

## PP20H - Ax Analog

Fully welded pressure sensor with hygienic connection

PP20H-2.#####.####.####20.000

### Overview

- All market typical hygienic connections available
- Resistant to all common CIP cleaning media
- Condensate-proof measuring cell
- 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 %)	≤ 15 ms
Temperature coefficient	≤ 0.2 % FSR/10 K, measuring span ≤ 0.2 % FSR/10 K, zero point

#### Process conditions

Process temperature	Depending on process connection Refer to section "Operating conditions"
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)

Membrane	Ra ≤ 0.4 µm
Process connection	Ra ≤ 0.8 µm Ra ≤ 0.4 µm, optional with ISO 2852 Tri-Clamp DN 25 (BCID: C03)
Weld joint	Ra ≤ 0.8 µm

#### 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), 300 min. per axis

#### Output signal

Current output	4 ... 20 mA, 2-wire
Voltage output	0 ... 10 V DC, 3-wire
Load resistance	> 5 kΩ, with voltage output Rs ≤ (Vs - 8 V)/0.020 A, with current output
Short circuit protection	Yes

#### Housing

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

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PP20H-2.#####.####.#####20.000

## Technical data

### Electrical connection

Connector M12-A, 4-pin, stainless steel

### Power supply

Voltage supply range 11 ... 30 V DC , with 4 ... 20 mA output signal  
13 ... 30 V DC , with 0 ... 10 V output signal

### Power supply

Reverse polarity protection Yes

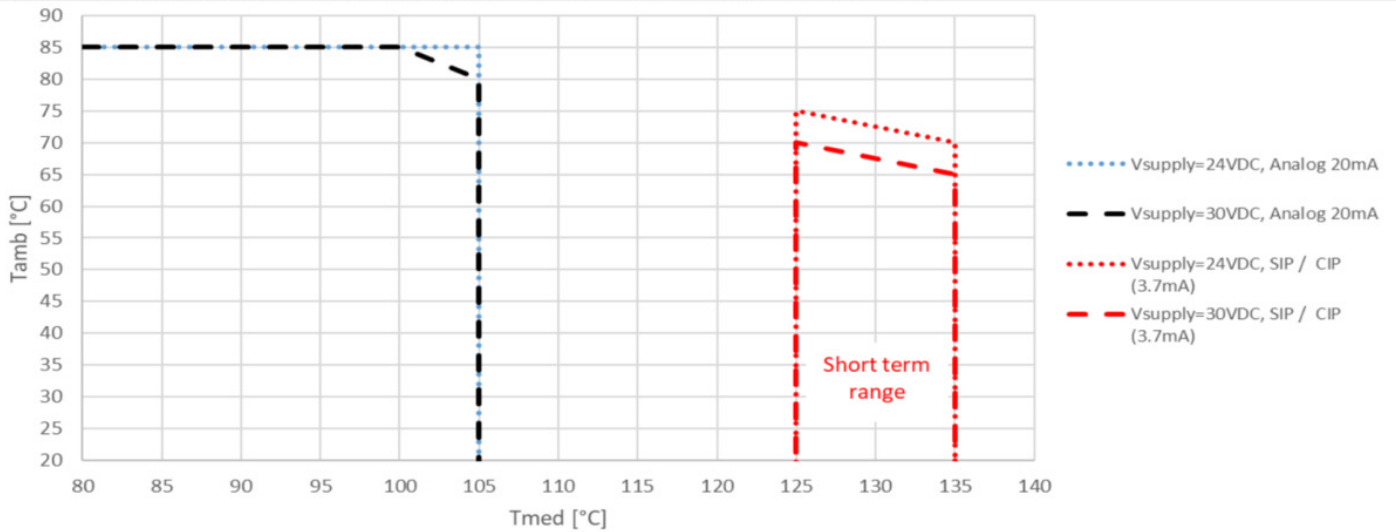
### Compliance and approvals

EMC EN 61000-6-2  
EN 61000-6-3  
EN 61326-2-3

## 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		10	20
0 ... 4	0 ... 5			20	40
-1 ... 9	0 ... 6	0 ... 10		50	100
0 ... 16	0 ... 25			80	160
0 ... 40					

