

- Pressure Sensors Industrial Heavy Duty EEx ia IIC T4 - T6

according to ATEX 100a

- with internal diaphragm
- with front flush diaphragm


for gauge and absolute pressure

accuracy 0,25% and 0,5 %

standard output: 4...20 mA; 2-wire system



Description

-pressure sensors Industrial Heavy Duty are top of the range products in Ex pressure gauge technology.

The intrinsically safe Ex-pressure sensors are designed for zone 1 and have special type approval for use in potentially explosive atmospheres and a CENELEC certificate according to the new ATEX 100a. The new regulation will be valid after 30.06.2003.

The measuring ranges, graded in accordance with EN, range from 100 mbar to the maximum pressure range of 4000 bar. The case and wetted parts comprise stainless steel and are thus resistant to chemically aggressive media. The pressure connection and measuring element are welded together, making the measuring system particularly resistant to mechanical shock or vibration.

The pressure connection is fitted with a G ½ male thread. Several electrical connections can be obtained to pick up the electrical output signal.

The front flush pressure diaphragm avoids zones, in which medium could crystallize or residues could form, thus ensuring trouble-free pressure measurement and hygienic cleaning of the pressure sensors.

The Ex-pressure sensors Industrial Heavy Duty meet the electronic magnetic compatibility (EMC) requirements to EN 61326.

Features

- intrinsically safe, zone 1
- option: build to zone 0
- for pastous or crystallizing media
- high longterm stability
- finely graded selection of nominal pressure ranges according to EN
- corrosion resistant stainless steel design
- good repeatability
- high overload protection
- for dynamic and static measurements
- simple installation
- CENELEC-certificate acc. to ATEX 100a

Measuring ranges

Gauge pressure

Negative -1...0 bar to -0.1...0 bar

Positive 0...0.1 bar to 0...4000 bar

Absolute pressure 0...0.25 bar to 0 ... 16 bar

Applications

Chemical and pharmaceutical industry,
food industry and environmental technology,
Process engineering.

Technical data

Model	E110	E111	E112	E113	E120	E121	E122	E123
Type	with internal diaphragm				with front flush diaphragm			
Pressure type	negative / positive gauge pressure		absolute pressure		negative / positive gauge pressure		absolute pressure	
Output signal	4...20 mA - 2-wire system							
Accuracy % of F.S. 1)	0.5	0.25	0.5	0.25	0.5	0.25	0.5	0.25
Measuring ranges acc. to EN	0 ... 0.1 bar 2) to 0 ... 4000 bar		0 ... 0.25 bar to 0 ... 16 bar		0 ... 0.1 bar 2) to 0 ... 600 bar		0 ... 0.25 bar to 0 ... 16 bar	
Repeatability	≤ ± 0.05 % of F.S.							
Stability (annual)	≤ ± 0.2 % of F.S. in rated conditions							
Case	stainless steel 1.4571							
Process connection 3)	G ½ B (option: G ¼ B, ½ NPT, ¾ NPT)				≤ 1.6 bar G 1 B; ≥ 2.5 bar G ½ B			
Wetted parts	Stainless steel 1.4571 and 1.4542				stainless steel 1.4571 O-ring NBR (option: Viton, EPDM)			
Overload limit	< 16 bar 3.5-fold; < 600 bar 2-fold; > 600 bar 1.5-fold; vacuum proof							
Electr. connection and protection type acc. to EN 60 529 / IEC529	plug acc. to DIN 43 650 with junction box (PG 9), IP 65 option: plug acc. to DIN 43 650 with junction box (PG13.5), IP 65 for ship approval round connector M12x1 (4-pin), IP 67 snap cap (PG 11), IP 67 MIL-plug (6-pin), IP 7 round connector M 16x0.75 (5-pin), IP 67 cable outlet IP 67 with 1.5 m cable with inner ventilation cable outlet IP 68 with 1.5 m cable with inner ventilation (zero / span adjustable) cable outlet IP 68 with 1.5 m cable with inner ventilation (zero / span not adjustable)							
Power supply	10 ... 30 VDC (snap cap: 11...30 VDC)							
Power consumption	signal current							
Load	$R_L[\Omega] \leq (U_L[V]-10V)/0,02A - (0,14[\Omega] \times \text{cable length in [m]})$							
Temperature comp. Range	0...80 °C.							
Temperature influence 4)	≤ 0.2 % /10 K on zero and span							
Adjustability	Zero and span up to ± 10%							
Response time	≤ 1 ms (within 10 % to 90 % of. F.S.)							
Emission 5)	according to EN 61326							
Interference 5)	according to EN 61326							
HF immunity	10 V/m (option: 30 V/m)							
Burst	4 kV							
Electrical protection types	reverse polarity protection							
⚡ Explosion proof protection type max. values: - power supply - short circuit current - power restriction 6) - media temperature - ambient temperature - storage temperature - internal capacity - internal inductivity	EEx ia IIC T4 DMT <30 VDC 100 mA 1 W -20 [-50] ... 105 °C -20 [-50] ... 105 °C -60 ... 105 °C ≤ 22 nF ≤ 100 µH		EEx ia IIC T5 -20 [-50] ... 80 °C -20 [-50] ... 80 °C		EEx ia IIC T6 -20 [-50] ... 60 °C -20 [-50] ... 60 °C			
Temperaturbereiche - storage - media - ambient	-60 ... 105 °C -30 ... 100 °C (option: -50...105 °C) -30 ... 100 °C (option: -50...105 °C)							
Weight	approx. 0.2 kg							

