Your Global Automation Partner

TURCK

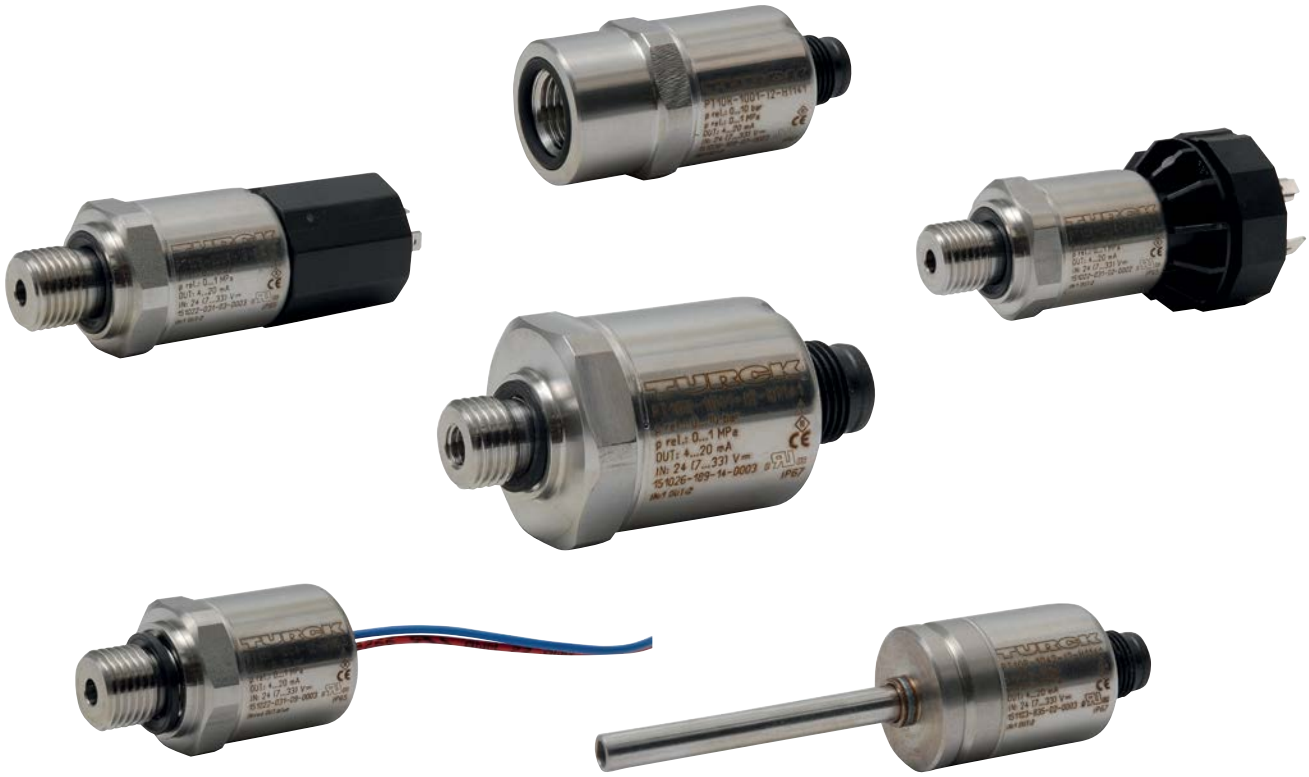
PT1000/PT2000
Pressure Transmitters

PT1000/PT2000 Pressure Transmitters

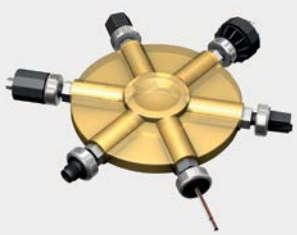
System for demanding pressure measurements

Whether in mining, the marine industry, or for demanding pressure applications in machine building - extremely tough conditions are the order of the day in these environments. They are the ideal field of application for the Turck pressure transmitters.

