

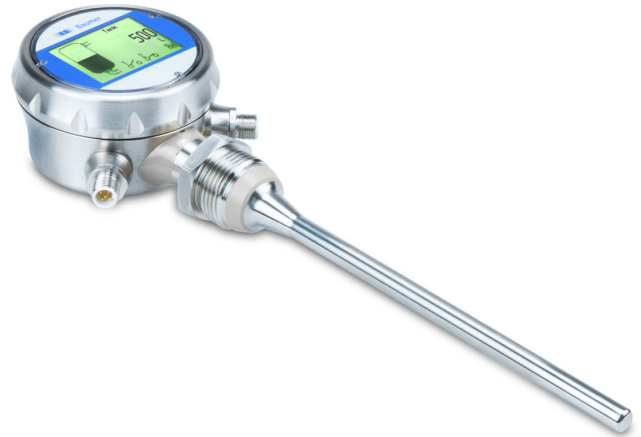
# PLP70H

Potentiometric level measurement

PLP70H-#0####0##.D11#A040.3#3#

## Overview

- Suitable for a wide range of homogeneous process media, especially for media with low conductivity > 5 µS/cm
- Wetted parts, corrosion-resistant stainless steel or PEEK
- Compact, food-safe and hygienic design
- 3-A approval, devices in accordance with FDA and EHEDG
- Defined empty registration
- LED fill level indicator
- Not affected by strong adhesion
- Configurable measuring range



Picture similar



## Technical data

### Performance characteristics

Measuring principle	Potentiometric level measurement
Max. measuring error (BFSL)	± 1 % FSR ± 2 mm , for media conductivity ≥ 50 µS/cm ± 3 % FSR ± 2 mm , for media conductivity < 50 µS/cm
Measuring range	200 ... 3000 mm
Media characteristics	≥ 5 µS/cm
Step response time, T90	≤ 100 ms
Damping	≤ 60 s
Repeatability	0.2 % FSR , for rod length ≥ 500mm 1 mm , for rod length < 500mm

### Process conditions

Process temperature	-10 °C ... 115 °C , permanent < 140 °C , max. t < 30 min
Process pressure	≤ 16 bar

### Process connection

Connection variants	G 1 A hygienic Bottom process connection with union nut Rear process connection with fixed thread
Mounting position	Any, top, bottom, side
Wetted parts material	AISI 316L (1.4404) PEEK Natura
Surface roughness wetted parts	Ra ≤ 0.8 µm Ra ≤ 0.4 µm

### Ambient conditions

Operating temperature range	-20 ... 65 °C
Storage temperature range	-30 ... 80 °C , with DFON touch screen -40 ... 85 °C , without DFON touch screen
Degree of protection (EN 60529)	IP69K , with connector M12 IP67 , with cable gland
Humidity	0 ... 95 % RH

### Ambient conditions

Vibration (sinusoidal) (EN 60068-2-6)	1.6 mm p-p (2 ... 25 Hz), 4 g (25 ... 100 Hz), 1 octave / min.
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### Switching output

Output type	PNP NPN Digital (push-pull) Off
Switching logic	High-Active Low-Active
Relays	2 relays included in the display
Current rating	100 mA , max.
Off leak current	< 100 µA
Short circuit protection	Yes

### Analog output

Output signal	4 ... 20 mA
Accuracy	≤ 40 µA
Load resistance	500 Ω max.
Temperature drift	< 0.01 % FSR/K (± 1.6 µA/K)
Resolution	3 µA
Status signal empty	3.5 mA , programmable

### IO-Link interface

IO-Link version	1.1
Device profile	Smart Sensor Profile
IO-Link port type	Class A
Baud rate	38,4 kbaud (COM2)
SIO-mode	Yes
Process data (cyclic)	Process Value Device Status

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## Technical data

### IO-Link interface

Adjustable data (acyclic)	Sensor Adjustment Switch parameters Analog Output Signal Adjustment Analog Output Signallimits (Minimum, Maximum, Alarm)
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### Housing

Style	Compact version FlexHousing, Ø80 mm
Overall size	Refer to section "Dimensional drawings"
Material	AISI 304 (1.4301)

### Electrical connection

Connector (available for left side)	M12-A, 5-pin, stainless steel M16x1.5, stainless steel M20x1.5, stainless steel
Connector (available for right side)	M12-A, 4-pin, stainless steel M16x1.5, stainless steel M20x1.5, stainless steel

### Power supply

Voltage supply range	18 ... 35 V DC
Current consumption (no load)	100 mA , max.
Power-up time	≤ 3 s
Reverse polarity protection	Yes

### Factory settings

qTeach	Activated
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### Compliance and approvals

EMC Emission	EN 61326
EMC Immunity	EN 61326
Hygiene	3-A (74-07) EHEDG EL Class I

## Display

### General information

Panel type	FSTN Graphical LCD
Display range	-9999 ... 99999
Max. digit height	22 mm
Material	Polycarbonate

### Input signal

Input signal from transmitter	Digital, 2-way for communication between transmitter and display
Update time	≤ 1 s , max. 0.3 s , typ.

