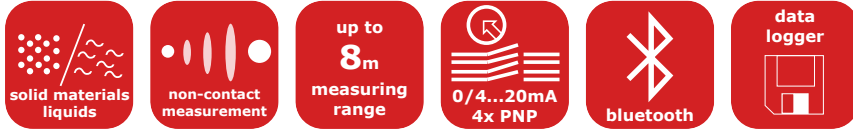


# Sonicont® USN

Ultrasonic level transmitter / level switch  
Non-contact measurement of filling levels  
in liquids, pastes and coarse bulk materials



Technical Information TI06.25



## Main features

Wide range of applications

- Measuring ranges up to 8m in liquids and bulk materials
- Wide process temperature range  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- High protection class IP65 / IP67
- Wide environmental temperature range  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$

High accuracy – characteristic deviation  $\leq 0,2\%$  of measuring range

- Integrated evaluation electronic
- Graphic display, keyboard
- 4x PNP switch output
- 1x current output 0/4...20mA – voltage output 0...10V
- Measure data memory for more than 500.000 measuring values
- Battery powered data logger function
- Bluetooth-Interface
- Connector plug M12

High operating comfort

- Enclosure and display rotatable for optimal operability in each installation position
- High contrast high brightness TFT-LCD display for best readability
- 3-key operation without additional assistance with tactile feedback
- Easy handling by clear menu navigation
- Extensive diagnostic functions for system analysis

## Application

- Non-contact level and volume measurement or flow measurement at open channels and measuring weirs
- Water and waste water sector
- Process industry
- Environmental technology
- Storage tanks, storage bunkers, silos



## Description

The device is an electronic level transmitter / level switch for monitoring, control as well as continuous measurement of filling levels in liquids, pastes and coarse bulk materials.

Additional application fields are volume or flow measurement.

The device is suitable for demanding measuring requirements. Due to its high accuracy and the high flexibility of configuration, the device can be suited a wide variety of applications.

The robust design and the high-quality workmanship turns the device into a very high quality product, which even the most adverse environmental conditions cannot affect, whether low temperatures when used outdoors, high shock and vibration or aggressive media. A captive laser marking of the type label ensures the identifiability throughout the entire lifetime of the device. Obviously is the optional marking of a measurement point designation resp. TAG, a customer label or of a neutral type label, of course also per laser marking.



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# TECHNICAL DATA

Supply voltage:	Setting output 0/4...20 mA: 9..30 VDC, reverse polarity protected Setting output 0...10 V: 14..30 VDC, reverse polarity protected
Supply current:	≤ 50mA up to ≤ 100mA (depending on output, bluetooth ON/Off, US)
Start-up time:	≤ 1s
Operating range:	Analogue output – current 0...20mA IOut: 0...20,5mA, max. 22mA Analogue output – current 4...20mA IOut: 3,8...20,5mA, min. 3,6mA, max. 22mA Analogue output – voltage 0...10V UOut: 0 ... 10,5 V, max. 11 V

## Switch output PNP S1 / S2 / S3 / S4

Function:	PNP switch to +L
Output current:	0... ≤ 200mA      current limited, short circuit protected

## Measuring accuracy

Characteristic deviation:	≤ ±2mm or ±0,2% of set measuring range
Long term drift:	≤ ± 0,1% FS / year not cumulative
Temperature deviation:	≤ ±0,006% FS / K