Maximum resistance to vibration, continuous shocks, permanent pressure and temperature changes - even in aggressive media - make the pressure transmitters a reliable equipment for your plant safety and process control.



Certified portfolio
With extensive pressure ranges from -1…1000 bar relative and 0…16 bar absolute and various certificates, the new Turck pressure transmitters are ideal for a variety of pressure sensing tasks.



Various connectors
A particularly wide range of connector types enables the cost-effective and easy plugging to various system connections.

PT 10R – 10 03 – I2 – H1143 – D830

PT 10R Pressure range –

Pressure range

	bar relative		psi relative
1VR	-1…0 bar[6, 7]	15PSIVG	-15…0 psi[6]
1 V	-1…1 bar	15PSIV	-15…15 psi
1.5 V	-1…1.5 bar	45PSIV	-15…45 psi
2.5 V	-1…2.5 bar	85PSIV	-15…85 psi
5 V	-1…5 bar	130PSIV	-15…130 psi[6]
9 V	-1…9 bar[6]	185PSIV	-15…185 psi
15 V	-1…15 bar	285PSIV	-15…285 psi
24 V	-1…24 bar	485PSIV	-15…485 psi
1R	0…1 bar[6, 7]	15PSIG	0…15 psi[6]
1.6 R	0…1.6 bar[6]	20PSIG	0…20 psi[6]
2.5R	0…2.5 bar[6]	30PSIG	0…30 psi[6]
4R	0…4 bar	60PSIG	0…60 psi
6R	0…6 bar[6]	100PSIG	0…100 psi[6]
10R	0…10 bar[6]	150PSIG	0…150 psi[6]
16R	0…16 bar[6]	200PSIG	0…200 psi[6]
25R	0…25 bar[6]	300PSIG	0…300 psi[6]
40R	0…40 bar[6]	500PSIG	0…500 psi[6]
60R	0…60 bar[6]	750PSIG	0…750 psi[6]
100R	0…100 bar[6]	1000PSIG	0…1000 psi
160R	0…160 bar[6]	2000PSIG	0…2000 psi[6]
250R	0…250 bar[6]	3000PSIG	0…3000 psi[6]
400R	0…400 bar[6]	5000PSIG	0…5000 psi[6]
600R	0…600 bar[6]	7500PSIG	0…7500 psi[6]
1000R	0…1000 bar	14500PSIG	0…14500 psi
	bar absolute		**psi absolute**
1A	0…1 bar a	15PSIA	0…15 psi a
1.6A	0…1.6 bar a	20PSIA	0…20 psi a
2.5A	0…2.5 bar a	30PSIA	0…30 psi a
4A	0…4 bar a	60PSIA	0…60 psi a
6A	0…6 bar a	100PSIA	0…100 psi a
10A	0…10 bar a	150PSIA	0…150 psi a
16A	0…16 bar a	200PSIA	0…200 psi a

Functional principle

PT Pressure transmitter

10 03 Mechanical version –

Process connection

Male thread

13 G1/8", DIN 3852 Form E
40 G1/4" manometer connection
04 G1/4", DIN 3852 Form E[6]
43 G1/2", front sealing
08 G1/2", manometer connection[6]
14 1/8"-27 NPT[6]
03 1/4"-18 NPT[6]
05 7/16"-20 UNF straight[6]
41 M10 x 1, back sealing
20 M20 x 1.5
10 R1/4" acc. to EN 10226
47 Male thread G1/4" PVDF thread front sealing (≤ 16 bar)
48 Male thread G1/2" PVDF thread front sealing (≤ 16 bar)
46 Male thread G 1/8" front sealing
30 Male thread G 1/2", back sealing DIN 3852

Female thread

01 G1/4"[6]
17 1/2"-14 NPT
18 7/16"-20 UNF
44 7/16"-20 UNF with Schrader nipple

Tube connection

42 Cutting tube- (Tube: Ø 6/4, Steel 1.4301/AISI 304)

Design/Functional principle

10 Cylindrical/Ceramic measuring cell[1]
20 Cylindrical/Metal measuring cell fully welded[2]

Analog signal output

A wide range of standard analog signals facilitates and guarantees smooth integration into the various automation systems.