### Relays

Contacts	2 x solid state relays
Max. load current	75 mA
Max. switching voltage	60 V

### User configurable data

Error- / Warning-indication	Individually configurable display and backlight indication in white, green or red colour, steady or flashing light. Configurable limits over the range
Measuring unit	% mm cm m Inch Feet
User defined measuring unit	8 × 20 pixel matrix

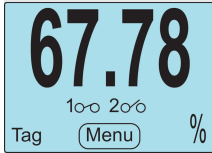
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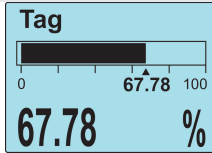
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## Display

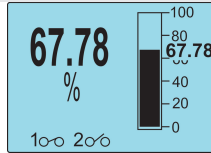
### Selectable display views



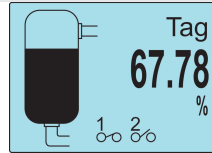
Filling level and additional values



Filling level and horizontal bar graph



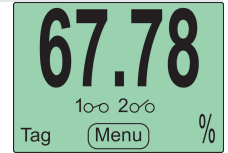
Filling level and vertical bar graph



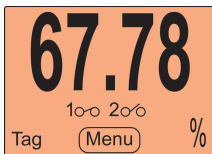
Filling level and tank illustration



White background



Green Background

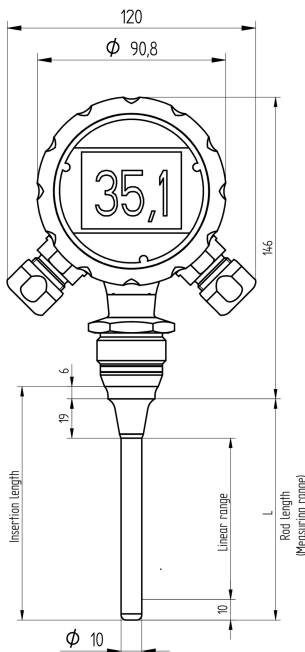


Red background

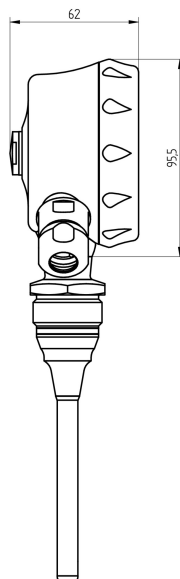


Exemplary error message

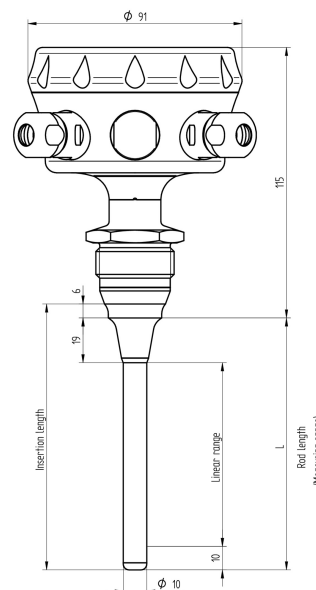
## Dimensional drawings (mm)



Bottom process connection with union nut, G 1 A hygienic (BCID: A04), Length from 200 mm ... 3000 mm



FlexHousing with measuring rod, side view



Rear process connection with fixed thread, G 1 A hygienic (BCID: A04), Length from 200mm ... 3000 mm

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## Electrical connection



### Left side connection (front view): M12-A, 5-pin

Function	Description		Pin assignment
+Vs	Power supply +	18 ... 35 V DC	1
GND (0V)	Power supply -	18 ... 35 V DC	3
Iout+	Level +	4 ... 20 mA	5
Iout-	Level -	4 ... 20 mA	2
IO-Link/SW	IO-Link/SW		4

### Right side connection (front view): M12-A, 4-pin

Function	Description	Pin assignment
R11	Relay 1	1
R12	Relay 1	2
R21	Relay 2	3
R22	Relay 2	4

