Baumer
Passion for Sensors

Pressure and continuous level measurement

PP56H

Fully welded pressure sensor with touch screen for hygenic applications

PP56H-2.B####.D214.####21.#0#0

Overview

- All market typical hygienic connections available
- Resistant to all common CIP cleaning media
- Condensate-proof measuring cell
- IO-Link dual channel output (in parallel to 4 ... 20 mA)
- Space-saving installations
- Absolute pressure, relative pressure and vacuum measurement
- Easy parameterization via display, IO-Link and FlexProgram
- Rotatable display with 28 steps over 315° for threaded pressure connections

Picture similar

Technical data

Performance characteristics

Pressure type	Absolute Relative (gauged)
Measuring range	-1 … 60 bar Refer to section "Operating conditions"
Max. measuring span	60 bar , with standard configuration
Min. measuring span	0.4 bar , with standard configuration
Max. turndown ratio	5 : 1
Compensated temperature range	-20 … 70 °C
Max. measuring error	± 0.3 % FSR , within compensated temperature range Including zero-point and span error, non-linearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2) For turndown, multiply this value by the applied turndown ratio
Temperature coefficient	≤ 0.1 % FSR/10 K @ -40 ... -20 °C ≤ 0.1 % FSR/10 K @ > 70 °C Refer to section "Operating conditions"
Long term stability	≤ 0.2 % FSR/a
Standard error of measurement (BFSL)	± 0.15 % FSR , within compensated temperature range Including non-linearity, hysteresis and non-repeatability according BFSL For turndown, multiply this value by the applied turndown ratio
Step response time, T90	≤ 45 ms , 2-wire ≤ 25 ms , 3-wire

Process conditions

Process temperature	-40 … 100 °C , without cooling neck -40 … 150 °C , with cooling neck
Process pressure	Refer to section "Operating conditions"

Process conditions

SIP/CIP compatibility	< 30 min, without cooling neck @ medium temperature up to 125 °C

Process connection

Connection variants	Refer to section "Dimensional drawings"
Wetted parts material	AISI 316L (1.4404)
Wetted parts material, membrane	AISI 316L (1.4435)

Surface roughness (in contact with medium)

Membrane	Ra ≤ 0.4 µm
Process connection	Ra ≤ 0.8 µm Ra ≤ 0.8 µm, electropolished, optional Ra ≤ 0.4 µm, optional Ra ≤ 0.4 µm, electropolished, optional
Weld joint	Ra ≤ 0.8 µm

Ambient conditions

Operating temperature range	-30 … 70 °C , with display -10 … 70 °C , optimal display readability
Storage temperature range	-40 … 85 °C
Degree of protection (EN 60529)	IP 67 IP 69 K , with appropriate mating connector
Humidity	< 100 % RH , condensing
Insulation resistance	> 100 MΩ , 500 V DC
Vibration (sinusoidal) (EN 60068-2-6)	1.6 mm (2 … 25 Hz), 4 g (25 … 100 Hz), 1 octave / min.
Shock (EN 61373)	300m/s² @ 15ms

Housing

Style	Compact transmitter, Ø50 mm
Overall size	Refer to section "Dimensional drawings"
Material	AISI 316L (1.4404)

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Technical data

Electrical connection

Connector	M12-A, 4-pin, stainless steel
Interface	IO-Link 1.1 FlexProgram

Power supply

Voltage supply range	15 … 35 V DC 18 … 30 V DC , with IO-Link
Current consumption (no load)	3.5 mA … 23 mA , 2-wire 16 mA typ., 25 mA max., 3-wire mode

Power supply

Reverse polarity protection	Yes
Power-up time	< 600 ms @ 24 V

Compliance and approvals

EMC	EN 61326-1 EN 61326-2-3 Deviation during immunity testing ≤ 0.2% FSR

Output signals

Switching output

Output type	PNP NPN Push-pull
Switching logic	High-Active Low-Active
Voltage drop	< 2 VDC
Current rating	100 mA , max.
Off leak current	< 160 µA , max.
Short circuit protection	Yes
Damping	0 … 60 s , programmable

