Your Global Automation Partner

TURCK

Pressure Sensors
Industrial Pressure Measurement in Fluids and Gases

Pressure Sensors for Numerous Applications

Pressure is one of the factors that needs to be most frequently detected and monitored in the process - and manufacturing industry. Whether in standard applications or under special conditions, each application requires a perfect solution for its needs.

Therefore, high-quality materials, flexible process connections, easy programming as well as high accuracy and multiple display functions are the essential features of Turck pressure sensors.

Market-driven solutions

With a comprehensive standard portfolio of pressure sensors, Turck offers technically as well as economically attractive solutions for a wide range of pressure measuring tasks. In high-volume projects as well as in smaller quantities, you benefit of the highest quality at competitive prices.

Low storage costs

The underlying concept of the pressure sensor portfolio is to solve the diverse requirements with a minimum number of device types. This reduces the complexity of inventory and thus the cost of the handling and holding of various device variants.

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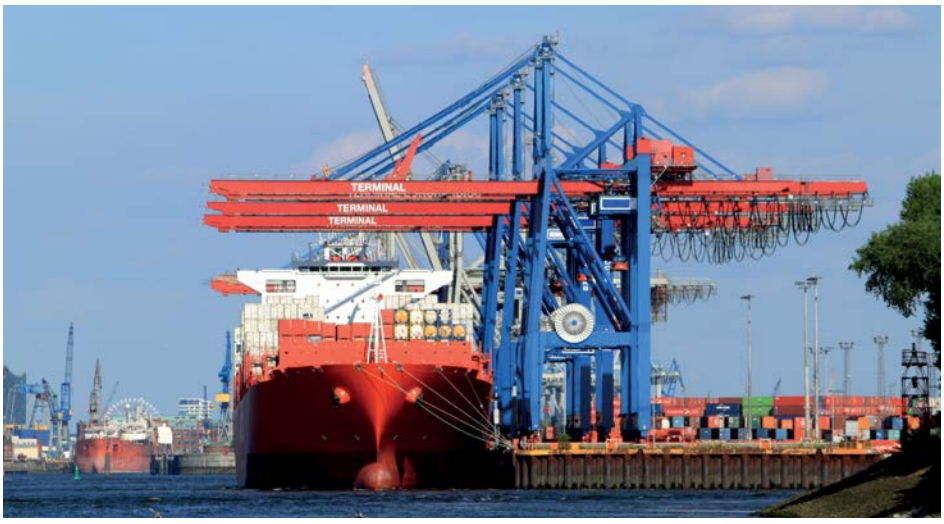
Reliable measurement technology

In the development of the electronics and the housing it was a major demand that harsh application conditions such as aggressive media or change of environmental conditions do not affect the accurate and reliable function of the sensors.

Certified quality

With several international approvals, the pressure sensors are versatile usable and a highly reliable and safe instrument for demanding pressure sensing in plant and machine construction.



Made-to-measure solution

With the Turck product portfolio, you solve an enormous variety of pressure measuring tasks in the most diverse applications. With regards to customer-specific requirements not covered by the standard, we develop the optimum solutions for you in technical and economic terms.

PS Series

The robust all-rounder

- -1…600 bar relative pressure
- Accuracy 0.5 % f.s.
- 0…16 bar absolute pressure
- Very high overload capacity
- Fully potted IP69K
- Stainless steel housing 1.4305 (AISI 303) or 1.4404 (316 L)
- Rotatable sensor body
- IO-Link
- ATEX certified

If high chemical resistance, durability and reliability are required, the PS series is optimally suited. Especially designed to function reliably in the harshest environments, neither dust, water, aggressive oils or alkalis can affect the operation of the PS sensors. Short delivery times, variable process connections and a wide range of output types make the PS sensors reliable all-rounders.

PS 010V – 3 01 – LI2UPN 8 X – H1 1 4 1 / 3GD

PS 010V Pressure sensor – **3 01** Type/Pressure connection – **LI2UPN 8 X** Electrical version –

Measuring range

01VR	-1…0 bar g [1]
001R	0…1 bar g [1]
0.25VR	-0.25…0.25 bar g
001A	0…1 bar a
003A	0…2.5 bar a
010A	0…10 bar a
016A	0…16 bar a
001V	-1…1 bar g [1]
003V	-1…2.5 bar g [1]
010V	-1…10 bar g
016V	-1…16 bar g
025V	-1…25 bar g
040V	-1…40 bar g
100R	1…100 bar g
250R	1…250 bar g
400R	1…400 bar g
600R	1…600 bar g [2]

