

## PP20H

Fully welded pressure sensor with hygienic connection

PP20H-2.#####.A114.##202#.000

### Overview

- All market typical hygienic connections available
- Resistant to all common CIP cleaning media
- Condensate-proof measuring cell
- Optionally available with IO-Link (in parallel to 4 ... 20 mA)
- Space-saving installations from DN 25 on
- Absolute pressure, relative pressure and vacuum measurement



### Technical data

#### Performance characteristics

Pressure type	Absolute Relative (gauged)
Compensated temperature range	-20 ... 125 °C
Long term stability	≤ 0.2 % FSR/a
Max. measuring error	± 0.5 % FSR ± 1.0 % FSR, 0 ... 0.4 bar Including zero-point and span error, non-linearity (by terminal base line), hysteresis and non-repeatability (EN 61298-2)
Max. measuring span	40 bar
Measuring range	-1 ... 40 bar
Standard error of measurement (BFSL)	± 0.2 % FSR ± 0.5 % FSR, 0 ... 0.4 bar Including non-linearity, hysteresis and non-repeatability according BFSL
Min. measuring span	0.4 bar
Rise time (10 ... 90 %)	≤ 20 ms
Temperature coefficient	≤ 0.2 % FSR/10 K, measuring span ≤ 0.2 % FSR/10 K, zero point

#### Process conditions

Process temperature	-20 ... 125 °C
Process pressure	Refer to section "Operating conditions"
SIP/CIP compatibility	< 35 min, in general @ medium temperature up to 150 °C < 60 min, in general @ medium temperature up to 135 °C < 60 min, with process connection G 1/2 A hygienic @ medium temperature up to 135 °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)

Process connection	Ra ≤ 0.8 µm
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#### Ambient conditions

Operating temperature range	-20 ... 85 °C
Storage temperature range	-40 ... 85 °C
Degree of protection (EN 60529)	IP 67, without connector M12-A, 4-pin IP 69, with appropriate cable
Insulation resistance	> 100 MΩ, 500 V DC
Bump (EN 60068-2-27)	100 g / 2 ms, 4000 impulses per axis and direction
Cold (EN 60068-2-1)	Ab: -40 °C, 2 h (not in operation)
Damp heat, cyclic (EN 60068-2-30)	Db: 55°C, Variant 1, 2 cycles (2 · 24 h)
Dry heat (EN 60068-2-2)	Be: 85 °C, 6 h (in operation)
Shock (EN 60068-2-27)	50 g / 11 ms, 100 g / 6 ms, 10 impulses per axis and direction
Vibration (sinusoidal) (EN 60068-2-6)	1.5 mm p-p (10 ... 58 Hz), 10 g (58 Hz ... 2 kHz), 10 cycles (2.5 h) per axis
Vibration, broad-band random (EN 60068-2-64)	0.1 g <sup>2</sup> / Hz, > 10 gRMS (20 Hz ... 1 kHz), 30 min. per axis

#### Output signal

Current output	4 ... 20 mA, 2-wire
Short circuit protection	Yes
Shunt resistance	Rs ≤ (Vs - 8 V)/0.02 A

#### 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)
SIO-mode	Yes
Process data (cyclic)	Pressure or temperature Switch state State of alert Scaling factor
Diagnostic data (acyclic)	Ambient pressure CPU temperature Unit temperature Operation time (since power-on)

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### Technical data

#### IO-Link interface

Adjustable data (acyclic)	Offset settings Switch parameters Measuring mode
Dual Channel	IO-Link / Analogue Analogue / SIO Mode

#### Housing

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

#### Electrical connection

Connector	M12-A, 4-pin, stainless steel, 4 ... 20 mA output M12-A, 5-pin, stainless steel, IO-Link output
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#### Power supply

Voltage supply range	11 ... 30 V DC , with 4 ... 20 mA output signal 18 ... 30 V DC , with IO-Link
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Reverse polarity protection Yes