¹⁾ Terminal point adjustment according to DIN 16 086, including linearity and hysteresis

of F.S. = of full scale value

²⁾ Accuracy 0.25% only for ranges ≥ 0 ... 0.25 bar

³⁾ From 0...2500 bar M16x1.5 female for attachment to zone 0 connection pressure connection acc. to 4.5 EN 50284

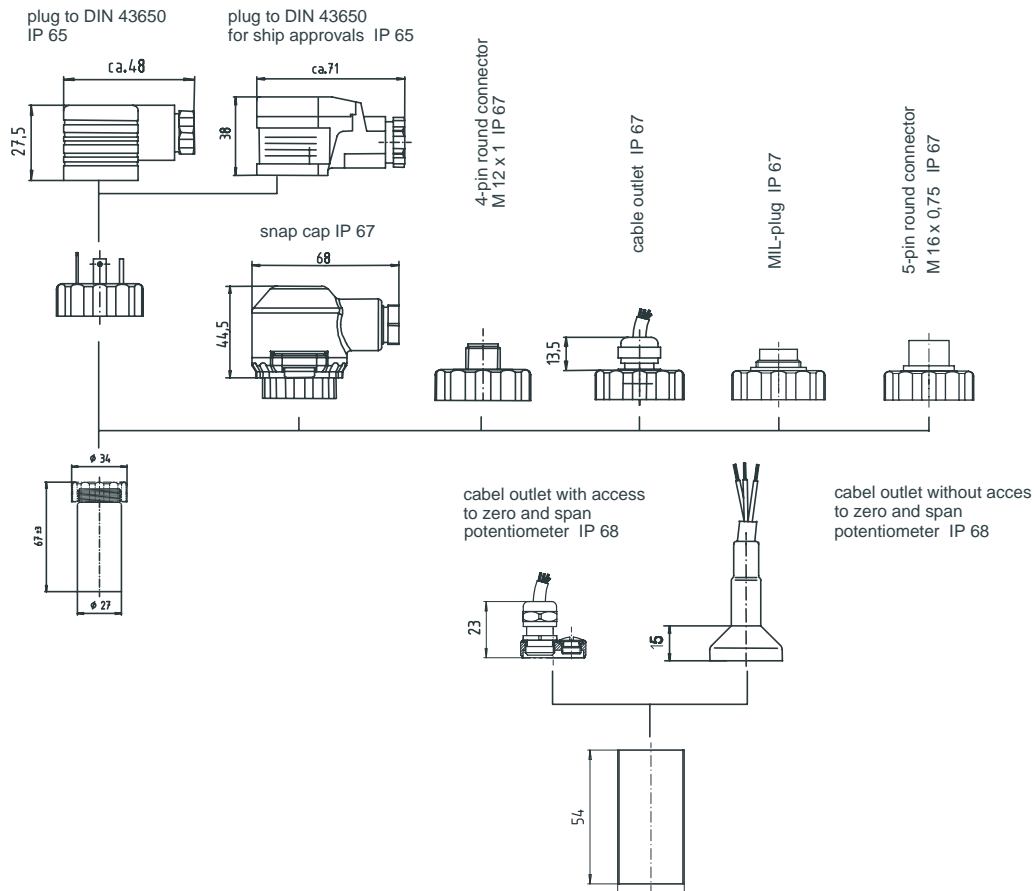
⁴⁾ ≤ 0.4 % /10 K; for ranges 0...0.1 and 0...0.16 bar

⁵⁾ Declaration of conformity on request

⁶⁾ Power limitation for supply transformers

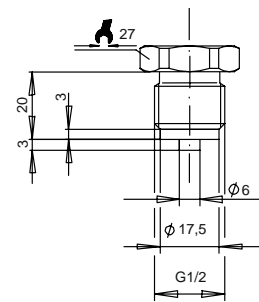
Dimensions (mm)

