

Pressure switch for safe measurement and monitoring of absolute and gauge pressures

Ceraphant T PTC31, PTP31

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- 3 button on-board programming
- or setup via ReadWin® 2000 configuration software
- High visibility digital display
- High reproducibility and long-term stability
- Stainless steel housing

Application

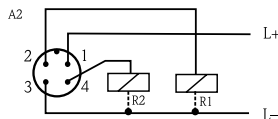
Pressure switch for monitoring absolute and gauge pressures in gases, vapors and liquids with ceramic (PTC31) or metallic (PTP31) sensor diaphragm of process temperatures. Finely graduated measuring ranges from vacuum up to 6000 psi (400 bar).

Measurement principle

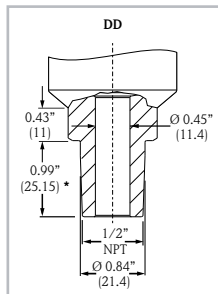
The process pressure acts on the Ceraphire® ceramic sensor diaphragm (PTC31) and the pressure-dependent change in capacitance of the ceramic sensor is measured. A process pressure acts on the metallic diaphragm (PTP31) and is transmitted to a resistance bridge via a fluid, where a change in the output voltage is proportional to the pressure. A microprocessor evaluates the signal and switches the output or outputs the corresponding measured value.

Electrical connection

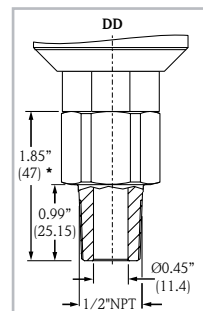
DC voltage version with M12x1.5 connector
A2: 2 x PNP switch output



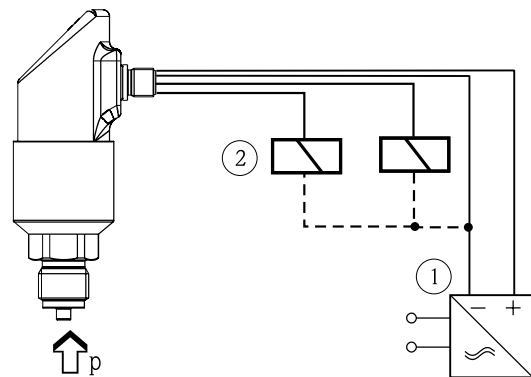
Process connections PTC31



Process connections PTP31



Measuring device



- 2 x PNP switch output
① Power supply system
② Load (e. g. programmable logic controller, process control system)

Ceraphant T PTC31 and PTP31

Technical data

Output

- Output signal 2 x PNP
- Function min., max. window
- Voltage drop PNP ≤ 2 V
- Overload protection automatic testing of switching current
- Input SPS $R_i \leq 2$ k Ω , $I_i \geq 10$ mA

Power supply U_b

- Supply voltage 12 to 30 VDC
- Current consumption without load < 60 mA, reverse polarity protection

Performance characteristics

- Reference conditions according to DIN IEC 60770/61003
- Measured error < 0.5 %
- Long-term drift ≤ 0.15 % per year
- Sensor response time ≤ 20 ms
- Analog output non-linearity: ≤ 0.2 % (limit point method)
non-conformity: non-linearity + hysteresis + non-repeatability: ≤ 0.5 % (limit point method)

Operating conditions

- Medium temperature -40 to $+212$ °F
- Ambient temperature -40 to $+185$ °F
- Storage temperature -40 to $+212$ °F
- Climate class 4K4K to DIN EN 60721-3-4
- Degree of protection with M12x1.5 connector, IP 60
- Vibration resistance 20 g to DIN 68-2-6 (10-2000 Hz)
- EMC interference emission as per EN 61326 class B electrical equipment, interference immunity as per EN 61326 appendix A (industrial use)

Materials

- Process connection ANSI $\frac{1}{2}$ " MNPT, SS 316L front connection (PTP31)
- Housing AISI 316L, with electronically polished surface $R_a \leq 0.8$ μ m
- M12 connector interior 316L

Stock versions shown. Many other models, versions and options are available with longer lead times. Please contact Endress+Hauser for more information.

Product	Version	Order no.	Price/piece in \$			we hereby order:	total price:
			1 to 5	6 to 15	16 to 35		
PTC31	Ceramic sensor with valve plug NPT $\frac{1}{2}$, IP60	PTC31-A3A11P3DA1A	\$328.00	\$296.00	\$267.00	pcs	\$
PTP31	Metallic sensor with valve plug NPT $\frac{1}{2}$, IP60	PTP31-A3A13P3DA1A	\$318.00	\$287.00	\$258.00	pcs	\$

Accessories	Configuration kit, USB connection	TXU10-AA	\$158.00	pcs	\$
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Net excluding cost of shipping and taxes.

Acceptance per our Standard Terms and Conditions (find at www.e-direct.us).

Total price:

FOB Greenwood, IN; shipped pre-paid; shipping charges and applicable taxes added to invoice.

\$ _____

E-direct catalog (free)

Shipping method

- Ground Priority One Day Priority Two Day

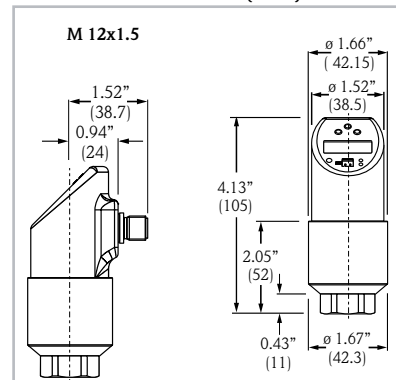
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E-direct
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Greenwood, IN 46143

(For customers in the USA only)

Online Shop www.e-direct.us
Order: by phone 888-EH DIRECT (343-4732)
by fax 800-321-7754
For special requests, e-mail us: e-direct@us.endress.com

Dimensions in inches (mm)



Surfaces in contact with process

- Process connection AISI 316L
- Sensor diaphragm PTC31: Ceramic (99.9 % Al_2O_3)
PTP31: AISI 316L
- Filling fluid PTC31: dry ceramic measuring cell
PTP31: Mineral oil
- Seals FKM Viton, except 6000 psi sensor – no seal, welded

Operation

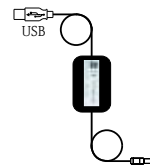
- Operating elements 3 buttons or PC and ReadWin®2000 software (free download from www.Readwin2000.com)

Approvals

- Certificates SIL 2 to IEC 61508/61511 (only PTC/PTP with analog output)

Accessories

- Configuration kit Configuration kit for PC programmable transmitters. Setup program and interface cable for PCs with USB port. Adapter for transmitters with 4-pin post connector. Order code: TXU10-AA



ReadWin® 2000 is supplied with the configuration kit or it can be downloaded free of charge directly from the internet at the following address: www.readwin2000.com

Endress+Hauser

People for Process Automation