PRIGNITZ MIKROSYSTEMTECHNIK

CIT

Digital Industry Transmitter

Description:

The wide application field of pressure transducers is guaranteed by the high accuracy and the rugged design.

The stainless steel membrane is completely vacuum-sealed, extremely burst resistant and applicable for all standard media for hydraulics, pneumatics, environmental engineering, process technology, semiconductor technology and automotive engineering. Thus the use for standard applications of mobile hydraulics and other application areas is covered.

Due to the manufacturing process all pressure transducers are being individually pressure- and temperature-tested.
The production occurs due to the requirements of DIN EN ISO 9001:2008.

Special Features:

- **Accuracy**
  - o < 0.15% BFSL CIT
  - o < 0.25% BFSL CIT-F
- **Robust construction**
  - o Wetted parts of stainless steel
  - o Protection category IP 65
- **Programmable by PC programming kit or service tool**
  - o Zero point (offset)
  - o Range able 4:1
  - o Zoom and SPAN
  - o Characteristics / Output options (inverse, square rooted, special forms)
- **Straightforward zero correction by using a magnet**
- **0utput signals**
  - o 4 ... 20 mA
  - o 0 ... 10 V
  - o 0 ... 5V
  - o Digital
- **Process connections**
  - o Standard to chart
  - o Others on request
  - o **SIT-F flush diaphragm**
    - ○ G½“
    - ○ G1¾“
    - ○ G1“

Construction:

The compensation and adjustment is carried out electronically. Thus the pressure transmitters have a very low total error and a very good long-term stability. The measuring cell is characterised by its high long-term resistance and long-term stability.
With the precision of modern electronics, the measured data can be captured accurately. Even the programming of the pressure transducers by the user can be realised on a service tool or PC programming kit. The graduation of the measuring range and the zero point can be set up through the digital interface. Furthermore sensor data can be readout from the device. By using permanent magnets the adjustment of the zero point can easily and securely be done at any time.

Applications:

- **Pneumatics / Hydraulics**
- **Mechanical Engineering**
- **Vehicle - Technology**
- **Mobile - Hydraulics**
- **Water treatment**
- **Food- and Beverage industry**
- **General industrial applications**
- **Pharmaceutical Industry**

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Technical Data	**Typ CIT**
Standard pressure ranges *) (bar)	-1 0,1 0,3 0,6 1 1,6 2,5 4 6 10 16 25 40 60 100 160 250 400 600 1000 1600 2000
Overload (bar) *)	Max. 1.5 times / 1.2 times - depending on pressure range
Burst pressure (bar) *)	2 times / 1.5 times - depending on pressure range
Kind of pressure	Vacuum, gauge pressure, absolute pressure on request
Wetted parts	Stainless steel
Weight (g)	Approx.. 200 g
Supply voltage (VDC)	10...30 V at 4..20 mA / 14…30 V at 0…10V
Output signals and max. load	4…20 mA, 2 wire $R_A \leq (U_B\text{-}10V) / 20mA$
	0…5 V, 3 wire $R_A > 5$ kΩ
	0…10V, 3 wire $R_A > 10$ kΩ
	Digital optional
	Others on request
Adjustability of zero	Straightforward zero correction by using a magnet or via interface and PC programming kit
Adjustability of span	1:4 with pressure ranges (FS) via interface and software
Adjustability time constant	via interface and software
Sample rate	>250 Hz
Response time (10 ... 90 %)	≤ 10 ms
Accuracy **)	% FS ≤ 0,25 (optional 0,15) of full span (Including non-linearity, zero point and full scale error, hysteresis, non-linearity and repeatability) Compensation measurement and adjustment for vertical mounting position.
Non-linearity ***)	% FS ≤ 0,05
Repeatability	% FS ≤ 0,1
Long-term stability	% FS ≤ 0,1 1-year stability at reference conditions
Permissible temperatures	
Media temperature	-20....+ 80 (120) ° C
Ambient temperature	-20....+ 80 ° C
Storage temperature	-20....+ 80 ° C
Compensated temp. range	-20…+ 80 ° C
Temperature coefficient zero	% FS ≤ 0,1 / 10K
Temperature coefficient FS	% FS ≤ 0,1 / 10K
Coefficient FS % FS ≤ 0,1 / 10K CE-conformity	
Pressure equipment directive	97/23/EG
EMC directive	2004/1 08 EG
Shock resistance	g 100 to IEC 60068-2-27 mechanical
Vibration resistance	g 20 to IEC 60068-2-6 resonance
Wiring protection	
Over voltage	32 VDC
Short-circuit strength	Out+ / U_B- (for 1s)
Reverse polarity	U_B+ / U_{B-}

