



Main benefits

- Fully autoclavable pressure sensor for common sterilization processes
- High temperature resistance for SIP and CIP processes
- Surface roughness of process connection $\leq 0.8 \text{ Ra}$ for highest hygienic requirements
- Fully welded and compact design for washdowns without residuals
- Excellent active temperature compensation for increased process stability
- Available with optional electro-polished process connection for improved degree of purity
- External programming of zero point and span with FlexPro-grammer 9701

Applications

- Health care
- Biotechnology

Technical specifications

Measuring principle	Piezoresistive silicon chip
Measuring ranges	-1 ... 0 bar up to 0 ... 40 bar
Type of pressure	Relative / Absolute
Accuracy (20 °C)	$\leq \pm 0.25\% \text{ FS}$ (includes linearity, hysteresis, repeatability, error of span and zero point according limit point adjustment)
Turn down	5:1
Performance after Turn down	[Turn-Down] * [Accuracy] FS
Zero thermal drift	$\leq \pm 0.03\% \text{ FS/10 K}$
Span thermal drift	$\leq \pm 0.03\% \text{ FS/10 K}$
Long term stability	$\leq \pm 0.1\% \text{ FS / Year}$
Response time (10 ... 90%)	$\leq 5 \text{ ms}$
Process connections	See page 3

Autoclavability

Sterilisation conditions	Complete sensor with attached protective cover
Process duration	$\leq 30 \text{ min}$
Sterilisation temperature	$\leq 140 \text{ °C}$
Ambient pressure during sterilisation process	$\leq 3500 \text{ mbar}$

Environment

Temperature	
Storage	-10 ... +85°C
Compensated range	-10 ... +85°C
Medium (without cooling neck)	-10 ... +125°C
Medium (with cooling neck)	-10 ... +200°C
Ambient	-10 ... +85°C
SIP/CIP compatibility	Medium temperature up to 150 °C (< 60 minutes) without cooling neck Medium temperature up to 200 °C (permanent) with cooling neck
Protection rating	IP67 (EN 60529)
Vibration IEC60068-2-6	1.5 mm p-p (10 – 57 Hz), 10 g (58 Hz – 2 KHz) 10 cycles within 2.5 h per axis
Shock IEC60068-2-27	50 g/11 ms 100 g/6 ms 10 x Imp. per Axis and direction
Bump IEC60068-2-27	100 g/2 ms 4000 x Imp. per Axis and direction
Random IEC60068-2-64	0.1 g ² /Hz (20 Hz – 1 KHz) 30 min per axis (>10 g RMS)

Electrical specification

Output signal /	4 ... 20 mA / 8 ... 30 VDC
Power supply	0...10 V / 13 ... 30 VDC
Load impedance	
Current output	$R_D = (U_{\text{supply}} - 8 \text{ V}) / 20 \text{ mA}$
Voltage output	> 5 KΩ
Insulation resistance	>100 MΩ at 500 VDC
Electrical connections	See page 3

Material

Process connection	SS 1.4435 AISI 316L
Housing	SS 1.4404 AISI 316L
Diaphragm	SS 1.4435 AISI 316L
Sealing	EPDM gaskets are conform to 3-A, Sanitary Standard 18-03 Class II

Surface roughness (in contact with medium)

Process connection	$R_a \leq 0.4 \text{ } \mu\text{m}$
Weld joint	$R_a \leq 0.8 \text{ } \mu\text{m}$
Diaphragm	$R_a \leq 0.4 \text{ } \mu\text{m}$

Approvals

CE conformity	EMC directive 2004/108/CE in accordance with EN 61000-6-2 & EN 61000-6-3
Hygienic	3-A 74-06 EHEDG, EL Class I

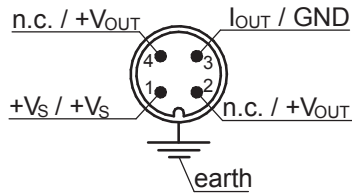
Measuring ranges and overpressure safety

