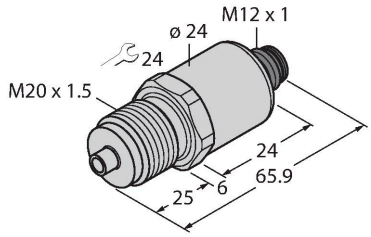
PT1V-1020-IX-H1143
Pressure Transmitter – With Current Output (2-Wire)



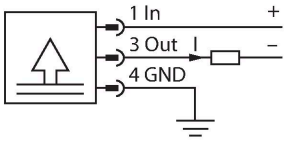
Features

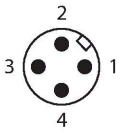
- Ceramic measuring cell
- Compact and robust design
- Excellent EMC properties
- Pressure range -1…1 bar rel.
- 10…30 VDC
- Analog output 4…20 mA
- Process connection M20 × 1.5 male thread, front sealing and manometer (combi)
- Connector device, M12 × 1
- ATEX, IECEx
- Category II 1/2 GD, Ex zone 0

Technical data

Type	PT1V-1020-IX-H1143
ID	100025868
Pressure range	
Pressure type	Relative pressure
Pressure range	-1…1 bar
	-14.5…14.5 psi
	-0.1…0.1 MPa
Admissible overpressure	≤ 3 bar
Burst pressure	≥ 3 bar
Response time	< 2 ms, typ. 1 ms
Long-term stability	0.25 % FS, according to IEC EN 60770-1
Power supply	
Operating voltage	10…30 VDC
Current consumption	≤ 23 mA
Short-circuit/reverse polarity protection	yes / yes
Protection type and class	IP67 / III
Insulation voltage	750 VDC
Outputs	
Output 1	Analog output
Output function	Analog output current
Analog output	
Current output	4…20 mA
Load	≤ (Supply voltage -10)/20 kΩ
Resolution	<± 0.1 % FS
Accuracy LHR	±0.3 % FS (typical; max. ±0.5 % FS)

Wiring diagram





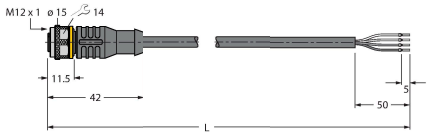
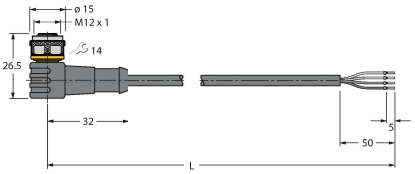
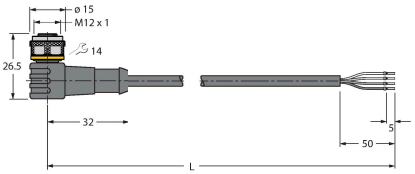
Functional principle

The pressure sensors in the PT…-1000 product series operate with a ceramic measuring cell in various pressure ranges of up to -1…60 bar in 2-, 3- or even 4-wire technology. Depending on the sensor variant, the processed signal is available as an analog output signal (4…20 mA, 0…10 V, 0…5 V, 1…6 V, ratiometric) or as a digital IO-Link process parameter. The IO-Link sensor variants also have two independently configurable switching outputs.
In addition to the standard variants, there are special sensors for uses such as ATEX areas or for oxygen applications.
A wide range of process connections and electrical connections offer a high degree of flexibility in a wide range of applications.

Technical data

Temperature behaviour	
Medium temperature	-30…+120 °C
Temperature coefficient	± 0.2 % of full scale/10 K
Environmental conditions	
Ambient temperature	-25…+85 °C
Storage temperature	-50…+100 °C
Vibration resistance	20 g, 15…2000 Hz, 15…25 Hz with amplitude ± 15 mm, 1 octave/minute in all 3 directions, 50 continuous loads, acc. to IEC 68-2-6
Shock resistance	100 g, 11 ms, half sinusoidal curve, all 6 directions, free fall from 1 m onto concrete (6x) acc. to IEC 68-2-27
Mechanical data	
Housing material	Stainless-steel/Plastic, 1.4404 (AISI 316L)/polyarylamide 50 % GF UL 94 V-0
Pressure connection material	Stainless steel 1.4404 (AISI 316L)
Pressure transducer material	Ceramic Al_2O_3
Sealing material	FPM spez.
Process connection	M20 × 1.5 male thread, front sealing and manometer (combi)
Wrench size pressure connection / coupling nut	24
Electrical connection	Connector, M12 × 1
Max. tightening torque of housing nut	30 Nm
Reference conditions acc. to IEC 61298-1	
Temperature	15…+25 °C
Atmospheric pressure	860…1060 hPa abs.
Humidity	45…75 % rel.
Auxiliary power	24 VDC
Tests/approvals	
Approvals	cULus
UL registration number	E302799
Important note	For intrinsically safe applications, the values specified in the corresponding Ex certificates (ATEX, IECEX, UL etc.) apply.
Ex approval acc. to conformity certificate	SEV 16 ATEX 0145
Application area	II 1/2 GD
Ignition protection category	Gas Ex ia IIC; dust Ex ia IIIC
MTTF	1189 years acc. to SN 29500 (Ed. 99) 40 °C

Accessories

Dimension drawing	Type	ID	
	RKC4.441T-2/TEB	6628444	Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, blue; cULus approval
	RKC4.441T-2/TXB	6631010	Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, blue; cULus approval
	WKC4.441T-2/TEB	6628451	Connection cable, M12 female connector, angled, 4-pin, cable length: 2 m, jacket material: PVC, blue; cULus approval
	WKC4.441T-2/TXB	6629180	Connection cable, M12 female connector, angled, 4-pin, cable length: 2 m, jacket material: PUR, blue; cULus approval

Instructions for use

Intended use

This device fulfills Directive 2014/34/EU and is suited for use in areas exposed to explosion hazards according to EN 60079-0:2012 + A11:2013, EN 60079-11:2012 and EN 60079-26:2015.In order to ensure correct operation according to the intended purpose, the national regulations and directives must be observed.

For use in explosion hazardous areas conform to classification

The sensors may be used only in dust or gas areas

Marking (see device or technical data sheet)

II 1/2 GD Ex ia IIC T4 Ga/Gb and Ex ia IIIC T125°C Da/Db acc. to EN60079-0:12+A11:2013

Installation/Commissioning

These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas.Please verify that the classification and the marking on the device comply with the actual application conditions.

This device is only suited for connection to approved Exi circuits according to EN 60079-0 and EN 60079-11. Please observe the maximum admissible electrical values.After connection to other circuits the sensor may no longer be used in Exi installations. When interconnected to (associated) electrical equipment, it is required to perform the "Proof of intrinsic safety" (EN60079-14).

Installation and mounting instructions

Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device.If the devices and the cable could be subject to mechanical damage, they must be protected accordingly. They must also be shielded against strong electro-magnetic fields.The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet.In order to avoid contamination of the device, please remove possible blanking plugs of the cable glands or connectors only shortly before inserting the cable or opening the cable socket.

Special conditions for safe operation

The device must be protected against any kind of mechanical damage.

Service/Maintenance

Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.