



Level probe TST-HD 133

Hydrostatic pressure transmitter for liquid levels,
also available in  design, 40 mm diameter



Description

- Stainless steel housing 1.4404, IP 68
- Plastic housing, available in PP or PVDF
- Measuring range from 40 mbar ... 60 bar
- Measurement error < 0,2 %
- High overload stability
-  II 1G EEx ia IIC T4/T6
- Cable according to Bg VV-1.12.96
– recommendation, appropriate for
foodstuff and drinking water
- AL₂O₃ ceramic sensor
- Optional 0 ... 10 V DC output signal

The level probe HD 133 has been designed as a hydrostatic pressure transmitter for liquid level measurements. Variable process connections and electrical hookups are available.

The housing is designed in stainless steel as a standard. Polypropylene (PP) or PVDF housings and designs with integrated overload protection (HD 135) are available.

The standard process connection is equipped with a FPM (Viton) gasket.

Type designation: example

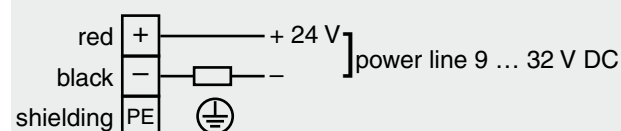
TST-HD 133, 400 mbar, 4-20 mA, 20 m PE cabel

Measuring range (bar)	Measuring range (mmWS)	Overload (bar)
0 ... 40 mbar*	0 ... 400 mmWS*	-0,3/4
0 ... 50 mbar*	0 ... 500 mmWS*	-0,3/4
0 ... 60 mbar*	0 ... 600 mmWS*	-0,3/4
0 ... 100 mbar	0 ... 1 mWS	-0,3/4
0 ... 160 mbar	0 ... 1,6 mWS	-0,6/5
0 ... 200 mbar	0 ... 2 mWS	-1/6
0 ... 250 mbar	0 ... 2,5 mWS	-1/6
0 ... 0,4 bar	0 ... 4 mWS	-1/6
0 ... 0,5 bar	0 ... 5 mWS	-1/6
0 ... 0,6 bar	0 ... 6 mWS	-1/10
0 ... 1,0 bar	0 ... 10 mWS	-1/10
0 ... 1,6 bar	0 ... 16 mWS	-1/18
0 ... 2,0 bar	0 ... 20 mWS	-1/18
0 ... 2,5 bar	0 ... 25 mWS	-1/18
0 ... 4,0 bar	0 ... 40 mWS	-1/25
0 ... 6,0 bar	0 ... 60 mWS	-1/40
0 ... 10 bar	0 ... 100 mWS	-1/40
0 ... 16 bar	0 ... 160 mWS	-1/40
0 ... 20 bar	0 ... 200 mWS	-1/40
0 ... 25 bar	0 ... 250 mWS	-1/40
0 ... 40 bar	0 ... 400 mWS	-1/60
0 ... 60 bar	0 ... 600 mWS	-1/100