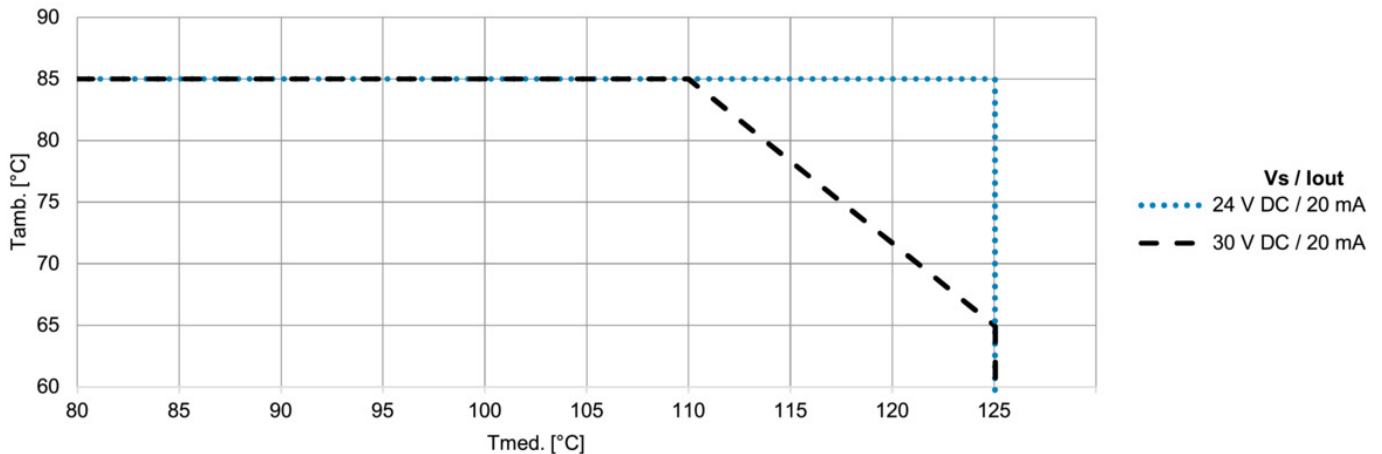
#### Compliance and approvals

EMC	EN 61000-6-2 EN 61000-6-3 EN 61326-2-3
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### Operating conditions

Measuring range (bar)				Proof pressure (bar)	Burst Pressure (bar)
-1 ... 0	-1 ... 1	0 ... 0.4	0 ... 1	5	10
-1 ... 3	-1 ... 5	0 ... 2.5	0 ... 4	10	20
	-1 ... 9	0 ... 6	0 ... 10	20	40
	0 ... 25			50	100
	0 ... 40			80	160

### Maximum operating conditions in subject to temperature



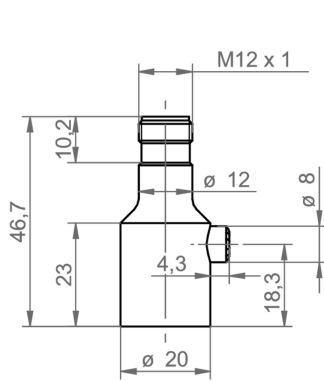
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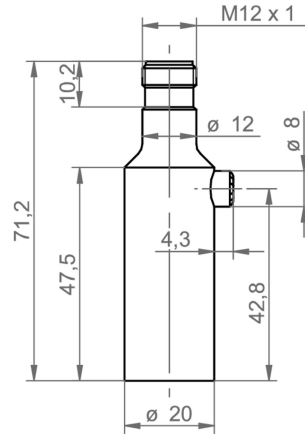
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### Dimensional drawings (mm)