***) Others on request**
****) Special custom design with optional better accuracy on request**
*****) integral linearity error (FS = Full Scale, BFSL = Best Fit Straight Line)**

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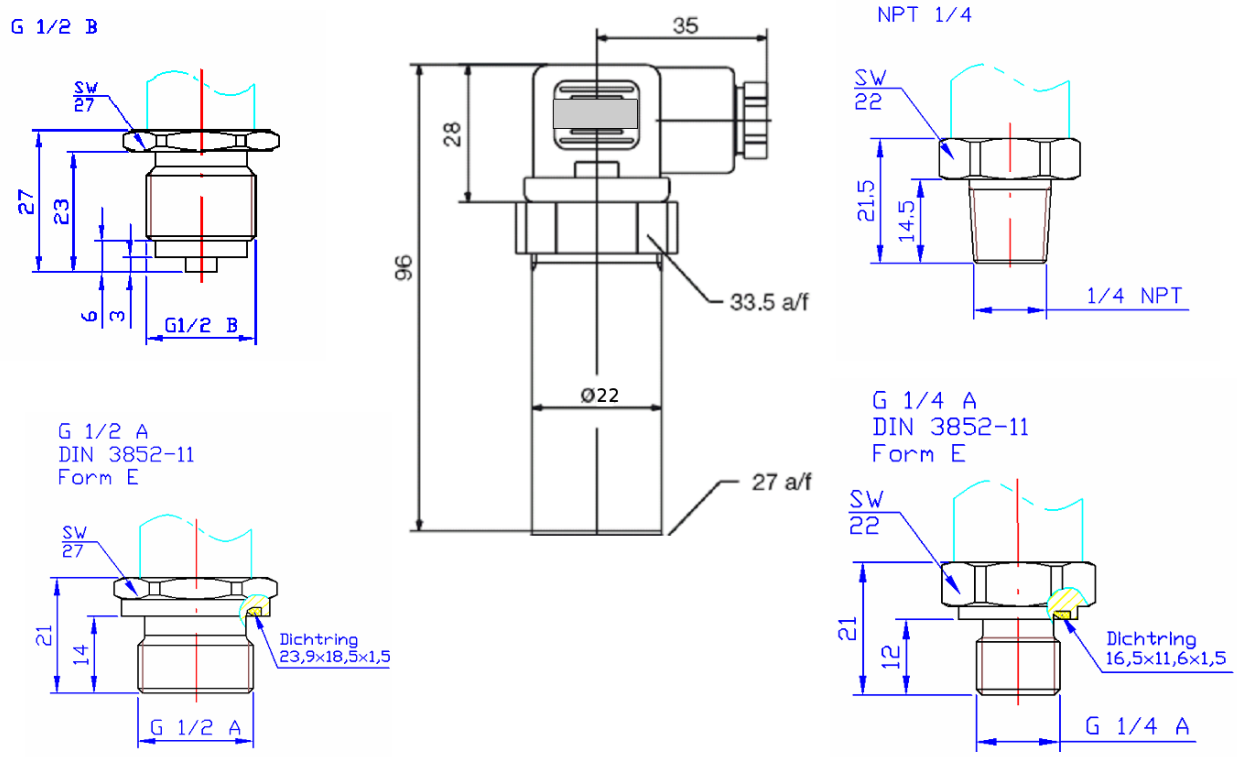
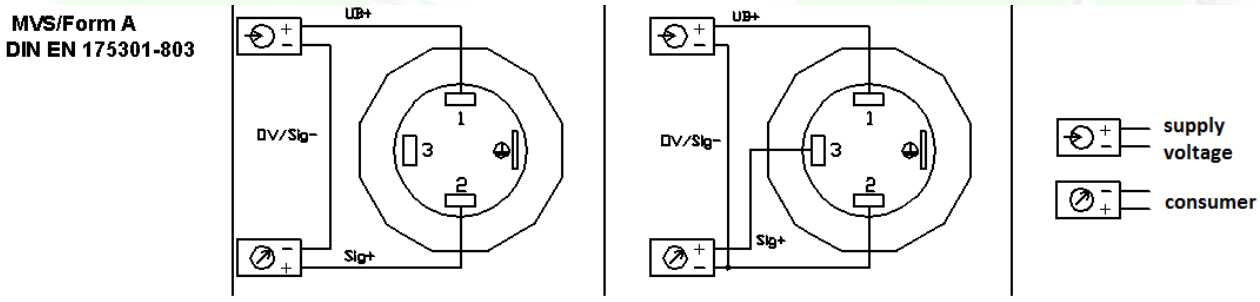
Figure similar depending on model



