Supplementary instructions

Plug connector Harting
HAN 7D

for continuously measuring sensors
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1 For your safety

1.1 Appropriate use
Plug connectors are accessory parts for level and pressure 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.

1.4 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 manual and come with the Ex-approved instruments. For instruments with Exd or StEx approval, the use of plug connectors is not allowed.
2 Product description

Scope of delivery

The scope of delivery encompasses:

- Screwed housing with pin insert - to be screwed in the sensor housing
- Connector housing with insert - for cable connection
- 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, a multicore, fixed connected cable as well as the corresponding connector housing. The individual cores are marked with figures for the terminals of the electronics module.

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

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

Area of application

The plug connector is used instead of the cable gland in the single or double chamber housing.
3 Mounting

3.1 Mounting preparations

The following tools are required for mounting:
- Spanner SW 24 for unscrewing the cable gland
- Screwdriver SW 24 for tightening the counternut

3.2 Installation procedure

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

![Diagram of plug connector positions](image)

**Fig. 2: Position of the plug connector on different instrument versions**

- 1 Plug connector
- 2 Single chamber plastic
- 3 Single chamber stainless steel (electropolished)
- 4 Single chamber stainless steel (precision casting)
- 5 Single chamber Aluminium
- 6 Double chamber stainless steel (precision casting), Aluminium
- 7 Double chamber stainless steel (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 counternut
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

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

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
4 Connecting to power supply

Plug connector Harting HAN 7D • for continuously measuring sensors

The electrical connection is finished.

### 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.

#### Contact pins

1. Screwed housing
2. Connector housing
3. Safety catch

#### Voltage supply/Signal output

<table>
<thead>
<tr>
<th>Contact pin</th>
<th>Colour connection cable in the sensor</th>
<th>Terminal, electronics module</th>
<th>Function/Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>Terminal 1</td>
<td>Power supply/+</td>
</tr>
<tr>
<td>2</td>
<td>Blue</td>
<td>Terminal 2</td>
<td>Power supply/-</td>
</tr>
<tr>
<td></td>
<td>Green/Yellow</td>
<td></td>
<td>Screen</td>
</tr>
</tbody>
</table>

#### Additional current output

<table>
<thead>
<tr>
<th>Contact pin</th>
<th>Colour connection cable in the sensor</th>
<th>Terminal, electronics module</th>
<th>Function/Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>Terminal 7</td>
<td>Power supply/+</td>
</tr>
<tr>
<td>2</td>
<td>Blue</td>
<td>Terminal 8</td>
<td>Power supply/-</td>
</tr>
</tbody>
</table>
### Contact pin | Colour connection cable in the sensor | Terminal, electronics module | Function/Polarity
--- | --- | --- | ---
[![](image)](image) | Green/Yellow | [![](image)](image) | Screen
## 5 Supplement

### 5.1 Technical data

<table>
<thead>
<tr>
<th><strong>Materials</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact support</td>
<td>Polyamide</td>
</tr>
<tr>
<td>Contact</td>
<td>copper alloy, hard silver plated 0.3 µm Ag</td>
</tr>
<tr>
<td>Plug and connector housing</td>
<td>Polycarbonate</td>
</tr>
<tr>
<td>Locking element</td>
<td>Polyamide</td>
</tr>
<tr>
<td>Housing seal</td>
<td>NBR</td>
</tr>
</tbody>
</table>

#### Temperature range

- **Plug connector - separate**: -40 … +125 °C (-40 … +257 °F)
- **Plug - mounted on the sensor**: The lowest temperature is applicable

#### Electrical data

- **Number of contacts**: 7 + PE
- **Rated current**\(^1\): 10 A
- **Reference voltage**: 50 V
- **Reference surge voltage**: 4 kV
- **Degree of soiling**: 3
- **Isolation resistance**: \(> 10^{10} \, \Omega\)

#### Protection rating

- **Plug connector - separate (locked status)**: IP 65 (with seal screw)
- **Plug connector - mounted on the sensor (connected status)**: The lowest protection category applies

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\(^1\) Up to 45 °C (113 °F) ambient temperature, see derating of the manufacturer.
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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