Functional principle

PS	Pressure sensor

Pressure connection

01	G¼"female thread
02	¼"-18NPT female thread
03	¼"-18NPT male thread
04	G¼"male thread
05	7/16" UNF male thread (only for design 5)
06	G¾" male thread front-flush (only for design 6)
07	1 ½" Tri-Clamp (only for design 6)
08	G½" male thread manometer connection (only for design 5)
09	G½" male thread front-flush (only for design 6)
10	R¼"male thread
11	R¼" female thread

Design

3	adjustable, with display, non-rotatable sensor body
5	adjustable, with display, rotatable sensor body
6	adjustable, with display, rotatable sensor body, with front-flush membrane

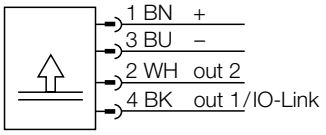
with LED indicator

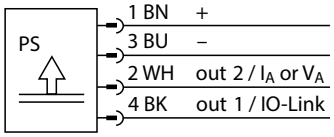
Operating voltage

8	15 (18)…30 VDC

Output type

2UPN	2 switching outputs/IO-Link
LI2UPN	current or voltage and switching output/IO-Link





1) not available for PS…609
2) not available for design 6

H1 1 4 1 Electrical connection / **3GD** Special type

Assignment

1	standard assignment

Number of contacts

4	4-pin

Connector type

1	straight

Connector type

H1	receptacle, M12 x 1

Special type

3GD	Ex zone

PC Series

The smart IO-Link pressure transmitter

- -1…600 bar relative pressure
- Ceramic measuring cell with switchpoint accuracy 0.5 % f.s.
- IO-Link
- Full stainless steel housing 1.4305
- Protection class IP69K
- Compact and rugged design
- Excellent EMC properties
- 2 switching outputs or communication via IO-Link

With its compact, display-less design in a full stainless steel housing, the sensors of the PC series are particularly resilient. For the smart connection of the PC series IO-Link is available as output signal. IO-Link simplifies the exchange of information, as well as parameterization and thus reduces the operation and maintenance effort considerably. In addition to IO-Link there are also switching outputs available.

PC 250R – 2 01 – 2UPN 8 X – H1 1 4 1

PC 250R Functional principle – **2 01** Mechanical version – **2UPN 8 X** Electrical version –

Measuring range

01VR	-1…0 bar g
001R	0…1 bar g
001V	-1…1 bar g
003V	-1…2.5 bar g
010V	-1…10 bar g
016V	-1…16 bar g
025V	-1…25 bar g
040V	-1…40 bar g
100R	1…100 bar g
250R	1…250 bar g
400R	1…400 bar g
600R	1…600 bar g

Functional principle

PC	Pressure switch

Pressure connection

01	G¼“female thread
02	¼"-18 NPT female thread
03	¼"-18-NPT male thread
04	G¼“male thread
10	R¼“male thread
11	R¼“ female thread

Design

2	cylinder without display

Electrical version

X	with LED indicator

Operating voltage

8	15…30 VDC

Output type

2UPN	2 switching outputs

H1 1 4 1 Electrical connection

Assignment

1	standard assignment

Number of contacts

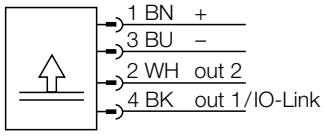
4	4-pin

Connector type

1	straight

Connector type

H1	receptacle, M12 x 1



PT-2 Series

The front-flush type for viscous media

- -1…400 bar relative pressure
- Accuracy 0.5 % f.s.
- Stainless steel 1.4435 (AISI 1.4542)
- Protection class IP67
- Fully welded construction
- Excellent EMC properties
- -40…+85 °C media temperature
- 4…20 mA

The sensors of the PT-2 series are particularly suitable for highly viscous, fibrous or crystallization-prone fluids. The front-flush design prevents dead spaces where deposits can adhere. This makes the devices especially suitable for adhesive application. Thanks to the fully welded housing the PT-2 sensors measure reliably, even under very harsh application conditions.

PT 010R – 2 6 – LI3 – H1 1 4 1

PT 010R Functional principle – **2 6** Mechanical version – **LI3** Electrical version –

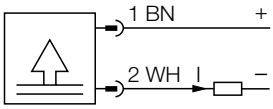
Measuring range
- **010R** 0…10 bar g
- **016R** 0…16 bar g
- **025R** 0…25 bar g
- **040R** 0…40 bar g
- **060R** 0…60 bar g
- **100R** 0…100 bar g
- **160R** 0…160 bar g
- **250R** 0…250 bar g
- **400R** 0…400 bar g

Functional principle
- **PT** Pressure transmitter

Pressure connection
- **6** G¾" male thread, front-flush
- **9** G½" male thread, front-flush

