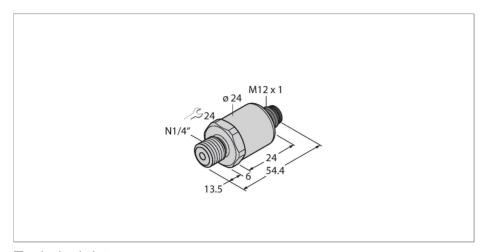


PT4R-1003-I2-H1143 Pressure Transmitter – With Current Output (2-Wire)



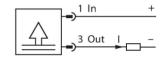
Technical data

PT4R-1003-I2-H1143
100033123
-40+125 °C
Relative pressure
04 bar
058.02 psi
00.4 MPa
≤ 12 bar
≥ 12 bar
< 2 ms, typ. 1 ms
± 0.25 % FS, according to IEC EN 60770-1
733 VDC
≤ 23 mA
yes / yes
III
Analog output
Analog output Analog output current
<u> </u>
<u> </u>
Analog output current

Features

- Ceramic measuring cell
- Compact and robust design
- Excellent EMC properties
- ■Pressure range 0...4 bar rel.
- ■7...33 VDC
- ■Analog output 4...20 mA
- Process connection 1/4"-18 NPT male thread
- Plug-in device, M12 × 1

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

Accuracy LHR	±0.3 % FS (typical; max. ±0.5 % FS)
Mechanical data	
Housing material	Stainless-steel/Plastic, 1.4404 (AISI 316L)/polyarylamide 50 % GF UL 94 V-0
Process connection	1/4" NPT-18 male thread
Pressure connection material	Stainless steel 1.4404 (AISI 316L)
Material pressure transducer	Ceramic Al₂O₃
Sealing material	FPM spez.
Wrench size pressure connection / coupling nut	24
Max. tightening torque of housing nut	20 Nm
Electrical connection	Connector, M12 × 1
Protection class	IP67
Environmental conditions	
Ambient temperature	-30+85 °C
Storage temperature	-50+100 °C
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
Vibration resistance	20 g, 152000 Hz, 1525 Hz with amplitude ± 15 mm, 1 octave/minute in all 3 directions, 50 continuous loads
Tests/approvals	
UL registration number	E302799
Reference conditions acc. to IEC 61298-1	
Temperature	15+25 °C
Atmospheric pressure	8601060 hPa abs.
Humidity	4575 % rel.
Auxiliary power	24 VDC
Temperature behaviour	
MTTF	1189 years acc. to SN 29500 (Ed. 99) 40 °C
Technical data	
Туре	PT4R-1003-I2-H1143
ID	100033123
Pressure type	Relative pressure
Pressure range	04 bar
	058.02 psi
	00.4 MPa