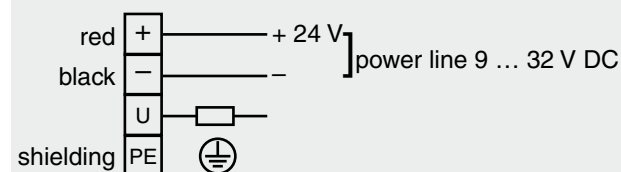
*accuracy 0,5 %

Electrical connection


4 ... 20 mA, 2-wire



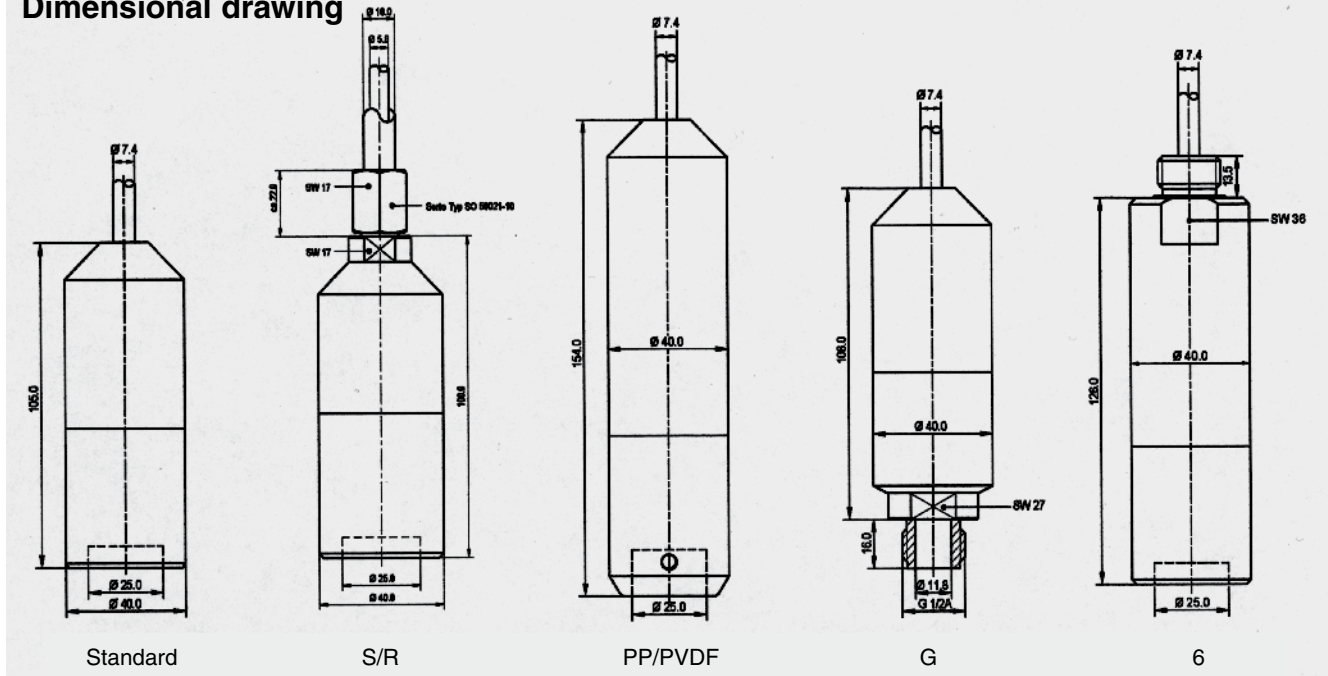
4 ... 10 V, 3-wire



Level probe TST-HD 133


Hydrostatic pressure transmitter for liquid levels,
also available in  design, 40 mm diameter

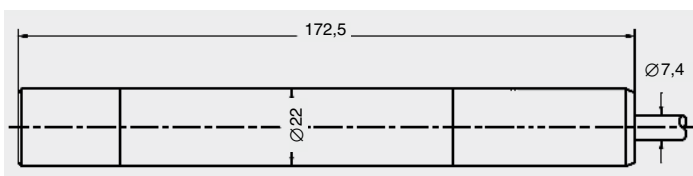
Dimensional drawing




Technical data	Type: TST-HD 133
Measuring range	0 ... 40 mbar to 0 ... 25 bar
Output signal	4 ... 20 mA, 2-wire 0 ... 10 V DC, 3-wire
Accuracy	< 0,2 % of max. final value
Response time	200 ms, other values upon request
Operating voltage U_B	9 ... 32 V DC, max. 30 mA (12 ... 30 V for EX-types)
Media temperature	-25 ... +80° C (special version -25 ... +120° C) -25 ... +70° C for EEx ia IIC T4 -25 ... +50° C for EEx ia IIC T6
Temperature influence	< 0,015 / K % of measuring span
Housing	stainless steel, 1.4404
Protection class	IP 68
Weight, level probe	0,5 kos, approx
Weight, cable	500 g per 10 meters
Electric hookup	polyethylen-(PE) suspension cable, kevlar reinforced, wire cross-section 0,34 mm ² , ventilation hose and air filter equipped. FDR-, PUR-, PTFE-cable available

Level probe TST-HD 135

22 mm diameter, also available in  design.
With integrated overvoltage protection



Construction

- 22 mm diameter, perfect for 1" sounding pipes
- Measuring range from 100 mbar to 20 bar
- Accuracy < 0,25 %
-  II 1 G EEx ia IIC T4/T6
- Integrated overvoltage protection
- Cable acc. to Bg VV-1.12.96-recommendation, appropriate for foodstuff and drinking water
- Optional: integrated Pt100 sensor for temperature measurement

