



# Fill level measurement



Type:  
Hydrocont® B / ExB

Hydrostatic filling level sensor – Ø 40mm  
for continuous measurement of filling levels and  
temperatures in liquids, level probe

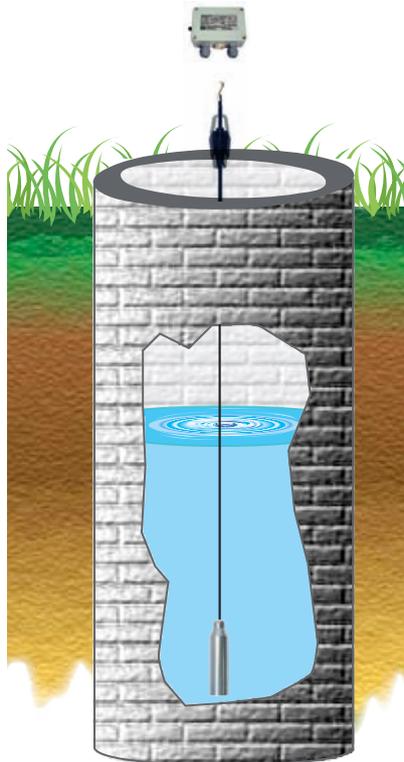
## Description

The device Hydrocont® B with integrated analogue evaluation electronic is a compact sensor for continuous measurement of fill levels in liquid media.

This includes e.g. the registration of levels in reservoirs, clarification basins, deep wells etc., but also the fill level measurement in closed containers.

For applications, where food or drink water suitability is necessary, a corresponding put in variant can be ordered.

The excellent characteristics like highest strength against pressure and pressure blows, high resistance against chemicals and corrosion, very good insensitiveness against temperature shocks and EM interference, highest accuracy and long term stability and also low influence of temperature makes it possible to use the sensor in all containers for liquid medium like water, waste water, solvents, oil, sludge, grease, cleaning agents, etc. In addition to the level measurement the temperature of the medium can be measured by a Pt100 resistor, that is integrated in the sensor.



## Application

- Continuous fill level measurement in reservoirs, clarification basins, deep wells and boreholes
- Various materials selectable for sensor, cable and gaskets, therefore the use in various media is possible
- Fill level measurement at containers that are outside and can be flooded

## Your benefits

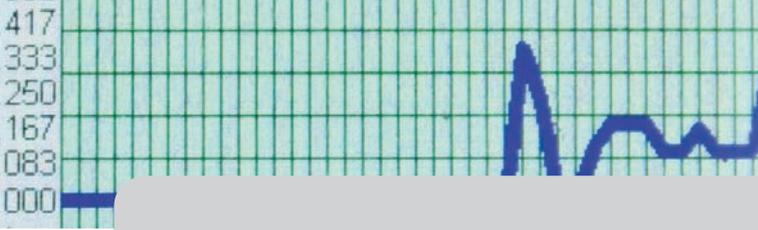
- **Very stable special cable** with steel mesh and pressure compensation capillary
- Double **insulation** prevents water getting inside even with external damage
- Food and drinking water suitable materials
- High-precision dry capacitive ceramic measuring cell
- Process connection for hygiene applications available
- **Easy setup** and connection to existing control systems



## Specials


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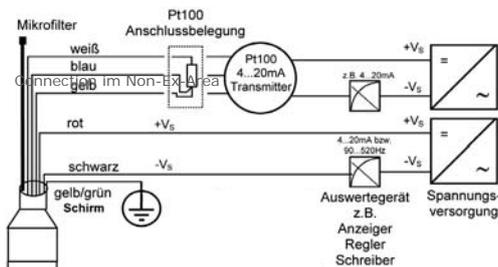


# Technical data

Technical data	
Output:	4..20 mA, 2-wire
Residual ripple:	≤ 2 V <sub>ss</sub> (cCondition: within the permitted supply voltage range)
Permitted supply voltage:	11,5 V up to 45 V DC at Ex-version 11,5 V up to 30 V DC
Measuring accuracy	
Temperature deviation:	≤ 0,1% / 10 K of the nominal range
Deviation in characteristics:	≤ 0,1% / 0,2% of the nominal range (depending on the order code)
Calibration deviation:	≤ 0,05% of the nominal range
Long term drift:	≤ 0,1% / year of the nominal range
Influence of supply voltage:	≤ 0,02% / 10 V of the nominal range
Resolution:	infinite, because analog measurement electronics
Material	
Membrane:	Ceramic AL <sub>2</sub> O <sub>3</sub> 99,9%
Material slopes sensor:	Steel 1.4404
Sealing screw:	Steel 1.4404
Gaskets:	FPM (Viton®) / EPDM / Neoprene® / Kalrez®
Connection housing:	Polyacetal POM (Delrin), screw-in thread out of Steel 1.4404
Wall-mounted casing:	PC / PC
Extension cable:	PE / PUR / FEP
Environmental conditions	
Permitted filling temperature:	-20°C...+70°C
Protection:	Material slopes sensor IP68 Sealing screw / Connection housing IP67 Wall-mounted casing IP65