Technical data

Burst pressure ≥ 12 bar Response time <2 ms, typ. 1 ms Long-term stability 0.25 % FS, according to IEC EN 60770-1 Power supply Operating voltage U₀ 733 VDC Current consumption ≤23 mA Short-circuit/reverse polarity protection yes / yes Protection class IP67 Insulation class III Insulation voltage 750 VDC Outputs Output 1 Analog output current Analog output current Analog output current output 420 mA Load ≤(supply voltage -7)/20 kΩ Resolution <±0.1 % FS Accuracy LHR ±0.3 % FS (typical; max. ±0.5 % FS) Temperature behaviour Medium temperature -40+125 °C Temperature coefficient ±0.2 % of full scale/10 K Environmental conditions Ambient temperature -50+100 °C Vibration resistance 20 g, 15200 Hz, 1525 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)/Poplyarylamide 50 % GF UL 94 V-0 Pressure connection material Stainless steel 1.4404 (AISI 316L) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez. Process connection 1/4" NPT-18 male thread	Admissible overpressure	≤ 12 bar
Long-term stability 0.25 % FS, according to IEC EN 60770-1	Burst pressure	≥ 12 bar
Power supply Operating voltage U ₈ 733 VDC Current consumption ≤ 23 mA Short-circuit/reverse polarity protection yes / yes Protection class IP67 Insulation class III Insulation voltage 750 VDC Outputs Output 1 Analog output Current Analog output Current output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS Accuracy LHR ±0.3 % FS (typical; max. ±0.5 % FS) Temperature behaviour Medium temperature -40+125 °C Temperature coefficient ± 0.2 % of full scale/10 K Environmental conditions Ambient temperature -50+85 °C Storage temperature -50+100 °C Vibration resistance 20 g. 152000 Hz, 1525 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) Material pressure transducer Ceramic Al₂O₃ Sealing material FPM spez.	Response time	< 2 ms, typ. 1 ms
Operating voltage U₀ Current consumption \$ 23 mA Short-circuit/reverse polarity protection Protection class IP67 Insulation class III Insulation voltage Outputs Output 1 Analog output current Analog output Current output Load \$ (supply voltage -7)/20 kΩ Resolution Accuracy LHR \$ ±0.3 % FS (typical; max. ±0.5 % FS) Temperature behaviour Medium temperature ### 420 of full scale/10 K ### Environmental conditions Ambient temperature -40+125 °C Temperature coefficient ### 2.2 % of full scale/10 K Environmental conditions Ambient temperature -50+100 °C Vibration resistance #### 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) Pressure connection material Stainless steel 1.4404 (AISI 316L) Material pressure transducer Ceramic Al₂O₃ Sealing material FPM spez.	Long-term stability	0.25 % FS, according to IEC EN 60770-1
Current consumption ≤ 23 mA Short-circuit/reverse polarity protection yes / yes Protection class IIP67 Insulation class III Insulation voltage 750 VDC Outputs Output Output 1 Analog output current Analog output Analog output current Current output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Power supply	
Short-circuit/reverse polarity protection Protection class III Insulation voltage 750 VDC Outputs Output 1 Output 1 Output function Analog output Current output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution -± 0.1 % FS Accuracy LHR ±0.3 % FS (typical; max. ±0.5 % FS) Temperature behaviour Medium temperature -40+125 °C Temperature coefficient ± 0.2 % of full scale/10 K Environmental conditions Ambient temperature -30+85 °C Storage temperature -30+85 °C Storage temperature -30+85 °C Storage temperature -30+100 °C Vibration 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) Material pressure transducer Ceramic Al₂O₃ Sealing material FPM spez.	Operating voltage U _B	733 VDC
Protection class IP67 Insulation class III Insulation voltage 750 VDC Outputs Output 1 Output 1 Analog output current Analog output current Analog output current Current output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Current consumption	≤ 23 mA
Insulation class III Insulation voltage 750 VDC Outputs Output 1 Analog output Output function Analog output current Analog output Current output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS Accuracy LHR ±0.3 % FS (typical; max. ±0.5 % FS) Temperature behaviour Medium temperature -40+125 °C Temperature coefficient ± 0.2 % of full scale/10 K Environmental conditions Ambient temperature -50+85 °C Storage temperature -50+100 °C Vibration resistance 20 g, 152000 Hz, 1525 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) Material pressure transducer Ceramic Al₂O₃ Sealing material FPM spez.	Short-circuit/reverse polarity protection	yes / yes
Insulation voltage 750 VDC Outputs Output 1 Output function Analog output current Analog output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Protection class	IP67
Output 1 Analog output Output function Analog output current Analog output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Insulation class	III
Output 1 Analog output Output function Analog output current Analog output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Insulation voltage	750 VDC
Output function Analog output Current output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Outputs	
Analog output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Output 1	Analog output
Current output 420 mA Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Output function	Analog output current
Load ≤ (supply voltage -7)/20 kΩ Resolution <± 0.1 % FS	Analog output	
Resolution	Current output	420 mA
Accuracy LHR ±0.3 % FS (typical; max. ±0.5 % FS) Temperature behaviour Medium temperature -40+125 °C Temperature coefficient ± 0.2 % of full scale/10 K Environmental conditions Ambient temperature -30+85 °C Storage temperature -50+100 °C Vibration resistance 20 g, 152000 Hz, 1525 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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Load	≤ (supply voltage -7)/20 kΩ
Temperature behaviour Medium temperature -40+125 °C Temperature coefficient ± 0.2 % of full scale/10 K Environmental conditions Ambient temperature -30+85 °C Storage temperature -50+100 °C Vibration resistance 20 g, 152000 Hz, 1525 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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Resolution	<± 0.1 % FS
Medium temperature -40+125 °C Temperature coefficient ± 0.2 % of full scale/10 K Environmental conditions -30+85 °C Ambient temperature -30+85 °C Storage temperature -50+100 °C Vibration resistance 20 g, 152000 Hz, 1525 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 Stainless-steel/Plastic, 1.4404 (AISI 316L)/polyarylamide 50 % GF UL 94 V-0 Pressure connection material Stainless steel 1.4404 (AISI 316L) Material pressure transducer Ceramic Al₂O₃ Sealing material FPM spez.	Accuracy LHR	±0.3 % FS (typical; max. ±0.5 % FS)
Temperature coefficient ± 0.2 % of full scale/10 K Environmental conditions Ambient temperature -30+85 °C Storage temperature -50+100 °C Vibration resistance 20 g, 152000 Hz, 1525 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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Temperature behaviour	
Environmental conditions Ambient temperature -30+85 °C Storage temperature -50+100 °C Vibration resistance 20 g, 152000 Hz, 1525 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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Medium temperature	-40+125 °C
Ambient temperature -30+85 °C Storage temperature -50+100 °C Vibration resistance 20 g, 152000 Hz, 1525 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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Temperature coefficient	± 0.2 % of full scale/10 K
Storage temperature -50+100 °C Vibration resistance 20 g, 152000 Hz, 1525 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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Environmental conditions	
Vibration resistance 20 g, 152000 Hz, 1525 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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Ambient temperature	-30+85 °C
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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Storage temperature	-50+100 °C
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) Material pressure transducer Ceramic Al ₂ O ₃ Sealing material FPM spez.	Vibration resistance	amplitude ± 15 mm, 1 octave/minute in all 3 directions, 50 continuous loads, acc. to
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) Material pressure transducer Ceramic Al₂O₃ Sealing material FPM spez.	Shock resistance	all 6 directions, free fall from 1 m onto
316L)/polyarylamide 50 % GF UL 94 V-0 Pressure connection material Stainless steel 1.4404 (AISI 316L) Material pressure transducer Ceramic Al₂O₃ Sealing material FPM spez.	Mechanical data	
Material pressure transducer Ceramic Al₂O₃ Sealing material FPM spez.	Housing material	
Sealing material FPM spez.	Pressure connection material	Stainless steel 1.4404 (AISI 316L)
	Material pressure transducer	Ceramic Al₂O₃
Process connection 1/4" NPT-18 male thread	Sealing material	FPM spez.
	Process connection	1/4" NPT-18 male thread



Technical data

Wrench size pressure connection / coupling nut	24
Electrical connection	Connector, M12 × 1
Max. tightening torque of housing nut	20 Nm
Reference conditions acc. to IEC 61298-1	
Temperature	15+25 °C
Atmospheric pressure	8601060 hPa abs.
Humidity	4575 % rel.
Auxiliary power	24 VDC
Tests/approvals	
Approvals	cULus
UL registration number	E302799
MTTF	1189 years acc. to SN 29500 (Ed. 99) 40 °C