Accurate, robust maintenance-free

By using high-quality materials and state of the art processors, PT1000/2000 pressure transmitters combine highest accuracy with maximum load capability. This makes them robust and reliable resources for the detection of pressure.

I2	Output type	–	H1143	Electrical connections	/	D830	Special type

Output type

Current output

I2	4…20 mA, 7.0…33.0 VDC, 2-wire[6]
I4	4…20 mA, 7,0…33.0 VDC, 2-wire increased interference immunity
IX	4…20 mA, 10,0…30.0 VDC, 2-wire ATEX

Voltage output

U1	0…10 V, 12…33 VDC, 3-wire [6]
U2	1…6 V, 8.0…33.0 VDC, 3-wire
U3	0…5 V, 7.0…33.0 VDC, 3-wire
UA	0…10 V, 24 VAC ± 15 %/12…33 VDC[2], 3-wire[3]
U6	ratiometric (10…90 %, 4.5…5.5 VDC, 3-wire
UX	ratiometric (10…90 %, 4.5…5.5 VDC, 3-wire

Electrical connections

M12 x 1 connector

H1143	M12 x 1[6] 2L IN=1 OUT=3 3L IN=1 OUT=4 GND=3
H1144	M12 x 1[4][6] 2L IN=1 OUT=4, 3L IN=1 OUT=3 GND=4
H1141	M12 x 1[6] 2L IN=1 OUT=2 3L IN=1 OUT=2 GND=3

DIN EN 175301-803 connector

DA91	Design A[6] 2L IN=1 OUT=2 3L IN=1 OUT=2 GND=3
DC91	Design C 2L IN=1 OUT=2 3L IN=1 OUT=2 GND=3
DC92	Design C 2L IN=3 OUT=1 3L IN=3 OUT=2 GND=1
DC95	Design C 2L IN=1 OUT=2 3L IN=1 OUT=3 GND=2

Cable with quick connect

CM2.0	2.0 m[5] IN=brown OUT=green IN=brown OUT=green GND=white

PG connection

TC11	Cable gland quick connect, PG9[5] IN=1, OUT=2, GND=3

Metri Pack

MP1	Metri Pack 150 2L IN=B, A=OUT, 3L IN=B, Out C, GND=A
RA15	Rast connector 2,5 IN=1, GND:2,OUT:3
WM0,5	Connection 2L IN=rot, OUT blue 3L In=rot, OUT blue, black GND

Standard

O	For oxygen applications
D830	With EPDM seal
W	Drinking water approval
X	Pressure tip orifice

Notes

[1] Pressure range [-1…60 bar], [-30…750 psi]
[2] Pressure range [-1…1000 bar], [-30…14500 psi]
[3] 24 VAC variant not with M12 x 1, RAST, connector and wire connection
[4] No ratiometric output, No AC supply
[5] As an accessory with DT04-3P or 4P connector possible
[6] Preferred types
[7] Only available with ceramic cell

Compact design

The design is reduced to a minimum and enables installation even in very narrow spaces. The compact devices are therefore ideally suited for pressure monitoring in machine and plant construction.

Multifunctional

The modular design of the pressure transmitters enables a tremendous breadth and depth of the product portfolio. For countless application requirements we offer the appropriate devices at an optimal price-performance ratio.

