

# P133




Nöding

Messtechnik

## Datasheet Level Transmitter P133

### PERFORMANCE FEATURES

- Dry capacitive ceramic sensor
- Smallest measuring range: 0...40 mbar
- Largest measuring range: 0...60 bar
- Accuracy  $\leq 0,2\%$
- Analog output: 4...20 mA, 2-wires  
0...10 V, 3-wires
- Optionally integrated PT100 / PT1000 Sensor for temperature measurement
- Optionally with lightning protection against voltage peaks
- Additional variations available (P133 datasheet)
- DNV-GL certified
- Ex II 1G Ex ia IIC T4 Ga   
I M2 Ex ia I Mb

### AREAS OF APPLICATION

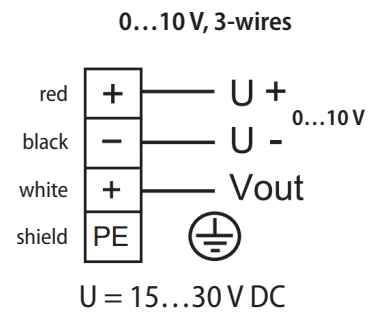
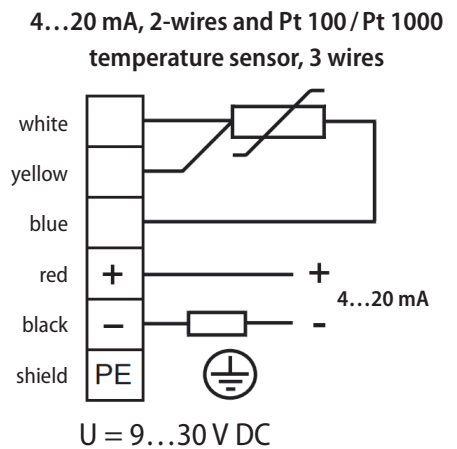
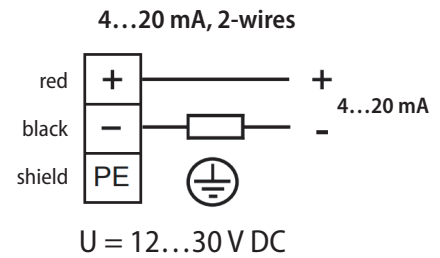
- Gaseous media
- Water
- Waste water
- Well / Deep well
- Oil and fuel
- Viscous and pasty media
- Aggressive media
- Potentially explosive areas
- Maritime applications

The P133 model is designed for use in harsh industrial environments. It features a high-resolution ceramic sensor, ATEX certification, and numerous configuration options. DNV certified, the sensor also finds use in marine applications and provides excellent mechanical resistance. Cable and housing are available in different materials, making the probe suitable for almost all applications. The ceramic sensor element is resistant to aggressive and abrasive media. The capacitive measuring principle enables a very accurate and long-term stable measurement, even at lowest pressures and high overload resistance. Our modular design concept provides a wide variety of products. Feel free to contact us if you need a customization that is not listed in this Datasheet