Case



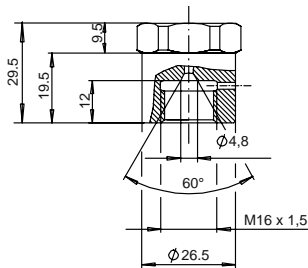
Pressure connection

- internal diaphragm

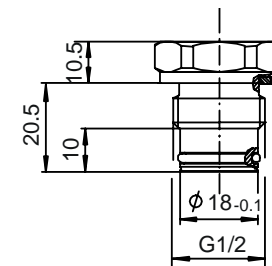


A-006

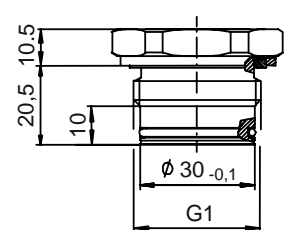
- front flush diaphragm



A-003



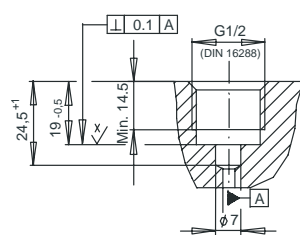
A-004



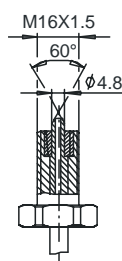
A-005

Screw-in aperture

- internal diaphragm



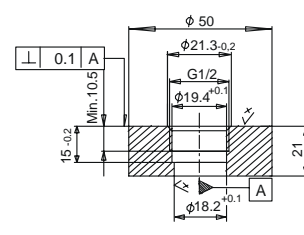
S-001



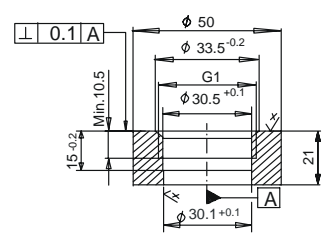
S-008

Weld-on adapter

- front flush diaphragm



S-003

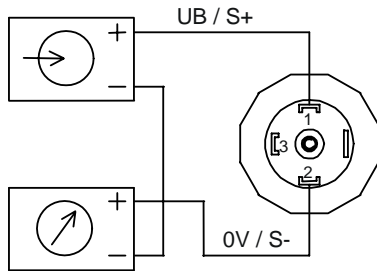


S-004

Electrical connection

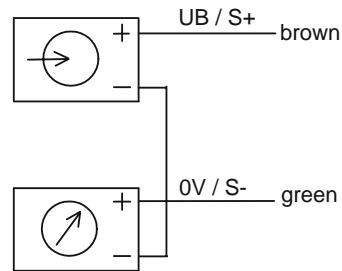
Two-wire system

plug to DIN 43 650



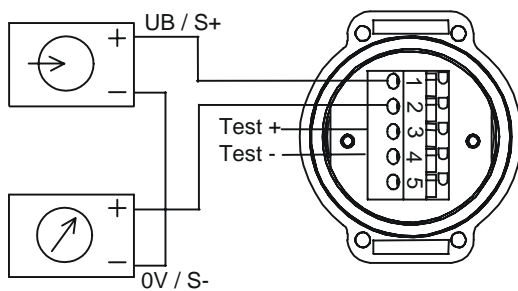
E-001

cable outlet



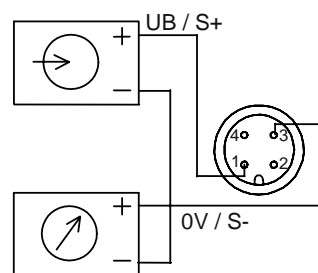
E-016

snap Cap



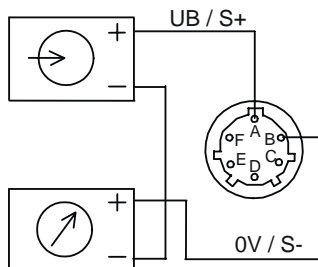
E-054

4-pin round connector M12 x 1



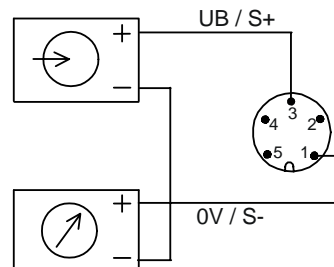
E-033

MIL-plug PT 02 E-10-6P



E-011

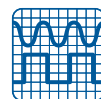
5-pin round connector M16 x 0.75



E-035

Order details:

1. Model
2. Measuring range
3. Options
4. Ex-Zone



INSTRUTEK®

Elveveien 28, 3262 Larvik
Tlf. 33 16 57 00 - Faks 33 16 57 01
post@instrutek.no - www.instrutek.no