PT1000/PT2000 – Types and Data

Pressure range				
Relative	-1…1000 bar			
Absolute	0…16 bar			
Permissible overload	PT1000: ≤ 4 bar 3.0 x FS	PT2000: ≤ 6 bar 5 x FS; > 6 bar 3 x FS (max. 1500 bar)		
Burst pressure	PT1000: > 4 bar 2.5 x FS	PT2000: < 6 bar 10 x FS; > 6 bar 6 x FS (max. 2500 bar)		
Temperature				
Medium	PT1000: -40…+125 °C Ex (-30…+120 °C)	PT2000: -40…+135 °C Ex (-30…+120 °C)		
Environment	-30…+85 °C Ex (-25…+85 °C)			
Storage	-50…+100 °C			
Materials				
Housing	Stainless steel 1.4404/AISI 316L			
Connector	Polyacrylamide 50 % GF UL 94 V-0			
Media contact:	**Sealing material** FPM, EPDM, NBR, MVQ **Measuring element** ceramics Al2O3 (96 %) **Pressure port** stainless steel 1.4404/AISI 316L, Stainless steel 1.4404/AISI 316LDF			
Electrical specifications				
	Output	**Supply**	**Load**	**Current consumption**
2-wire	4…20 mA	7…33 VDC	$< \frac{\text{Supply voltage -7 V}}{0.02\ \text{A}}$ [Ohm]	< 23 mA
Ex	4…20 mA	10…30 VDC	$< \frac{\text{Supply voltage -10 V}}{0.02\ \text{A}}$ [Ohm]	< 23 mA
3-wire	0…5 V	7…33 VDC	> 10 kOhm/< 100 nF	< 7 mA
	1…6 V	8…33 VDC	> 10 kOhm/< 100 nF	< 7 mA
	0…10 V	12…33 VDC	> 10 kOhm/< 100 nF	< 7 mA
	0…10 V	12…33 VDC/24 VAC ±15 %	> 10 kOhm/< 100 nF	< 7 mA
	ratiom. 10…90 %	5 VDC ± 10 %	> 10 kOhm/< 100 nF	< 7 mA
Ex	ratiom. 10…90 %	5 VDC ± 10 %	> 10 kOhm/< 100 nF	< 7 mA
Reverse polarity protection	Short-circuit proof and reverse-polarity protection, with max. supply voltage.			
Dielectric strength	500 VDC			
Protection class	Protection class III			
Dynamic behavior				
Response time	< 2 ms, typ. 1 ms			
Load change	< 100 Hz			
Accuracy *				
Characteristic	+/- 0.3 [% FS]			
Resolution	+/- 0.1 [% FS]			
Temperature behaviour	max. /- 0.2 [% FS/10K]			
Long-term stability acc. to IEC 60770-1	max. /- 0.25 [% FS/10K]			
Tests/Approvals				
Electromagnetic compatibility	CE conform acc. to EN 61326-3-2			
Increased interference immunity	EN 50121-2-3			
Schock nach IEC 68-2-27	100 g,11 ms, half sine curve, 6 directions, free fall from 1 m on concrete (6 x)			
Continuous shock IEC 68-2-29	40 g for 6 ms, 1000 x all 3 directions			
Vibration acc. to IEC 68-2-6	20 g, 15…2000 Hz, 15…25 Hz with amplitude ± 15 mm, 1 octave/minute all 3 directions, 50 continuous loads			
UL	ANSI/UL 61010-1 acc. to E325110			

Explosion protection	ratiom. 10…90 %	4…20 mA
Intrinsic safety [i]	Ex II 1/2 G Ex ia IIC T4 Ga/Gb Ex II 1/2 D Ex ia IIIC T125°C Da/Db	Ex II 1/2 G Ex ia IIC T4 Ga/Gb Ex II 1/2 D Ex ia IIIC T125°C Da/Db
EC type-examination certificate	SEV 15 ATEX 0173	SEV 10 ATEX 0145
Connection to certified intrinsically safe resistive circuits with peak values	Ui < 15 VDC; Ii < 200 mA; Pi < 750 mW	Ui < 30 VDC; Ii < 100 mA; Pi < 750 mW
Inductance and capacitance Versions with connector EN 175301-803-A or M12x1	Li = 0 nH; Ci < 150 nF	Li = 0 nH; Ci < 0 nF

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