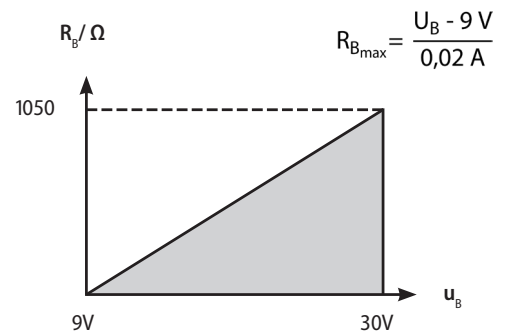
## TECHNICAL DATA

Measuring range	
Pressure range	See table „Measuring ranges“ others on request
Output	
Analog output	4...20 mA 2-wires 0...10 V 3-wires
Power supply	
20 mA output	9...30 V DC
10 V output	15...30 V DC
EX Version	12...30 V DC
Signal characteristics	
Accuracy	$\leq \pm 0,2 \% \text{ FS @ } 25^\circ\text{C}$ $\leq \pm 0,5 \% \text{ FS @ } 25^\circ\text{C}$ at pressure range $\leq 60 \text{ mbar}$
Long term stability	$\leq \pm 0,2 \% \text{ FS/Year}$
Response time	200 ms - others on request
Switch-on time	< 1 s
Temperature coefficient	
Zero	$\leq \pm 0,015 \% \text{ FS/Kelvin}$
Span	$\leq \pm 0,01 \% \text{ FS/Kelvin}$
Temperature ranges	
Medium temperature	-25...80 °C -20...70 °C with EX ia IICT4 Ga
Surrounding temperature	-25...80 °C -20...70 °C with EX ia IICT4 Ga
Storage temperature	-40...85 °C
Electrical protections	
Short-circuit resistance	Permanent
Reverse polarity protection	Protection against reverse polarity, but no function
Electromagnetic compatibility	Interference emissions and immunity acc. to EN 61326
Mechanical resistance	
Vibration	4g with 3-axis resonance frequency according to DIN EN 60068-2-6:2008
Wetted materials	
Housing	Stainless steel 1.4404, PP or PVDF
Sensor	Ceramic Al <sub>2</sub> O <sub>3</sub> - FDA
Sensor seal	FPM (Viton), NBR, EPDM, FFKM (Chemraz / Kalrez)
Surroundings & Exemplary weight	
Protection type	IP 68
P133-EXW1-1005-01 (figure p. 1)	Approx. 600 g

## ELECTRICAL CONNECTION



## LOAD



## MEASURING RANGES

Measuring ranges in bar/ Pa		Measuring ranges in mH <sub>2</sub> O		Overload (bar)
0...40 mbar / 0...4 kPa*	A8	0...0,4 mH <sub>2</sub> O*	W8	-0,3/4
0...50 mbar / 0...5 kPa*	B0	0...0,5 mH <sub>2</sub> O*	W0	-0,3/4
0...60 mbar / 0...6 kPa*	A9	0...0,6 mH <sub>2</sub> O*	W9	-0,3/4
0...100 mbar / 0...10 kPa	00	0...1 mH <sub>2</sub> O	50	-0,3/4
0...160 mbar / 0...16 kPa	01	0...1,6 mH <sub>2</sub> O	51	-0,6/5
0...200 mbar / 0...20 kPa	B1	0...2 mH <sub>2</sub> O	W1	-0,6/5
0...250 mbar / 0...25 kPa	02	0...2,5 mH <sub>2</sub> O	52	-0,6/5
0...300 mbar / 0...30 kPa	X5	0...3 mH <sub>2</sub> O	66	-1/6
0...400 mbar / 0...40 kPa	03	0...4 mH <sub>2</sub> O	53	-1/6
0...500 mbar / 0...50 kPa	B7	0...5 mH <sub>2</sub> O	W2	-1/6
0...600 mbar / 0...60 kPa	04	0...6 mH <sub>2</sub> O	54	-1/10
0...1 bar / 0...100 kPa	05	0...10 mH <sub>2</sub> O	55	-1/10
0...1,6 bar / 0...160 kPa	06	0...16 mH <sub>2</sub> O	56	-1/15
0...2 bar / 0...200 kPa	B3	0...20 mH <sub>2</sub> O	W3	-1/15
0...2,5 bar / 0...250 kPa	07	0...25 mH <sub>2</sub> O	57	-1/15
0...4 bar / 0...400 kPa	08	0...40 mH <sub>2</sub> O	58	-1/25
0...6 bar / 0...600 kPa	09	0...60 mH <sub>2</sub> O	59	-1/40
0...10 bar / 0...1 MPa	10	0...100 mH <sub>2</sub> O	60	-1/40
0...16 bar / 0...1,6 MPa	11	0...160 mH <sub>2</sub> O	61	-1/40
0...20 bar / 0...2 MPa	B5	0...200 mH <sub>2</sub> O	W5	-1/40
0...25 bar / 0...2,5 MPa	12	0...250 mH <sub>2</sub> O	62	-1/40
0...40 bar / 0...4 MPa	13	0...400 mH <sub>2</sub> O	63	-1/60
0...60 bar / 0...6 MPa	14	0...600 mH <sub>2</sub> O	64	-1/100

