



Ultra-compact pressure transmitter / pressure switch for general industrial applications

Technical information TI01.19

In brief



Application

- Machinery and plant engineering
- Air-conditioning and refrigeration plant engineering
- Hydraulic and pneumatic systems
- Process industry
- Environmental technology
- Facility and building automation

Main features

- Measuring ranges from 10 bar up to 600 bar
- Metallic internal diaphragm
- Process temperature range -40°C to $+125^{\circ}\text{C}/+200^{\circ}\text{C}$
- Fully welded robust steel enclosure
- Ultra-compact construction
- High protection class IP69K/IP67
- Highest accuracy to $\leq 0,15\%$
- Electronic 4...20mA HART®
- Certification ATEX / IECEx: Ex ia IIC Ga / Ex ia IIIC Da



Description

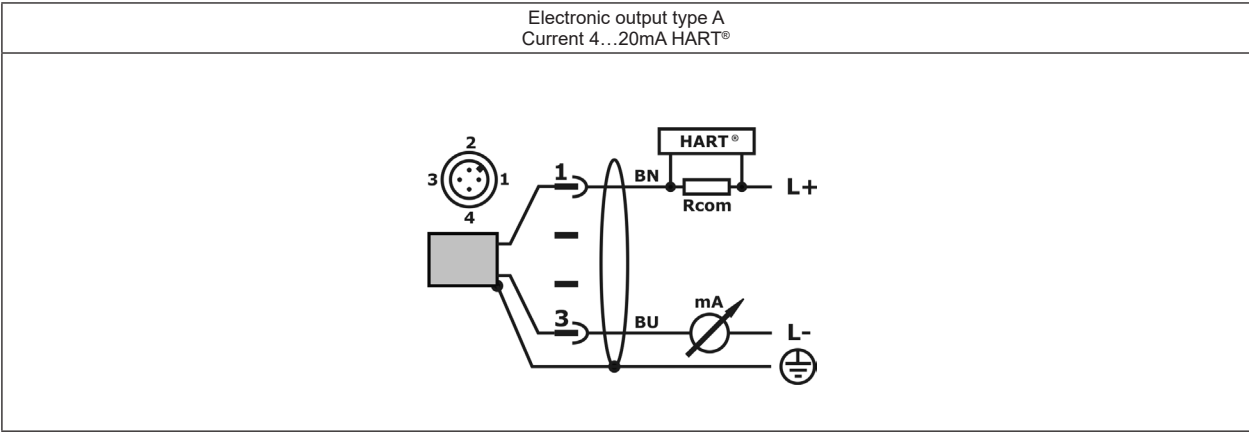
The device is an electronic pressure transmitter / pressure switch for monitoring, control and continuous measurement of pressures. The pressure transmitter is suitable for demanding measuring requirements, especially at constricted installation situations and high temperature stress. Due to its high accuracy and the digital adjustability by HART® the device can be suited to a wide variety of applications. The robust design and the high-quality workmanship turns the device into a very high quality product, which even the most adverse environmental conditions cannot affect, whether the lowest temperatures when used outdoors, extreme shock and vibration stress or aggressive media. A captive laser marking of the type label ensures the identifiability

throughout the entire lifetime of the device. Obviously is the optional marking of a measurement point designation resp. TAG, a customer label or of a neutral type label, of course also per laser marking. A factory calibration with calibration certificate and a customer specific configuration resp. preset is also optionally available like factory certifications for drink water suitability. Customer specific special versions can be realized on request, e.g. special designs for the process connection or other process materials.