4 ... 20 mA

Output signal	4 … 20 mA 20 … 4 mA , programmable Following accuracy specifications to be added to the values in section "performance characteristics" if sensor is used in analog mode.
Accuracy	± 0.1 % FSR (± 16 µA)
Step response time, T90	≤ 25 ms
Load resistance	Rs ≤ (V DC - 15 V)/23 mA, 2-wire mode Rs ≤ (V DC - 10 V)/23 mA, 3- & 4-wire mode
Ripple immunity	< 1 % FSR (1 Vrms, 50Hz...1kHz)
Effect of variations in supply voltage	< 0.01 % FSR/V (± 1.6 µA/V), deviating from 24 VDC
Damping	0 … 60 s , programmable

IO-Link interface

IO-Link version	1.1
Device profile	Smart Sensor Profile
IO-Link port type	Class A
Baud rate	38,4 kbaud (COM2)
Cycle time	≥ 4 ms
Process data length	48 bit
SIO-mode	Yes
Process data (cyclic)	Pressure Switch state State of alert
Diagnostic data (acyclic)	Measuring cell temperature CPU temperature Operation
Adjustable data (acyclic)	Offset settings Switch parameters Current output limit values Display configuration Tags Password for access
Dual Channel	IO-Link / SIO Mode
Dual Channel 2	Analogue / SIO Mode

Display

User configurable data

|	
Error- / Warning-indication	Individually configurable display and backlight indication in white, green or red colour, steady or flashing light. Configurable limits over the range
Measuring unit	bar Psi

General information

Panel type	FSTN Graphical LCD
Display range	-9999 … 99999
Max. digit height	21.8 mm
Material	Polycarbonate

Operating conditions

Measuring range (bar)		Proof pressure (bar)	Burst pressure (bar)
0 … 0,4		1	2
0 … 1	-1 … 1	3	6
0 … 6	-1 … 5	15	30
0 … 10	-1 … 15	60	120
0 … 20			
0 … 25		70	140
0 … 40		135	270
0 … 60			

Temperature coefficient
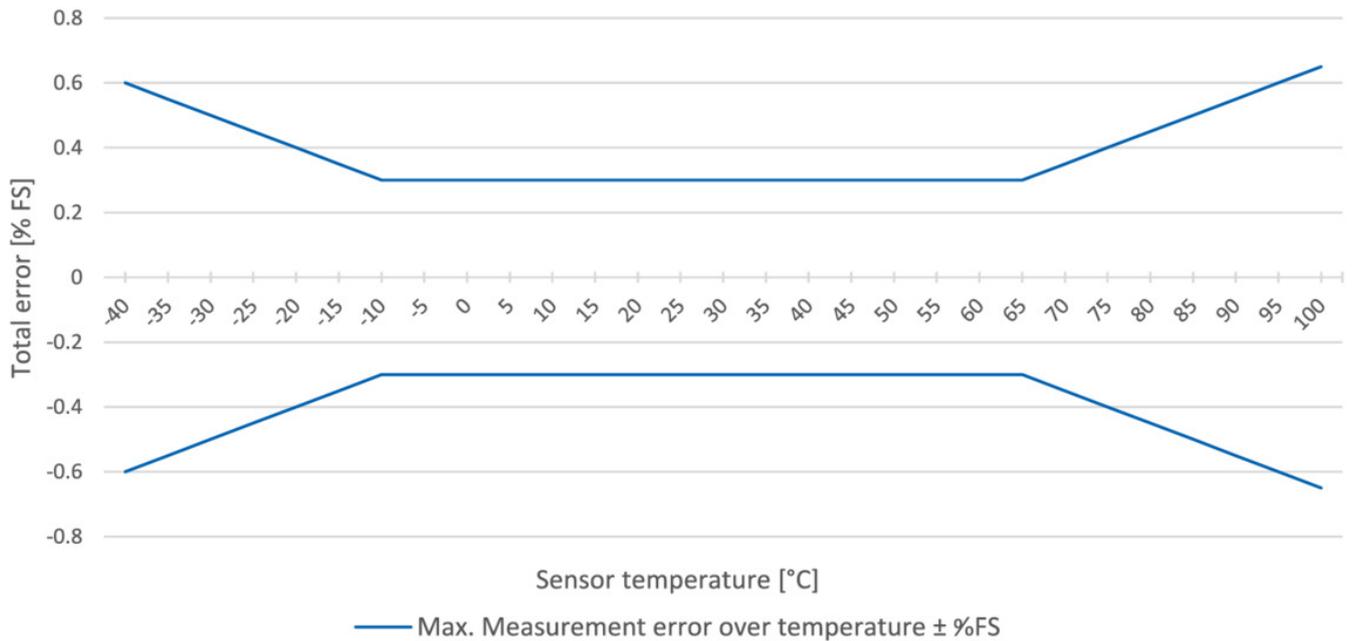
Dimensional drawings (mm)

