electronics or connection compartment
2. Unscrew the cable gland
3. Screw in the plug connector and secure it with the counter nut
4. Connect the wires according to chapter "Connect"

The mounting of the plug connector is finished.

Disassembly is carried out in reverse order.

## 4 Connecting to power supply

### 4.1 Connection procedure

Proceed as follows:

1. Loosen the screw on the rear of the connector housing
2. Remove the socket insert from the connector housing

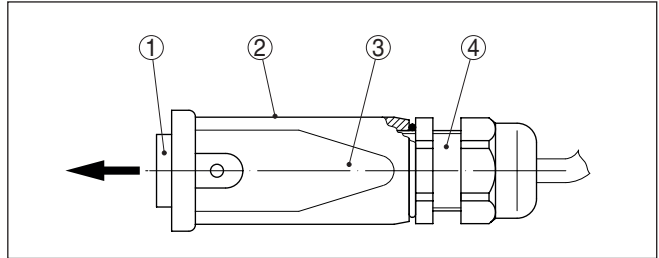


Fig. 4: Loosen the socket insert

- 1 Socket insert
- 2 Screw
- 3 Connector housing
- 3 Cable gland
3. Remove approx. 5 cm of the cable mantle, strip approx. 1 cm insulation from the individual wires
4. Lead the cable through the cable gland into the plug housing
5. Solder the wire ends into the contact socket according to the wiring plan

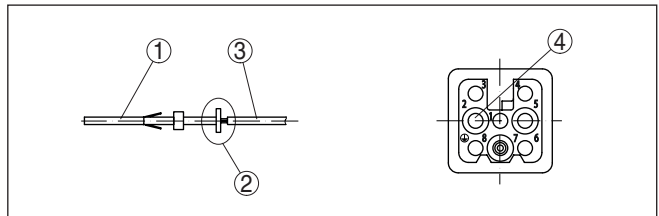


Fig. 5: Insert contact socket

- 1 Individual contact socket
- 2 Crimp connection
- 3 Wire end
- 4 Contact sleeves, plug side
6. Snap the contact socket from the rear into the socket insert
7. Screw the socket insert into the connector housing
8. Put the screwed housing and the connector housing together and close the safety catch

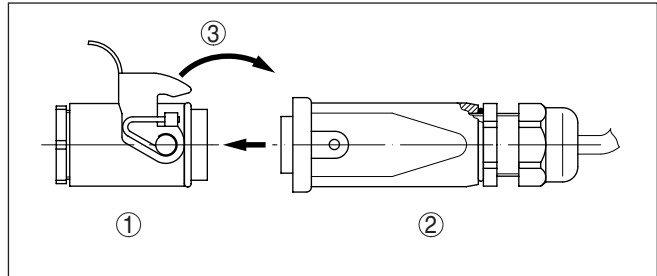


Fig. 6: Connecting

- 1 Screwed housing
- 2 Connector housing
- 3 Securing strap

The electrical connection is finished.

**Contact pins**

**4.2 Wiring plan**

The illustration shows the assigned pins of the plug connector. The tables show the assignment of the individual contact pins to the terminals of the sensor electronics.

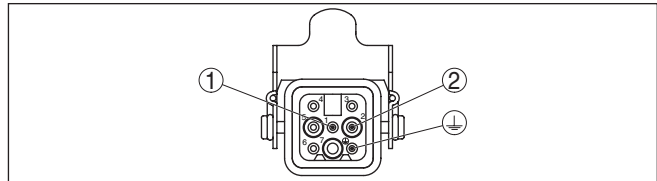




Fig. 7: View to the plug connector - Instrument plug

- 1 Contact pin 1
- 2 Contact pin 2
- Contact pin protective ground

**Voltage supply/Signal output**



Contact pin	Colour, connection cable in the sensor	Terminal, electronics module	Function/Polarity
1	Black	Terminal 1	Power supply/+
2	Blue	Terminal 2	Power supply/-
	Green/Yellow		Shielding

**Additional current output**

Contact pin	Colour, connection cable in the sensor	Terminal, electronics module	Function/Polarity
1	Black	Terminal 7	Power supply/+
2	Blue	Terminal 8	Power supply/-

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Contact pin	Colour, connection cable in the sensor	Terminal, electronics module	Function/Polarity
	Green/Yellow		Shielding

## 5 Supplement

### 5.1 Technical data

#### Materials

Contact support	Polyamide
Contact	copper alloy, hard silver plated 0.3 µm Ag
Plug and connector housing	Aluminium die-casting
Locking element	Metal
Cable gland	PA
Housing seal	NBR

#### Ambient conditions

Ambient temperature - plug connector, separate	-40 ... +125 °C (-40 ... +257 °F)
Ambient temperature - plug connector mounted to the sensor	The lower temperature is applicable

#### Electrical data

Number of contacts	7 + PE
Operating voltage max.	50 V AC/DC
Isolation resistance	> 10 <sup>10</sup> Ω

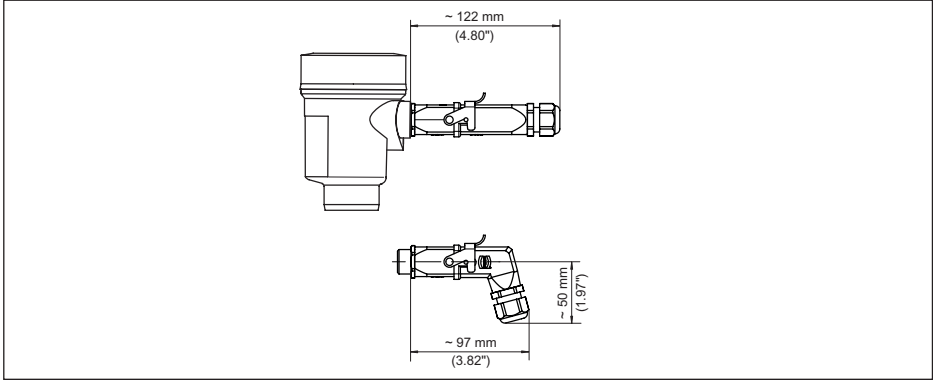
#### Electrical data acc. to DIN EN 61984

Rated current	10 A
Reference voltage	250 V
Reference surge voltage	4 kV
Pollution degree	3

#### Electrical protective measures

Protection rating - plug connector, separate in locked status	IP 65
Protection rating - plug connector mounted on the sensor	The lower protection category applies

**5.2 Dimensions**



*Fig. 8: Harting plug connector*

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All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

Subject to change without prior notice

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