#### Housing

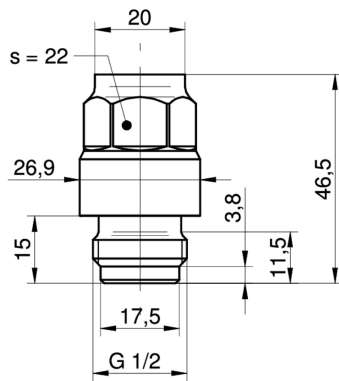


Short housing with connector M12-A

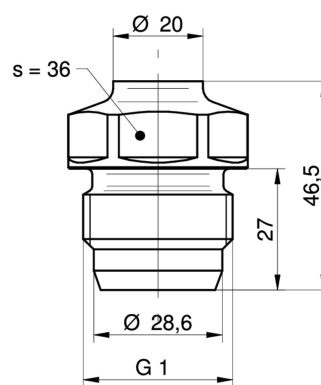


Long Housing with connector M12-A

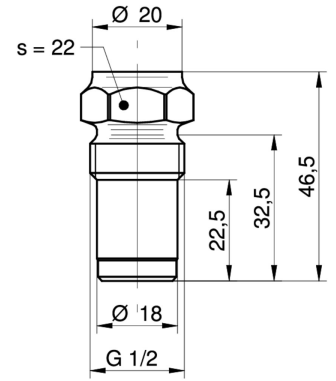
#### Process connection



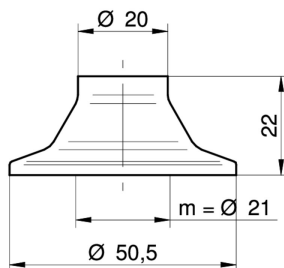
G51-41  
G 1/2 A DIN 3852-E (BCID: G51)



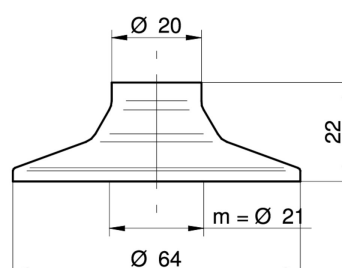
A04-44  
G 1 A hygienic (BCID: A04)



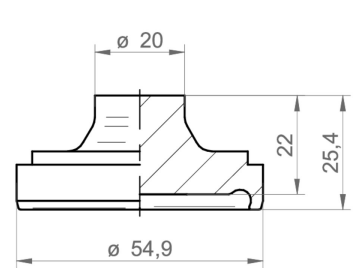
A03-48  
G 1/2 A hygienic (BCID: A03)



C03-53  
Tri-Clamp Ø 50.5 (BCID: C03)



C05-54  
Tri-Clamp Ø 64.0 (BCID: C05)



H03-59  
DIN 11864-1-A (aseptic screwed union), DN 40 (BCID: H03)

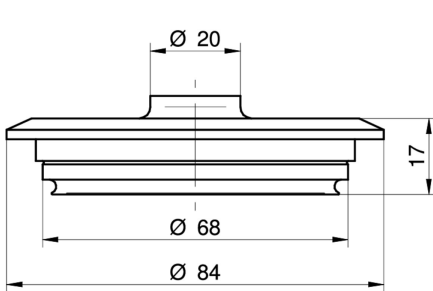
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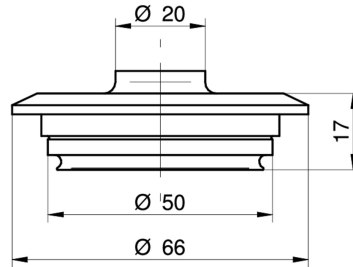
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### Dimensional drawings (mm)

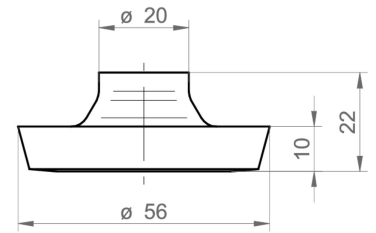
#### Process connection



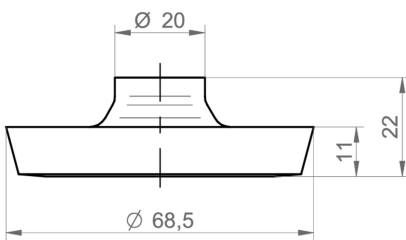
V02-61  
Varivent® DN 32 ... 125; 1 1/2" ... 6" (Type N),  
Ø 68 (BCID: V02)



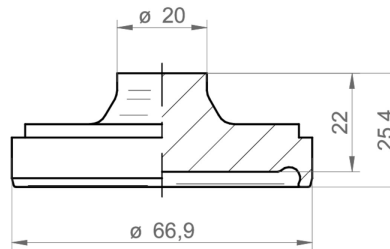
V01-62  
Varivent® DN 25; 1" (Type F), Ø 50 (BCID:  
V01)