Pressure in bar					
Pressure range	0 ... 0.4	0 ... 1.6	0 ... 6	0 ... 25	0 ... 40
	0 ... 0.6	0 ... 2	0 ... 10	-1 ... 24	-1 ... 39
	0 ... 1	0 ... 2.5	-1 ... 9		
	-1 ... 0	-1 ... 1.5	0 ... 16		
	-1 ... 0.6	0 ... 4	-1 ... 15		
		-1 ... 3	0 ... 20		
		-1 ... 5			
Over pressure	3	15	60	70	135
Burst pressure	6	30	120	140	270

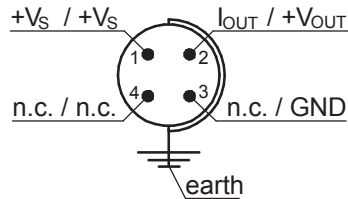
Electrical connections

Signal at 4...20 mA / Signal at 0...10V

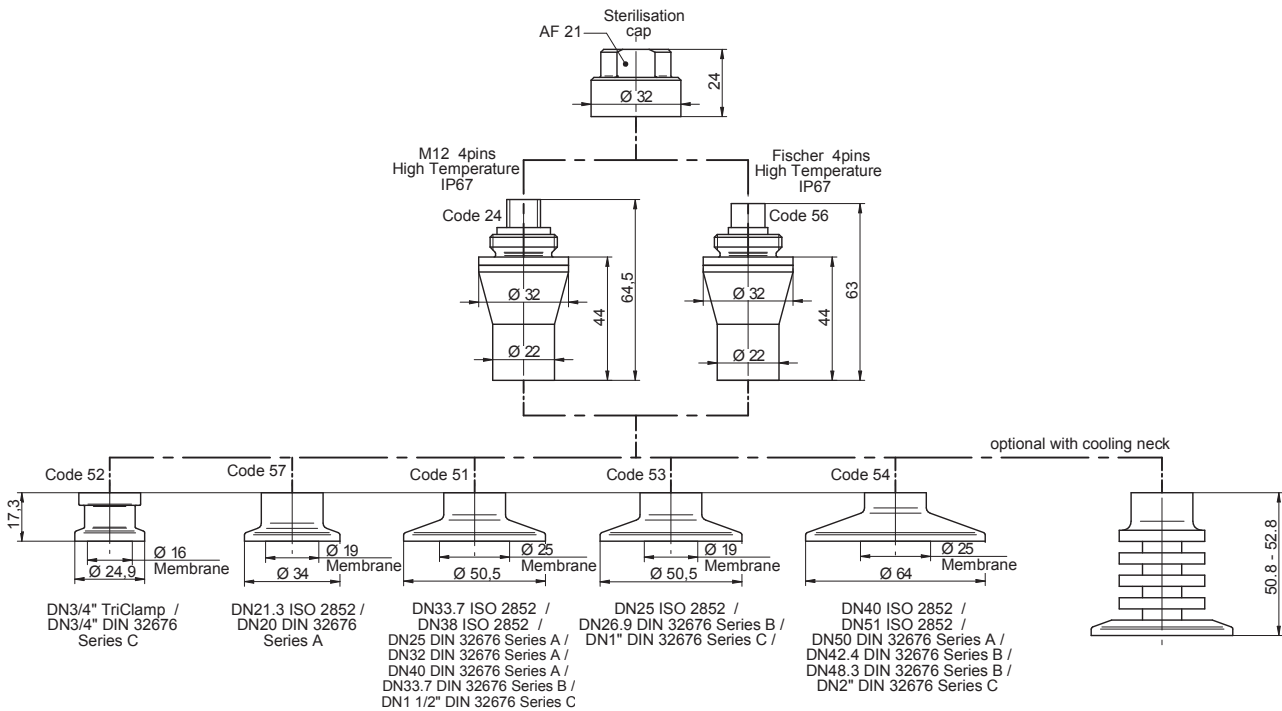
M12, 4-pins



Fischer plug 4-pins



Dimensions (mm)



Ordering details PBMH autoclavable

[illegible]