\* Accuracy 0,5%

<sup>1</sup> EX N/A

## ORDERING CODE

### Output signal

- 1 0...10V 3-wires
- 4 4...20 mA 2-wires
- EX 4...20 mA 2-wires, Ⓜ II 1G Ex ia IIC T4 Ga
- TX 4...20 mA 2-wires, Ⓜ II 1G Ex ia IIC T4 Ga and PT100 3-wires
- FX 4...20 mA 2-wires, Ⓜ II 1G Ex ia IIC T4 Ga and PT1000 3-wires
- T 4...20 mA 2-wires and PT100 3-wires
- F 4...20 mA 2-wires and PT1000 3-wires

### Ranges

Measuring ranges see table

99 Non-standard range (on request)

### Version / material sensor housing

- 1 1.4404 40 mm Ø
- 2 plastics PP<sup>1</sup>
- 4 G 1/2 A a. G 1/4 inside, ISO 228-1, 1.4404<sup>1</sup>
- 6 G 1/2 A top of the cable outlet, ISO 228-1, 1.4404
- G G 1/2 A und 11,8 mm drill hole, ISO 228-1, 1.4404
- GL G 1/2 A und 11,8 mm Bohrung, ISO 228-1, 1.4539 (904L)
- P Kunststoff PVDF<sup>1</sup>
- K 1.4404 mit Kunststoffkappe POM
- KE 1.4404 mit Edelstahlkappe 1.4404
- 7 G 1/2 A, Gehäuse verschweißt, für Serto-Verschraubung am Kopf, ISO 228-1, 1.4404
- 8 G 1/2 A u. G 1/4 innen, Gehäuse verschweißt, für Serto-Verschraubung am Kopf, ISO 228-1, 1.4404<sup>1</sup>
- S 1.4404 40 mm Ø, Gehäuse verschweißt, 12 mm Serto-Verschraubung am Kopf
- R 1.4404 40 mm Ø 12 mm Serto-Verschraubung am Kopf
- U Flansch DN 25 / PN 10-40 DIN 2501 1.4404<sup>1</sup>
- A Flansch DN 40 / PN 10-40 DIN 2501 1.4404<sup>1</sup>
- B Flansch DN 50 / PN 10-40 DIN 2501 1.4404<sup>1</sup>
- 9 Sonderausführung

### Cable length

- 002 2 m cable
- 005 5 m cable
- 010 10 m cable
- 050 50 m cable

Specify custom lengths in meters

### Material cable

- 0 PE cable (0...10V a. PT100/PT1000 N/A)
- 2 PUR cable
- 4 HDPE cable
- 6 FEP cable

### Sensor seal

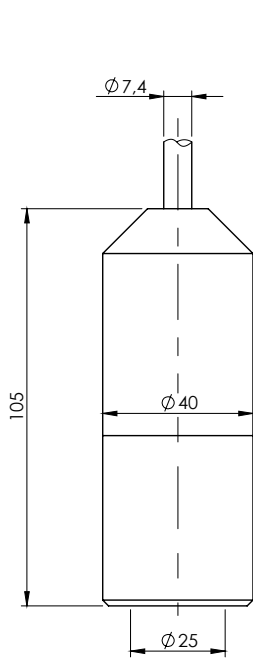
- 1 FPM (Viton), standard
- 2 NBR (Perbunan)
- 3 EPDM-Kautschuk
- 5 FFKM (Chemraz / Kalrez)

Options (Multiple selections possible)