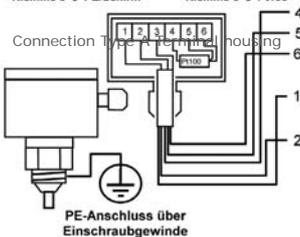
## Connection

Connection im Non-Ex-Area



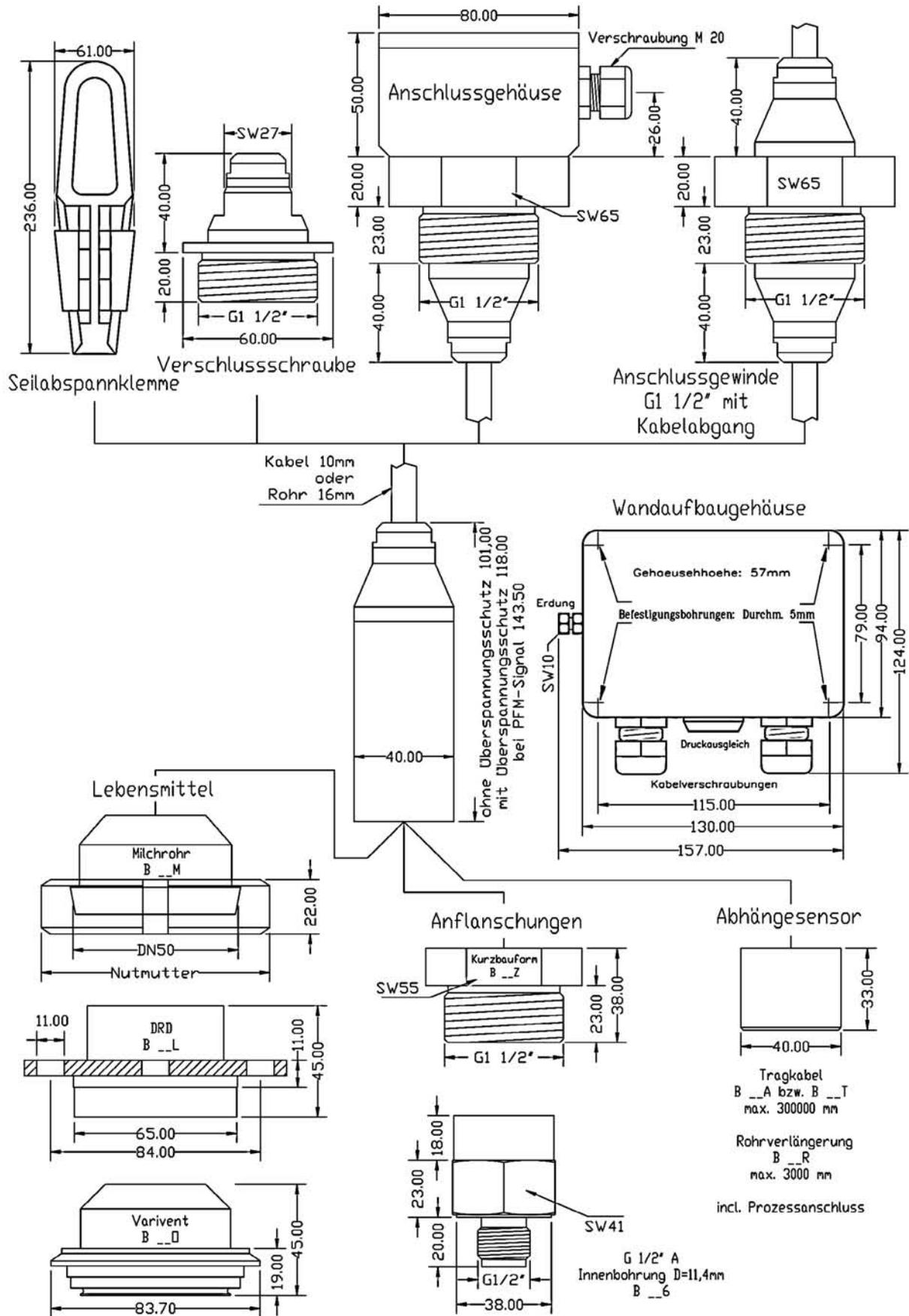
Connection Type A Terminal housing

- Klemme 1 → +V<sub>ss</sub>
- Klemme 2 → I<sub>out</sub> (4..20mA)
- Klemme 3 → PE/Schirm
- Klemme 4 → Pt100
- Klemme 5 → Pt100
- Klemme 6 → Pt100