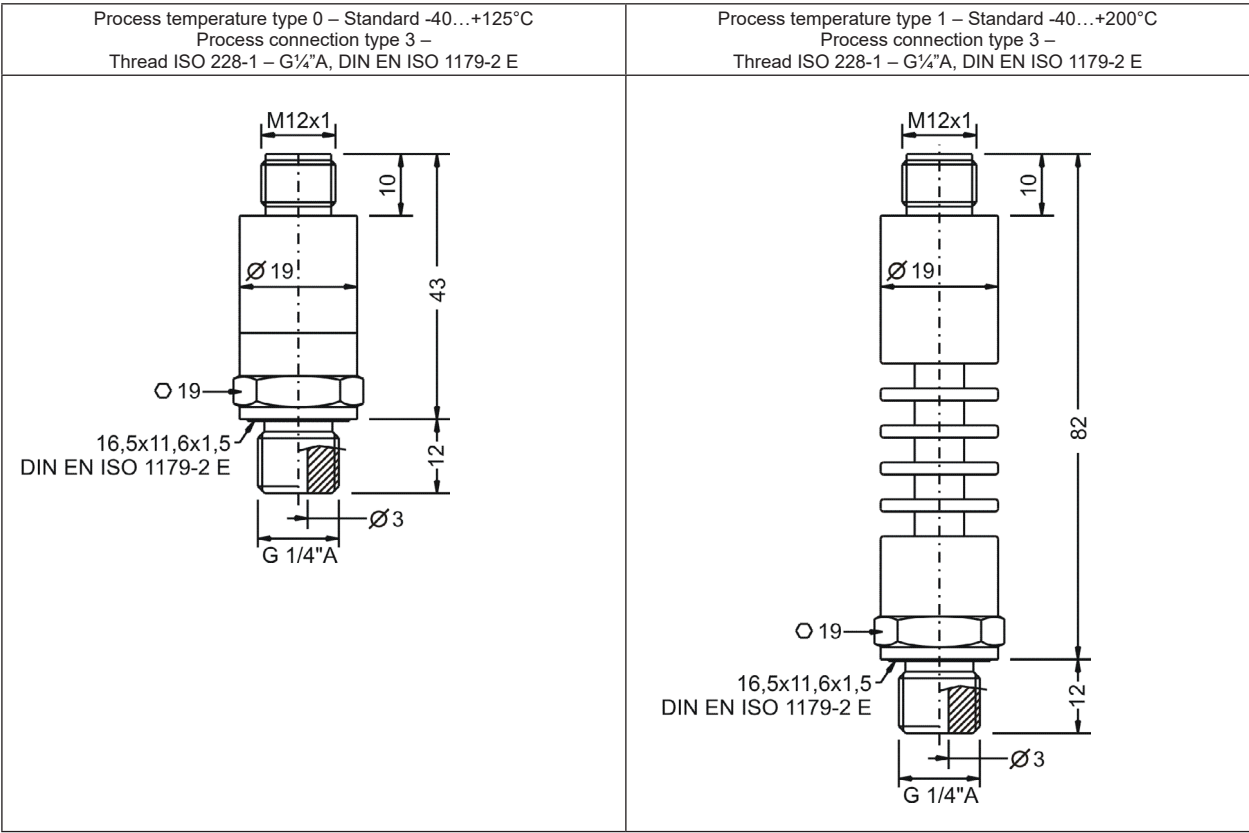
Technical Data

Measuring range										
Nom. pressure PN rel.	[bar]	0...10	0...40	0...100	0...600	-	-	-	-	-
Under-/Overload press.	[bar]	-1/20	-1/80	-1/2000	-1/1200	-	-	-	-	-
Burst pressure	[bar]	300	800	2000	3000	-	-	-	-	-
Output type A – Current 4...20mA HART®										
Analogue output 4...20mA		3,9...20,5mA / ≥ 3,8mA / ≤ 22mA / dI ≤ 1µA								
Permitted load		RL ≤ (Us - 9V) / 22mA								
Time behavior		T90 ≤ 8ms (t _g = 0s) / ton ≤ 0,2s (t _g = 0s)								
Interface		HART®-compliant (7.0) / 1200 Bit/s								
Communication resistor		≥ 250Ω, external								
Auxiliary power										
Supply voltage Us polarity protected Residual ripple voltage Supply current		Type A – 4...20mA HART®: 9...35VDC / ≤ 2Vpp / ≤ 22mA Type A – 4...20mA HART® Ex: 9...30VDC / ≤ 2Vpp / ≤ 22mA								
Measuring accuracy										
Reference conditions		EN/IEC 60770-1: Characteristic deviation – Limit value adjustment 15..25°C / 860..1060kPa / 45..75%r.F. / ton240s / 24VDC±0,1V /vertical, sensor downside								
		Characteristic deviation = Nonlinearity + Hysteresis + Reproducibility FSO = Full Scale Output = Nominal measuring range Tk = Temperature coefficient TD (Turn-Down) = FSO / adjusted measuring range Higher deviations possible for special adjustment								
Resolution measuring input		FSO ≥ 16 Bit								
Characteristic deviation		≤ ±0,15%/±0,5%FSO (TD=1)								
Hysteresis		≤ ±0,1%FSO								
Reproducibility		≤ ±0,05%FSO								
Influence of auxiliary power		≤ ±0,002%FSO/V								
Long term drift		≤ ±0,2%FSO/year (TD=1)								
Temperature deviation		Tk Zero (TD=1) ≤ ±0,015%FSO/K								
		Tk Span (TD=1) ≤ ±0,015%FSO/K								
Mounting position		negligible								
Process conditions										
Process temperature		Standard: -40°C...+125°C / ATEX/IECEx: see certificate Extended: -40°C...+200°C / ATEX/IECEx: see certificate Gasket FPM: max. -25°C...+200°C								
Pressure cycles		≥ 100 Mio. (1,2xPN)								
Environmental conditions										
Environmental temperature		-40°C...+125°C ATEX/IECEx: see certificate Process temperature type 1 – Extended -40°C...+200°C: -40°C...+125°C / Process temperature -40°C...+150°C -40°C...+100°C / Process temperature +150°C...+175°C -40°C...+85°C / Process temperature +175°C...+200°C ATEX/IECEx: see certificate								
Protection level		IP69K/IP67 (EN/IEC 60529)								
Climatic classification		4K4H (EN/IEC 60721-3-4)								
Shock classification		500g [1ms] (EN/IEC 60068-2-27)								