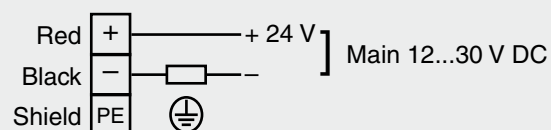
Type designation: example

TST-HD 135, 400 mbar, 4-20 mA, 2 Ltr.,
10 m PE cable

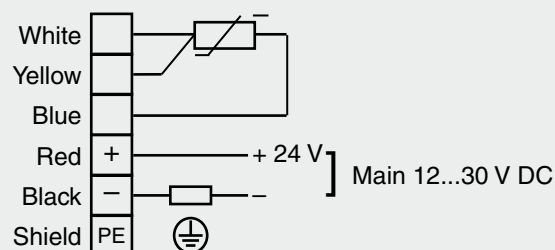
Measuring range (bar)	Measuring range (water column in m)	Overload (bar)
0 ... 100 mbar	0 ... 1 mWS	-0,3/4
0 ... 160 mbar	0 ... 1,6 mWS	-1/5
0 ... 200 mbar	0 ... 2 mWS	-1/5
0 ... 250 mbar	0 ... 2,5 mWS	-1/5
0 ... 0,4 bar	0 ... 4 mWS	-1/6
0 ... 0,5 bar	0 ... 5 mWS	-1/6
0 ... 0,6 bar	0 ... 6 mWS	-1/10
0 ... 1,0 bar	0 ... 10 mWS	-1/10
0 ... 1,6 bar	0 ... 16 mWS	-1/15
0 ... 2,0 bar	0 ... 20 mWS	-1/15
0 ... 2,5 bar	0 ... 25 mWS	-1/15
0 ... 4,0 bar	0 ... 40 mWS	-1/25
0 ... 6,0 bar	0 ... 60 mWS	-1/40
0 ... 10 bar	0 ... 100 mWS	-1/40
0 ... 16 bar	0 ... 160 mWS	-1/40
0 ... 20 bar	0 ... 200 mWS	-1/40

Electrical connection

4 ... 20 mA, 2-wire




4 ... 20 mA, 2-wire and Pt 100 sensor, 3-wire




Technical data	Type: TST-HD 135
Measuring range	0 ... 100 mbar to 0 ... 20 bar
Output signal	4 ... 20 mA, 2-wire
Accuracy	< 0,25 % of max. final value
Response time	200 ms (other values upon request)
Operating voltage U_B	12 ... 30 V DC, max. 30 mA
Media temperature	-25 ... +80° C -25 ... +70° C for EEx ia IIC T4 -25 ... +50° C for EEx ia IIC T6
Temperature influence	< 0,015 / K % of measuring span
Housing	stainless steel, 1.4404, standard seal FPM (Viton)
Protection class	IP 68
Weight, level probe	~ 300 g
Weight, cable	500 g per 10 meters
Electric hookup	polyethylen-(PE) suspension cable, kevlar reinforced, wire cross-section 0,34 mm ² , ventilation hose and air filter equipped. FDR-, PUR-, PTFE-cable available

Level probe TST-HD 135 K

22 mm diameter, also available in  design
Compact size



Description

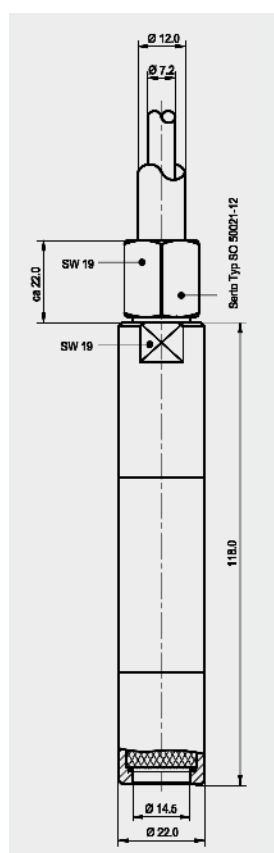
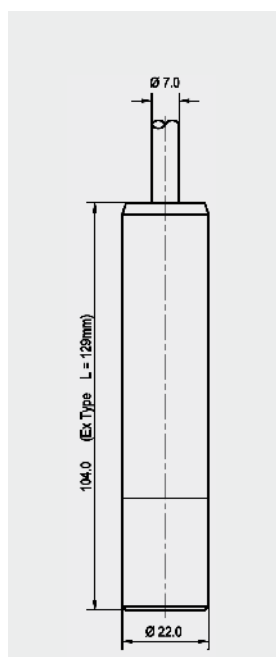
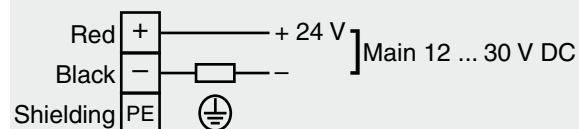
- 22 mm diameter, perfect for 1" sounding pipes
- Measuring range from 100 mbar to 20 bar
- Accuracy < 0,3 %
-  II 1 G EEx ia IIC T4/T6
- Cable acc. to Bg VV-1.12.96-recommendation, appropriate for foodstuff and drinking water
- Ceramic sensor Al_2O_3