Design
- **2** front-flush membrane, cylinder without display

Electrical version
- **LI2** 4…20 mA 3-wire
- **LI3** 4…20 mA 2-wire



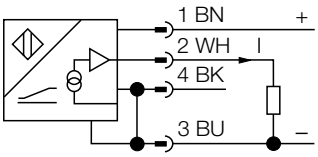
H1 1 4 1 Electrical connection

Assignment
- 1 standard assignment

Number of contacts
- **4** 4-pin

Connector type
- **1** straight

Connector type
- **H1** receptacle, M12 x 1



PK-N/PK-P Series

The specialist for pick-and-place applications

- -1…12 bar relative pressure
- Accuracy 0.2 % f.s.
- NC/NO programmable switchpoints
- 2 switching outputs (PNP) or 1 switching output and IO-Link
- Protection class IP65
- Shock and vibration proof
- Nano lightweight design
- Response time < 2.5 ms (200 Hz)
- Programmable keylock
- Suitable for dry/oiled air and inert gases

The PK series has been developed specifically for the requirements in pneumatic applications. Compact, precise and lightly built, the sensors are suited for versatile use in the field of handling and automation systems. The sensors feature two switching outputs, which can be programmed in the hysteresis function as openers or closers

PK-N

PK-P

PK	01VR	–	N	12	AL	–	2UP	8	X	–	V1	1	4	1

PK 01VR – Functional principle

Measuring range

01VR	-1…0 bar g
01V	-1…1 bar g
010R	0…10 bar g
10V	-1…10 bar g
012R	0…12 bar g

Functional principle

PK	Pressure sensor, compact

N 12 AL – Mechanical version

Housing material

blank	Plastic (Design P)
AL	Aluminium (Design N)

Pressure connection

12	G⅛" female thread
13	G⅛" male thread
14	NPT⅛" male thread

Design

N	Cylinder, axial display
P	Cylinder, radial display

2UP 8 X – Electrical version –

Indication

X…	LED display

Voltage range

8	15 (18)…30 VDC

Output type

2UP	2 switching outputs PNP
2UPN	2 switching outputs/ IO-Link

V1 1 4 1 – Electrical connection

Assignment

1	standard assignment

Number of contacts

4	4-pin

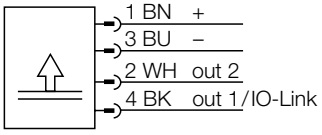
Connector type

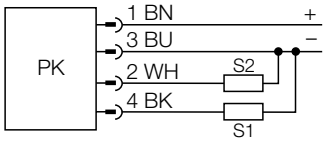
1	straight

Connector type

V1	receptacle, M8*

*M12 x 1 optional





PT1000/PT2000

For the most demanding applications in machine construction

- -1…1000 bar relative pressure
- 0…16 bar absolute pressure
- For media temperatures in the range of -40…+135 °C
- Compact space-saving design
- Stainless steel 1.4404/AISI 316L
- ATEX approval
- Marine and drinking water approval
- Increased interference immunity
- With numerous process connections

Whether in mining, the marine industry, or for demanding pressure applications in machine building, extremely rough conditions are the norm.
Specifically for these tough requirements Turck offers the new PT1000/2000 pressure transmitters.

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

PT	10R	–	10	03	–	I2	–	H1143	–	D830

PT	10R	Pressure range	–	10	03	Mechanical version	–

Pressure range

	bar relative
1VR	-1…0 bar[6]
1V	-1…1 bar
1.5V	-1…1.5 bar
2.5V	-1…2.5 bar
5V	-1…5 bar
9V	-1…9 bar[6]
15V	-1…15 bar
24V	-1…24 bar
1R	0…1 bar[6]
1.6 R	0…1.6 bar[6]
2.5R	0…2.5 bar[6]
4R	0…4 bar
6R	0…6 bar[6]
10R	0…10 bar[6]
16R	0…16 bar[6]
25R	0…25 bar[6]
40R	0…40 bar[6]
60R	0…60 bar[6]
100R	0…100 bar[6]
160R	0…160 bar[6]
250R	0…250 bar[6]
400R	0…400 bar[6]
600R	0…600 bar[6]
1000R	0…1000 bar
	bar absolute
1A	0…1 bar a
1.6A	0…1.6 bar a
2.5A	0…2.5 bar a
4A	0…4 bar a
6A	0…6 bar a
10A	0…10 bar a
16A	0…16 bar a