Vibration classification		20g [10...2000 Hz] (EN/IEC 60068-2-6)								
EM compatibility		Operation device class B / Industrial range (EN/IEC 61326)								
Insulation voltage		500Vac								
Ignition protection type		ATEX/IECEx: II 1 G Ex ia IIC T1...T6 Ga ATEX/IECEx: II 1 D Ex ia IIIC T80°C...T195°C Da ATEX: II 3 G Ex ec IIC T1...T6 Gc								
MTTF		463 years								
Tightening torque		≤ 50Nm								
Weight		0,05kg / 0,07kg								
Materials										
Process wetted		Process temperature type 0 – Standard -40°C...+125°C: Steel 1.4548/630, steel 1.4404/316L, FPM								
		Process temperature type 1 – Extended -40°C...+200°C: Steel 2.4668/Inconel alloy 718, steel 1.4404/316L, FPM								
Not process wetted		CrNi-steel, PUR, Acrylic copolymer, FPM								

Electrical connection



Dimensions (mm)



Order code

Type	
PK4SStandard	
H	Measuring system – material diaphragm (process wetted) / sensor type CrNi-steel / strain gauge
S	Approval Standard
X	ATEX II 1 G / IECEx Ex ia IIC Ga resp. ATEX II 1 D / IECEx Ex ia IIIC Da
3	Process connection Thread ISO 228-1 – G¾"A, DIN EN ISO 1179-2 E
Y	others
1	Material process gaskets (process wetted) FPM – fluorelastomere (e.g. Viton®)
Y	others
V	Material process connection (process wetted) CrNi-steel
C	Material terminal enclosure CrNi-steel
10	Measuring range 0...10 bar
13	0...40 bar
19	0...100 bar
24	0...600 bar
YY	Special measuring range
A	Electronic – output Current 4...20mA, HART®-compliant, 2-wire
S	Electronic – function Standard
0	Process temperature Standard –40°C...+25°C
1	Extended –40°C...+200°C, temperature decoupler
R	Pressure type Gauge pressure
4	Measuring system – accuracy 0,5%
8	Xcellence – 0,15%, linearization protocol
S	Electrical connection Plug M12x1
-ML	Additional options Measurement point designation / TAG – Laser marking
-KL	Customer label on device – Laser marking
-TN	Type label neutral
-WT	Factory certification – drink water suitability
-KF	Configuration / Preset
-WK	Factory calibration – calibration certificate

Precont® PK4S

H

V

C

A

S

R

S

PRC Technologies Corp., Ltd. ลาดพร้าว 101 กรุงเทพฯ 10240

โทรศัพท์ : 02 530 1714, 02 932 1711 มือถือ : 086 360 8600

อีเมล : contact@prctech.net LINE ID1 : prctec-info, LINE ID2 : prcsense

ACS-CONTROL-SYSTEM GmbH
Lauterbachstr. 57
D- 84307 Eggenfelden

Tel.: +49 (0) 8721/ 9668-0
Fax: +49 (0) 8721/ 9668-30

ACS-CONTROL-SYSTEM
knowhow with system



Your partner for measuring technology and automation

info@acs-controlsystem.de
www.acs-controlsystem.de