D03-65  
DIN 11851 (dairy pipe connection), DN 40  
(BCID: D03)



D04-66  
DIN 11851 (dairy pipe connection), DN 50  
(BCID: D04)



H04-68  
DIN 11864-1-A (aseptic screwed union), DN  
50 (BCID: H04)

### Electrical connection

Output signal	Equivalent circuit	Electrical connection	Function	Pin assignment
4 ... 20 mA (2-wire)			+Vs	1
			Iout	3
			Frame Ground	Plug thread
			n.c.	2, 4
IO-Link (3-wire)			+Vs	1
			GND (0 V)	3
			SW1, IO-Link	4
			Iout	2
			Frame Ground	Plug thread
			n.c.	5

### Ordering information

Ordering key - Configuration possibilities see website

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Ordering key - Configuration possibilities see website

Product	PP20H	-	2	.	#	###	#	.	A1	14	.	##	#	0	2	0	.	0	0	0
	PP20H																			
Housing material																				
Stainless steel 1.4404 AISI 316L			2																	
Accuracy																				
±1.0 % FS						1														
±0.5 % FS						3														
Measuring range																				
0 ... 0.4 bar (EN)						B11														
0...1 bar (EN)						B15														
0 ... 2.5 bar (EN)						B18														
0 ... 4 bar (EN)						B19														
0 ... 6 bar (EN)						B20														
0 ... 10 bar (EN)						B22														
0 ... 16 bar (EN)						B24														
0...25 bar (EN)						B26														
0 ... 40 bar (EN)						B27														
-1...0 bar (EN)						B59														
-1...1 bar (EN)						B73														
-1...3 bar (EN)						B76														
-1...5 bar (EN)						B77														
-1...9 bar (EN)						B79														
0...5 bar (EN)						B98														
Kind of pressure																				
Relative (gauged)							R													
Absolute							A													
Output signal																				
4...20 mA									A1											
Output Connection																				
M12-A, 4-pin										14										
Process connection																				
G 1/2 A DIN 3852-E (G51) <sup>(2)</sup>																41				
G 1 A hygienic (A04) <sup>(2)</sup>																44				
G 1/2 A hygienic (A03) <sup>(2)</sup>																48				
ISO 2852 (Tri-Clamp), DN 25, Ø 50.5 (C03) <sup>(1)</sup>																53				
ISO 2852 (Tri-Clamp), DN 40; 51, Ø 64.0 (C05) <sup>(1)</sup>																54				
Varivent® DN 32 ... 125; 1 1/2 ... 6 (Type N), Ø 68 (V02) <sup>(3)</sup>																61				
Varivent® DN 25; 1 (Type F), Ø 50 (V01) <sup>(4)</sup>																62				
DIN 11864-1-A (aseptic screwed union), DN 50 (H04) <sup>(1)</sup>																68				
DIN 11864-1-A (aseptic screwed union), DN 40 (H03) <sup>(3)</sup>																59				
DIN 11851 (dairy pipe connection), DN 40 (D03) <sup>(1)</sup>																65				
DIN 11851 (dairy pipe connection), DN 50 (D04) <sup>(1)</sup>																66				
Process connection material																				
Stainless steel 1.4404 AISI 316L																2				
Stainless steel 1.4404 Ra0.4																3				
Seal																				
None																	0			
Oil filling																				
NSF H1 listed (FDA approved)																	2			

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### Ordering information

Ordering key - Configuration possibilities see website

	PP20H	-	2	.	#	###	#	.	A1	14	.	##	#	0	2	0	.	0	0	0
<b>Display</b>																				
Without display																	0			
<b>ATEX</b>																				
Standard safety																	0			
<b>Approvals</b>																				
Standard approvals																	0			
<b>Technology</b>																				
Silicon																	0			

- (1) EHEDG only with special gasket
- (2) EHEDG not included
- (3) EHEDG included
- (4) EHEDG not included, only for tank installation