Type key (example)

TST-HD 135 K, 200 mbar, 4-20 mA, 2-wire 10 m PE cable

Electrical connection

4 ... 20 mA, 2-wire



Measuring range (bar)	Measuring range (water column in m)	Overload (bar)
0 ... 100 mbar	0 ... 1 mWS	-0,3/4
0 ... 160 mbar	0 ... 1,6 mWS	-1/5
0 ... 200 mbar	0 ... 2 mWS	-1/5
0 ... 250 mbar	0 ... 2,5 mWS	-1/5
0 ... 0,4 bar	0 ... 4 mWS	-1/6
0 ... 0,5 bar	0 ... 5 mWS	-1/6
0 ... 0,6 bar	0 ... 6 mWS	-1/10
0 ... 1,0 bar	0 ... 10 mWS	-1/10
0 ... 1,6 bar	0 ... 16 mWS	-1/15
0 ... 2,0 bar	0 ... 20 mWS	-1/15
0 ... 2,5 bar	0 ... 25 mWS	-1/15
0 ... 4,0 bar	0 ... 40 mWS	-1/25
0 ... 5,0 bar		-1/40
0 ... 6,0 bar	0 ... 60 mWS	-1/40
0 ... 10 bar	0 ... 100 mWS	-1/40
0 ... 16 bar	0 ... 160 mWS	-1/40
2 ... 20 bar	0 ... 200 mWS	-1/40

Technical data	Type: TST-HD 135 K
Measuring range	0 ... 100 mbar to 0 ... 20 bar
Output signal	4 ... 20 mA, 2-wire
Accuracy	< 0,3 % of max. final value
Response time	200 ms (other values upon request)
Operating voltage U_B	9 ... 32 V DC, max. 30 mA (12...30 V for Ex-types)
Media temperature	-25 ... +80° C, -25 ... +70° C for EEx ia IIC T4, -25 ... +50° C for EEx ia IIC T6
Temperature influence	< 0,015 % / K of measuring range
Housing	stainless steel, 1.4404, standard seal FPM (Viton)
Protection class	IP 68
Weight, level probe	~ 200 g
Weight, cable	500 g per 10 meters
Electric hookup	polyethylen-(PE) suspension cable, kevlar reinforced, wire cross-section 0,34 mm ² , ventilation hose and air filter equipped. FDR-, PUR-, PTFE-cable available

Level probe TST-TRA 250 / 20

Hydrostatic pressure sensor for liquid level control
Special model in brass material, 22mm diameter



Applications

- For rainwater applications

Description

- Housing diameter 22 mm
- Housing length 88 mm
- Measuring range max. 250 cm
- 20 meter PE cable equipped
- Measuring accuracy < 1% full scale

Technical data	Type: TST-TRA 250/20
Output signal	4 ... 20 mA, 2-wire
Operating voltage U_B	9 ... 30 V DC, max. 30 mA
Media temperature	0 ... +80° C
Weight, level probe	~ 850 g
Protection class	IP 68

Accessories for level probes

Anchoring clamp,galvanized steel, zinc-plated
for cable diameters 5,5 ... 10,5 mm
Art.code 1091002



Anchoring clamp, stainless steel
for cable diameters 6,5 ... 17,5 mm
Art.code 1091003



Accessories for level probes



Terminal enclosure with pressure balance TS-KG 80
Protection class IP 67
Art.code: 1091004



Universal isolation amplifier TV 500-Ex
Repeater transmitter ST 500 Ex
Please see page 172 for details



Digital display TS-WM 110
Please see page 168 for details



Digital display TS-MR 50
Please see page 166 for details



Zener diode barrier MTL 7787+
Please see page 175 for details