Housing
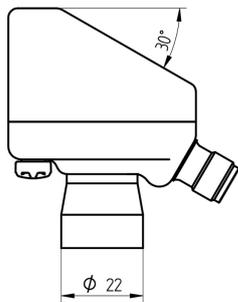
Display housing left view
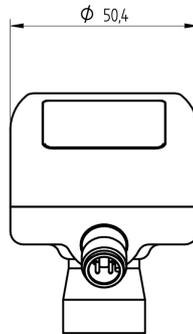
Display housing front view
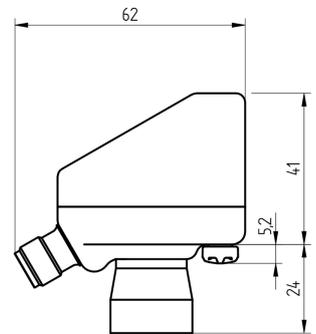
Display housing right view

### Process connection
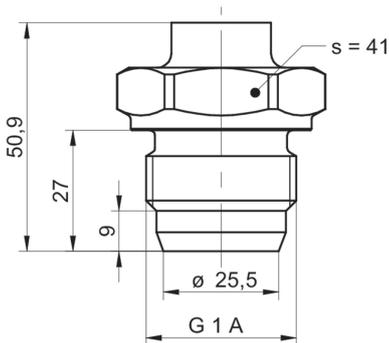
A04-44
G 1 A hygienic (BCID: A04)
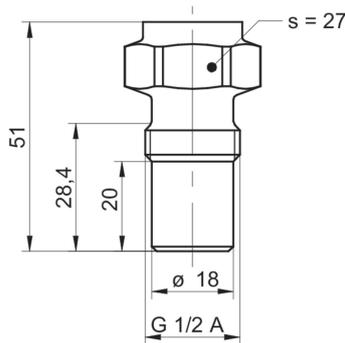
A03-48
G 1/2 A hygienic (BCID: A03)
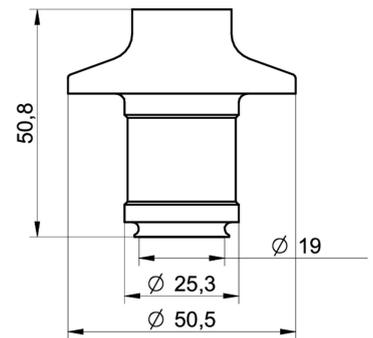
B01-50
BHC 3A DN 38, membrane Ø 19 mm (BCID: B01)
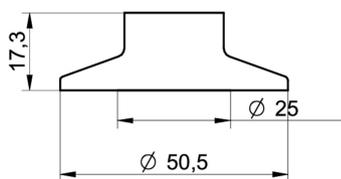
C04-51
Tri-Clamp Ø 50.5, membrane Ø 25 mm (BCID: C04)
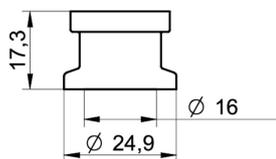
C01-52
Tri-Clamp Ø 24.9, membrane Ø 16 mm (BCID: C01)
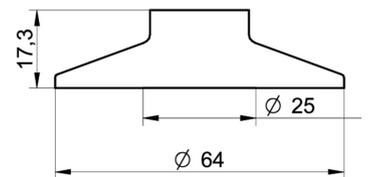
C05-54
Tri-Clamp Ø 64.0, membrane Ø 25 mm (BCID: C05)

Dimensional drawings (mm)