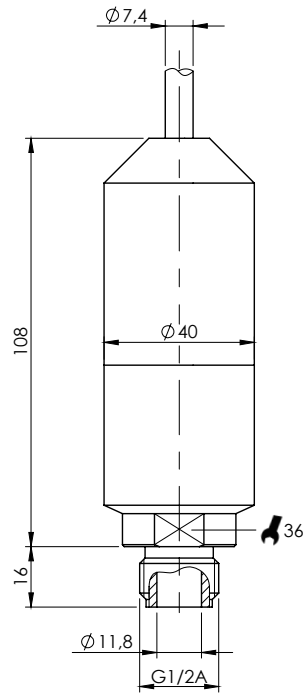
- R Ceramic Sensor 99,9%
- B Lightning protection (0...10V N/A)
- D DNV certified (Only FEP cable possible)
- DH Diesel/Fuel oil
- L Laser welded

P133.09 - [ ] - [ ] - [ ] ...

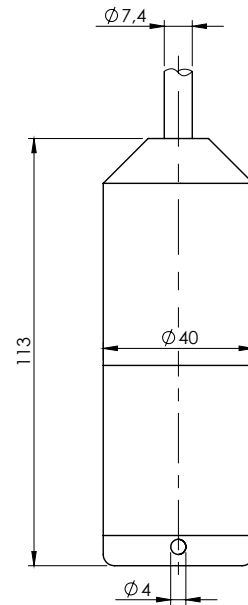
**DIMENSIONS**



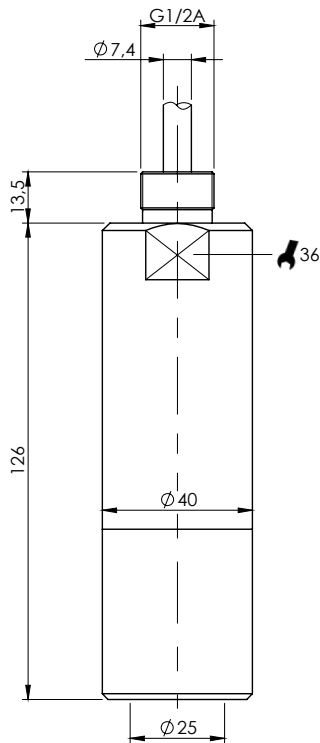
PROCESS CONNECTION ■ TYPE 1



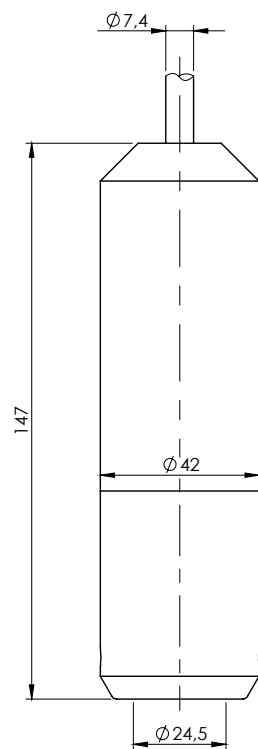
■ TYPE G



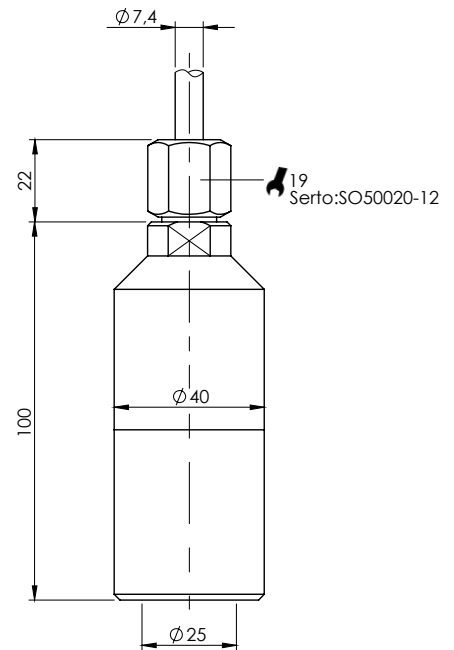
■ TYPE K/KE



PROCESS CONNECTION ■ TYPE 6



■ TYPE 2/P



■ TYPE R/S