	psi relative
15PSIVG	-15…0 psi[6]
15PSIV	-15…15 psi
45PSIV	-15…45 psi
85PSIV	-15…85 psi
130PSIV	-15…130 psi[6]
185PSIV	-15…185 psi
285PSIV	-15…285 psi
485PSIV	-15…485 psi
15PSIG	0…15 psi[6]
20PSIG	0…20 psi[6]
30PSIG	0…30 psi[6]
60PSIG	0…60 psi
100PSIG	0…100 psi [6]
150PSIG	0…150 psi[6]
200PSIG	0…200 psi[6]
300PSIG	0…300 psi[6]
500PSIG	0…500 psi [6]
750PSIG	0…750 psi [6]
1000PSIG	0…1000 psi[6]
2000PSIG	0…2000 psi[6]
3000PSIG	0…3000 psi [6]
5000PSIG	0…5000 psi [6]
7500PSIG	0…7500 psi[6]
14500PSIG	0…14500 psi
	psi absolute
15PSIA	0…15 psi a
20PSIA	0…20 psi a
30PSIA	0…30 psi a
60PSIA	0…60 psi a
100PSIA	0…100 psi a
150PSIA	0…150 psi a
200PSIA	0…200 psi a

Functional principle

PT	Pressure transmitter

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]

PT1000

PT2000

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[7]

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[7]

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	Wire connection 2 L IN=red, OUT blue 3 L IN=red, OUT blue, black GND

Standard

O	For oxygen applications
D830	With EPDM seal
W	Drinking water approval
X	Pressure peak protection

Notes

(1) Pressure range [-1…60 bar], [-30…750 psi]
(2) Pressure range [-1…1000 barg], [-30…14500 psig]
(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 with H1143 and DA91

Accessories

Connection and function accessories

Product-specific installation accessories ensure maximum degrees of freedom in the application. We offer accessories for operating, mounting and protection of the pressure sensors.

Available are, among other things, mounting accessories for easy and safe mounting of the PK sensor series as well as accessories, which safely protect the PS sensor series against mechanical destruction.

With a cooling section for the PS and PT sensors, high media temperatures can be reduced, so that the pressure detection even at temperatures over 200 °C is possible.

PTS-MB

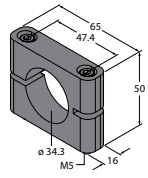
PCS-G1/4A4

PTS Cover

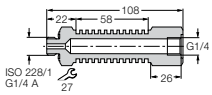
PK-N-MZ-001

PK-P-MZ-001

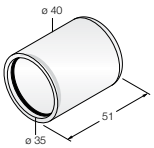
Fixing clamp



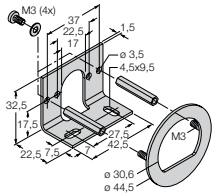
Cooling section



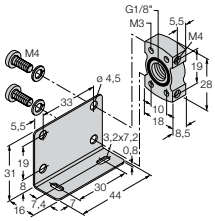
Closure cap for PS series



PK-N mounting kit



PK-P mounting kit



RKC4.4T-2/TEL

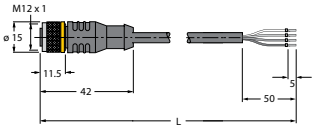
PCV-G1/8A4

PCV-G1/4A4

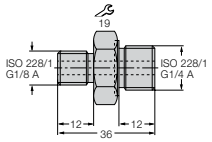
PCV-G1/2A4

PCV-N1/4A4

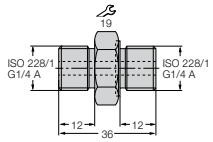
Cables



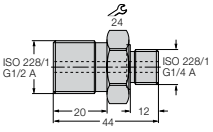
Threaded nipple G1/8" on G1/4"



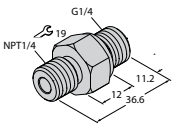
Threaded nipple G1/4" on G1/4"



Threaded nipple G1/2" on G1/4"



Threaded nipple N1/4" on G1/4"



Fluid Sensors Portfolio

Sensors for pressure, flow, temperature, level control and capacitive position sensing

In addition to pressure sensors, Turck offers an extensive portfolio of sensors for the monitoring of flow velocity, filling level as well as temperature and capacitive position sensing.

Flow sensors/Flow meters

The failure of flow leads, often and inevitably, in almost all applications of production and process technology to significant impairments and outages. The monitoring of the flow plays an essential role. Turck offers different flow monitoring systems from universal to the special use.

Temperature measurement

To operate machines and equipment safely and efficiently, the temperature must be controlled continuously as a critical parameter in many industrial processes. Combined with numerous connection options and variable output signals, the Turck temperature sensor portfolio guarantees maximum flexibility in temperature measurement.

Level control

For level detection in liquids or solids, Turck offers special level sensors that detect levels according to the capacitive measuring principle or continuously monitor the filling level. Like all fluid sensors from Turck, the level sensors are also very robust, reliable and resistant to aggressive operating conditions.

TURCK

28 subsidiaries and over
60 representations worldwide!

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