Process connection
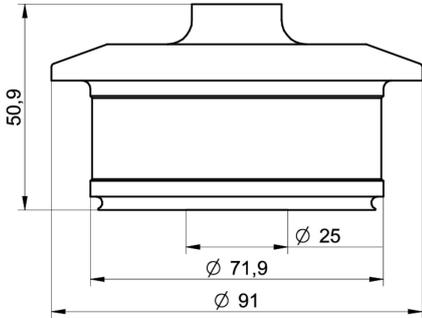
B02-56
BHC 3A DN 76, membrane Ø 25 mm (BCID: B02)
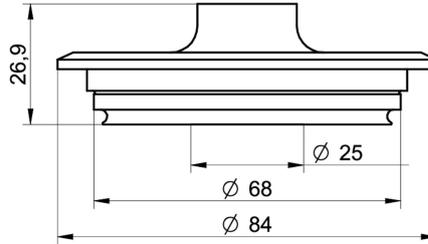
V02-61
Varivent® DN 32 … 125; 1 1/2" … 6" (Type N), Ø 68, membrane Ø 25 mm (BCID: V02)
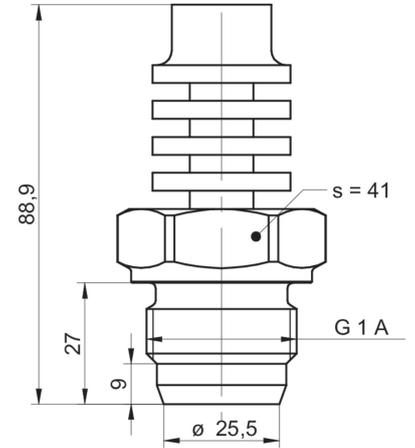
A04-74
G 1 A hygienic with cooling neck (BCID: A04)
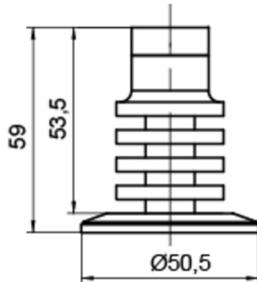
C04-81
Tri-Clamp Ø 50.5, membrane Ø 25 mm (BCID: C04) with cooling neck

Electrical connection

Equivalent circuit	Function	Pin assignment	Coding	Operating mode	Used pins
	+Vs	1		IO-Link / dual channel	1, 2, 3, 4
	Iout / SW2	2		analog 3-wire	1, 2, 3
	GND (0 V)	3		analog 2-wire	1, 2
	IO-Link / SW1	4			
	Frame Ground	Plug thread			

Ordering information

Ordering key - Configuration possibilities see website

	PP56H	- 2	. B	### #	. D2	14	. ## # 0 2 1	. # 0 # 0
Product								
PP56H	PP56H							
Housing material								
Stainless steel 1.4404 AISI 316L		2						
Accuracy								
±0.3 % FS			B					
Measuring range								
0 ... 0.4 bar (EN)				B11				
0 ... 1 bar (EN)				B15				
-1 ... 1 bar (EN)				B73				
0 ... 6 bar (EN)				B20				
-1 ... 5 bar (EN)				B77				
0 ... 10 bar (EN)				B22				
-1 ... 15 bar (EN)				B81				
0 ... 20 bar (EN)				B25				
0 ... 25 bar (EN)				B26				
0 ... 40 bar (EN)				B27				
0 ... 60 bar (EN)				B29				
Kind of pressure								
Relative (gauged)				R				
Absolute				A				
Output signal								
IO-Link and 4 … 20 mA in parallel Extended functionalitiy					D2			
Output Connection								
M12-A, 4-pin						14		
Process connection								
G 1 A hygienic (A04)[1]							44	
G 1/2 A hygienic (A03)[1]							48	
BHC 3A DN 38 (B01)							50	
ISO 2852 (Tri-Clamp), DN 33.7; 38, Ø 50.5 (C04)							51	
Tri-Clamp, DN 3/4, Ø 24.9 (ohne 3-A) (C01)							52	
ISO 2852 (Tri-Clamp), DN 40; 51, Ø 64.0 (C05)							54	
BHC 3A DN 76 (B02)							56	
Varivent® DN 32 … 125; 1 1/2 … 6 (Type N), Ø 68 (V02)							61	
G 1 A hygienic with cooling neck (A04)[1]							74	
ISO 2852 (Tri-Clamp), DN 33.7; 38, Ø 50.5 with cooling neck (C04)							81	
Process connection material								
Stainless steel 1.4404 AISI 316L								2
Edelstahl 1.4404 Ra0.4								3
Stainless steel AISI 316L, 1.4435 electropolished Ra 0.4								F
Seal								
None								0
Oil filling								
NSF H1 listed (FDA approved)								2
Display								
With display								1

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Ordering information

Ordering key - Configuration possibilities see website

	PP56H	-	2	.	B	###	#	.	D2	14	.	##	#	0	2	1	.	#	0	#	0
Configuration																					
Factory settings																		0			
Customer-specific																		1			
Explosion protection																					
Without																			0		
Approvals																					
Standard approvals																				0	
Hygienic approvals																				1	
Technology																					
Silicon																					0

(1) Without 3A / EHEDG