Connection diagram

2- wire current (4…20mA)*

3- wire voltage (0…10V ,0…5V)*



M12x1 (Binder series S763)

2 wire : 1 + , 2; 3 wire : 1+, 2 Gnd , 3+ out/ signal*

Cable : 2 wire : red + , black; 3 wire : red + , black -, white out,*

***) Others on request**

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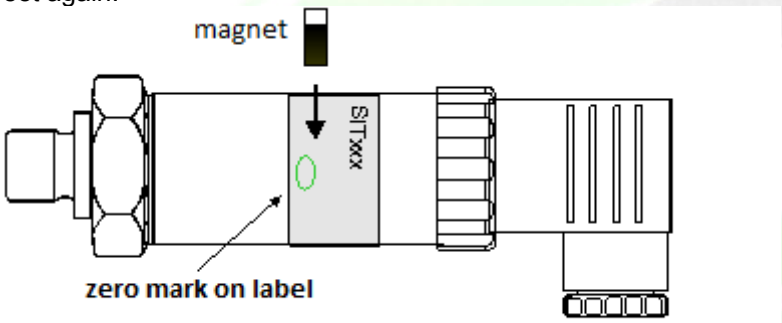
Zero correction

The zero can be set easily with a magnet within ± 10 % of the nominal range.

To correct the zero point, hold a permanent magnet– a pin board magnet, for example – at the position marked on the pressure transmitter (i.e. a letter in a circle) for ½ to 2 ½ minutes after the power has been switched on. To correct the zero, atmospheric pressure is applied. Offsets for previously set values for initial and ultimate pressures will be corrected automatically by the device. A magnetic field applied outside of this time period has no effect on the setting. The power must be switched off and on before the zero point can be set again.



Parameterization

Parameterization of measuring range (1:4), zoom, pan and adjustment of characteristic diagram are possible with service tool or PC adapter and software. Programmable devices are only available with Electrical connection by Binder M12 (Binder series S763) or by cable.
The service tool or the PCF software are available accessory.

Service

The sensors are free of maintenance.

Note

We compiled this operating instruction carefully. Nevertheless, it was not possible to take all possibilities of application into account. If this data sheet should lack the solution of your special task, please don't hesitate to contact us.

Safety information

During installation, putting into service and operation of the pressure sensors, it is necessary to observe the relevant safety regulations that are in force in the country of the user (as for example, DIN VDE 0100).

Errors excepted; subject to alterations in the sense of technical improvement.