## In use





**Type**  
 B Standard  
 Ex1B ATEX II 2 G Ex ib IIC T4  
 Ex0B ATEX II 1/2 G Ex ia IIC T4

**Wall installation housing**

W Wall installation housing  
 O Without wall installation housing

**Put-in device – process connection**

O Without put-in device  
 S Cable clamp fixing steel, hot galvanized  
 U Cable clamp fixing CrNi-steel  
 V Screw plug G 1½" DIN EN ISO228-1 steel 1.4404 (AISI 316L) / 1.4571 (AISI 316Ti)  
 G Connection housing G 1½" DIN EN ISO228-1 material like material – probe  
 H Connection thread G 1½" DIN EN ISO228-1 material like material – probe cable connection, specify cable length

**Variant sensor – process connection**

A Standard  
 T Food and drink water suitability of all medium contacting materials  
 R Tube prolongation Ø 16mm (only for ype G or type H)  
 Z G 1½" B DIN EN ISO228-1  
 6 G ½" B DIN EN ISO228-1 inside drill 11,4 mm  
 M Milk tube DN 50, PN 40 DIN 11851  
 L DRD 65 mm DN 50, PN 40  
 O Varivent 68 mm DN40-80/DN1½"-.6", PN25 DN100/DN4", PN20 DN125/DN6", PN10

**Electronic – output**

O 2-wire-technology 4...20 mA  
 P 2-wire-technology PFM 90...520 Hz (not for Ex)

**Measurment range in bar**

8 0...100 mbar  
 0 0...200 mbar  
 1 0...400 mbar  
 6 0...600 mbar  
 2 0...1000 mbar  
 3 0...2000 mbar  
 4 0...4000 mbar  
 7 0...6000 mbar  
 9 0...5000 mbar  
 5 0...10000 mbar  
 P 0...50 mbar  
 Z 0...20 bar

**Measurment range in m water column**

A 0...1 m water column  
 B 0...2 m water column  
 C 0...4 m water column  
 M 0...5 m water column  
 D 0...6 m water column  
 E 0...10 m water column  
 F 0...20 m water column  
 L 0...25 m water column  
 G 0...40 m water column  
 J 0...50 m water column  
 K 0...60 m water column  
 H 0...100 m water column  
 Y Special measuring range

**Accuracy measuring system**

H 0,2% ceramic AL<sub>2</sub>O<sub>3</sub> 99,9% (highly clean)  
 L 0,1% Linearization protocol ceramic AL<sub>2</sub>O<sub>3</sub> 99,9% (highly clean)

**Over voltage protection**

O Without over voltage protection  
 P Integrated over voltage protection not for variant type Ex0B

**Temperature sensor**

0 Without temperature sensor  
 1 Integrated temperature sensor Pt100  
 2 Integrated temperature sensor Pt100 with an installed Pt100 transmitter in the wall installation housing specify temperature measurement range separately

**Material probe (medium contact)**

1 Steel 1.4404 (AISI 316L) / 1.4571 (AISI 316Ti)  
 3 Navy bronze CU SN 12  
 4 Hastelloy C  
 6 PEEK  
 7 Titan

**Material gaskets (medium contact)**

1 FPM fluorelastomere (Viton®)  
 2 CR chloroprene-rubber (Neopren®)  
 3 EPDM ethylene-propylene-dienmonomere for food applications  
 4 FFKM perfluorelastomere (Kalrez®)  
 6 FFKM perfluorelastomere high density for gas application  
 7 FFKM – perfluorelastomere (Kalrez®) – construction form type R / T / S  
 8 FFKM hd – perfluorelastomere high density – construction form type R / T / S

**Material probe prolongation**

(medium contact, price per 100mm)  
 A PE Polyethylene  
 E FEP Fluorinated Ethylene Propylene  
 D Tube Ø 16mm steel 1.4404 (AISI 316L) / 1.4571 (AISI 316Ti)

**sensor length**

incl. Process connection:  
 measure in mm

Order code

**Hydrocont**

mm