### Left side connection (front view): Cable gland

Function	Description	Recommended wiring
+Vs	Power supply +	BN
GND (0V)	Power supply -	BU
Iout+	Level +	GY
Iout-	Level -	WH
IO-Link/SW	IO-Link/SW	BK

### Right side connection (front view): Cable gland

Function	Description	Recommended wiring
R11	Relay 1	BN
R12	Relay 1	WH
R21	Relay 2	BU
R22	Relay 2	BK

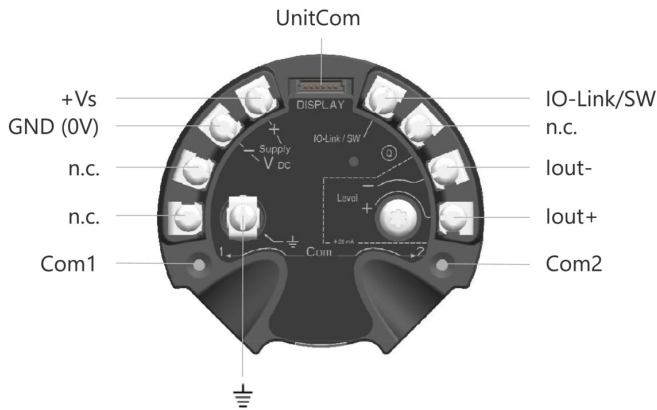
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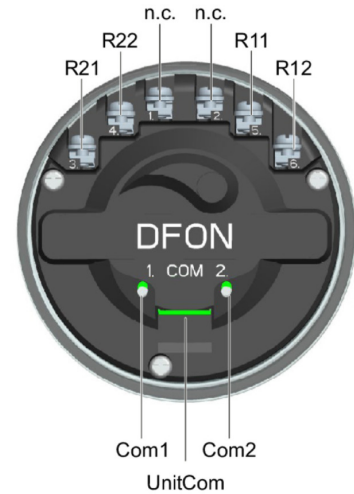
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## Electrical connection

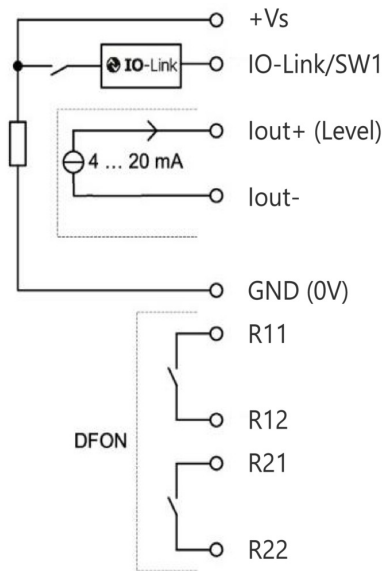
### Terminal assignment transmitter



### Terminal assignment DFON display



### Equivalent circuit diagram



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## Ordering information

**Ordering key - Configuration possibilities see website**

	PLP70H	-	#	0	####	0	#	#	.	D1	1	#	A040	.	3	#	3	#	
<b>Product</b>	PLP70H																		
<b>Housing</b>																			
Bottom process connection																			
Rear process connection																			
<b>Version</b>																			
Straight version																			
<b>Rod length (mm)</b>																			
0200 - 3000																			
<b>Cable length (cm)</b>																			
No cable, compact version																			
<b>Display</b>																			
Without display																			
With display, with activated relays																			
<b>Mounting position</b>																			
Bottom mounted																			
Top mounted																			
<b>Output signal</b>																			
IO-Link Dual Ch., 4 ... 20 mA V1																			
<b>Protection class</b>																			
IP67, IP69K																			
<b>Electrical connection</b>																			
1 x M12-A, 5-pin																			
2 x M16x1.5 cable gland																			
2 x M20x1.5 cable gland																			
1 x M12-A, 5-pin + 1 x M12-A, 4-pin																			
1 x M16x1.5 cable gland																			
1 x M20x1.5 cable gland																			
<b>Process connection</b>																			
G 1 A hygienic (A04)																			
<b>Wetted parts material</b>																			
PEEK / AISI 316L (1.4404)																			
<b>Surface roughness</b>																			
Ra ≤ 0.8 µm																			
Ra ≤ 0.4 µm																			
Electropolished, Ra ≤ 0,8 µm																			
Electropolished, Ra ≤ 0,4 µm																			
<b>Special approvals</b>																			
3-A / EHEDG																			
<b>Configuration</b>																			
Factory settings																			
Customer-specific																			

(1) Rod length (mm): +/- 2mm, available in 10mm raster, intermediate sizes on request