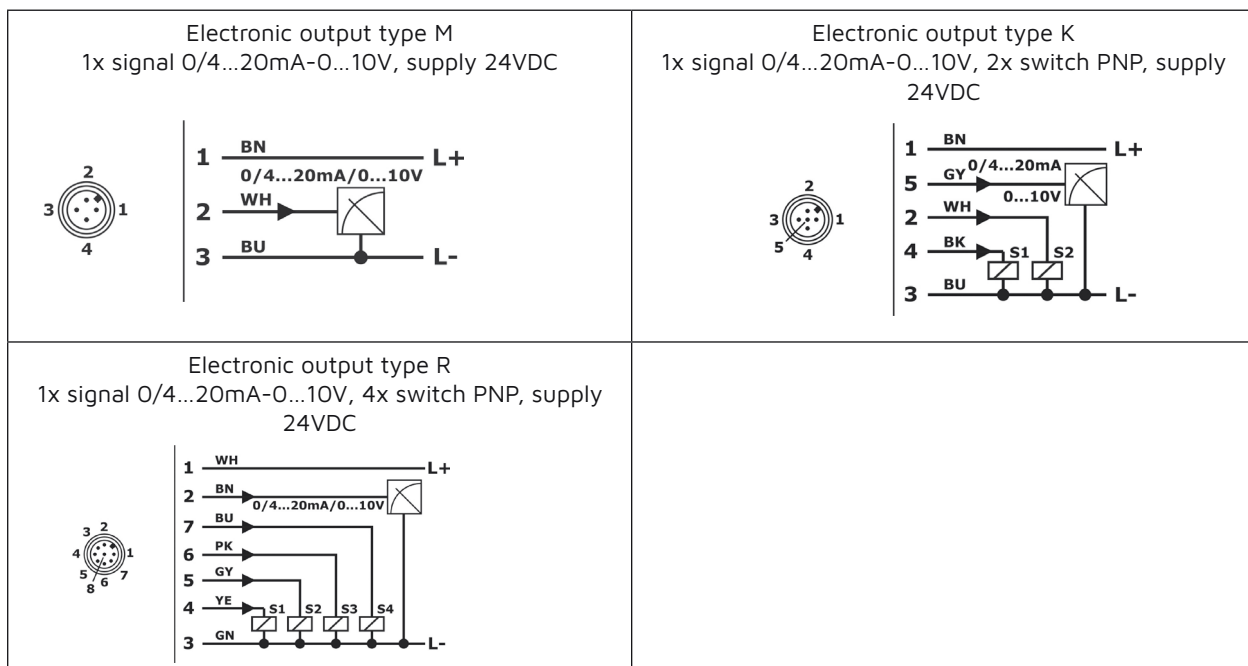
## Materials

Sensor:	PVDF
Process connection:	Steel 1.4404/316L / Steel 1.4571/316Ti Gaskets EPDM – ethylene-propylene-dienmonomere
Terminal enclosure:	CrNi-steel
Control panel surface:	PES
Electrical connection part:	Device plug PUR
Pressure compensation element:	Acrylic copolymer
Gaskets:	FPM – fluorelastomere (e.g. Viton®)

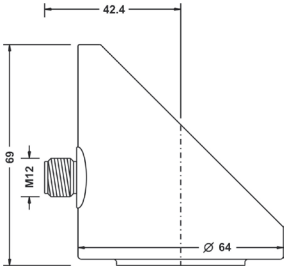
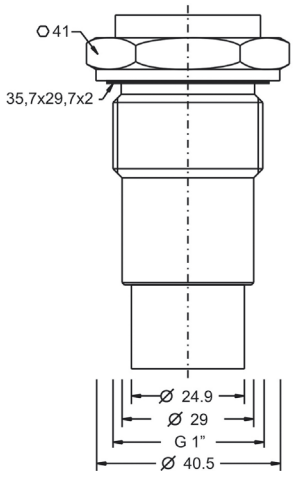
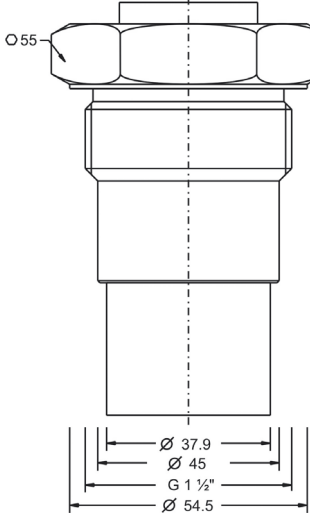
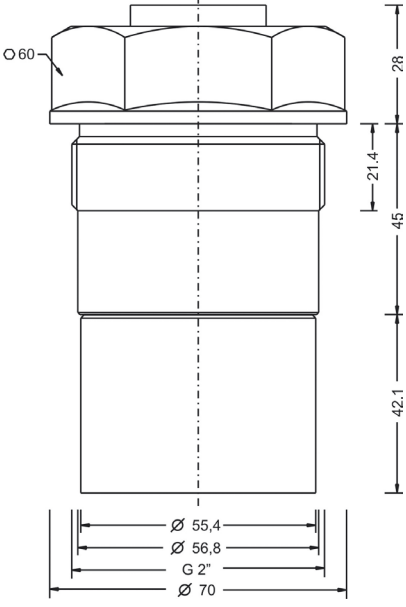
## Environmental conditions

Environmental temperature:	- 20°C...+70°C
Process temperature:	-40...+85°C
Process pressure:	-0,3...2 bar
Protection:	IP65/IP67      EN/IEC 60529

# ELECTRICAL CONNECTION



# DIMENSIONS (MM)

<p>Terminal enclosure</p> 	<p>Type 5 – Thread ISO 228-1 – G1”B / Measuring range type O2 – 2m</p> 	<p>Type 7 – Thread ISO 228-1 – G1½”B / Measuring range type O5 – 5m</p> 
<p>Type D – Thread ISO 228-1 – G2”B / Measuring range type O8 – 8m</p> 		

# ORDER CODE

4S	<b>Ausführung</b> Standard
P	<b>Sensor (process wetted)</b> Piezo, PVDF
S	<b>Approval</b> Standard
5	<b>Process connection</b> Thread ISO 228-1 - G1"B (only at measuring range 2m)
7	Thread ISO 228-1 - G1½"B (only at measuring range 5m)
D	Thread ISO 228-1 - G2"B (only at measuring range 8m)
3	<b>Material process seal (process wetted)</b> EPDM
V	<b>Material process connection (process wetted)</b> CrNi-Stahl 316L/316Ti
C	<b>Material terminal enclosure</b> CrNi-Stahl N41, 304
02	<b>Measuring range</b> 2m
05	5m
08	8m
M	<b>Electronic - Output</b> Current 0/4...20mA / voltage 0...10V, 3-wire
K	Current 0/4...20mA / voltage 0...10V, 2x switch PNP, 3-...5-wire
R	Current 0/4...20mA / voltage 0...10V, 4x switch PNP, 3-...7-wire
0	<b>Electronic - Function</b> without
1	Bluetooth® 2.1
2	Data logger with time stamp, backup battery
3	Data logger with time stamp, backup battery / Bluetooth® 2.1
0	<b>Process temperature</b> -40°C...+85°C
0	
0	
S	<b>Electrical connection</b> Plug M12x1 - A

Sonicont® USN 4S P S 3 V C 0 0 0 S