## Maximum operating conditions in subject to temperature - process connections codes 41, 44, 48



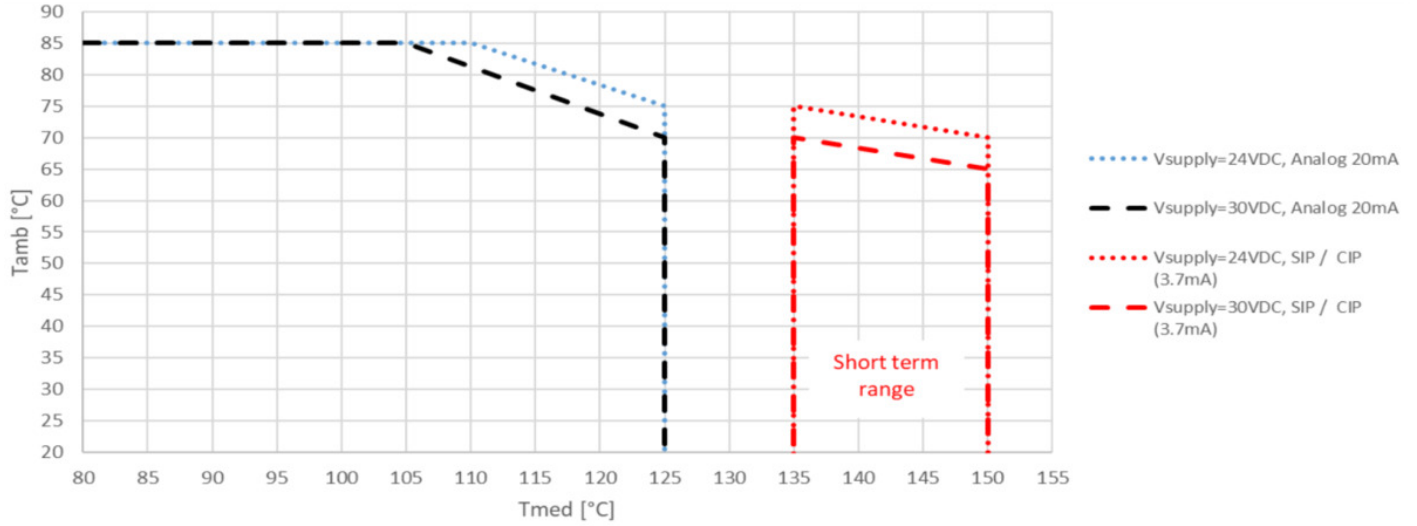
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PP20H-2.#####.#####.#####20.000

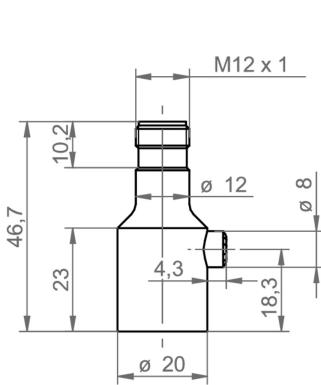
## Operating conditions

Maximum operating conditions in subject to temperature - process connections codes 53, 54, 59, 61, 62, 65, 66, 68

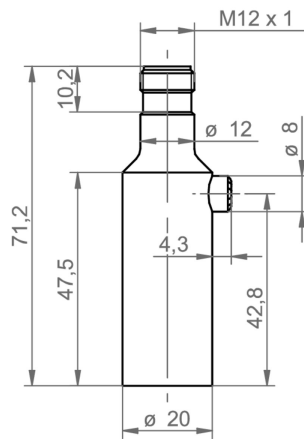


## Dimensional drawings (mm)

### Housing



Short housing with connector M12-A



Long Housing with connector M12-A

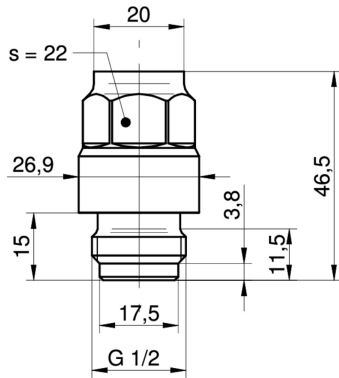
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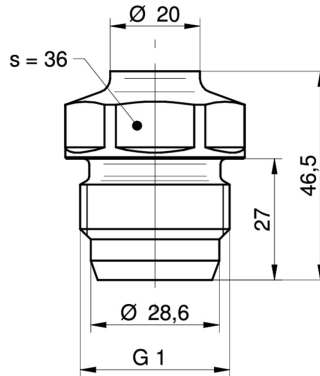
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## Dimensional drawings (mm)

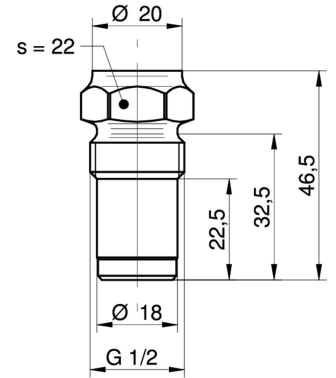
### Process connection



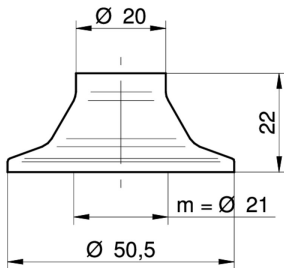
G51-41  
G 1/2 A DIN 3852-E (BCID: G51)



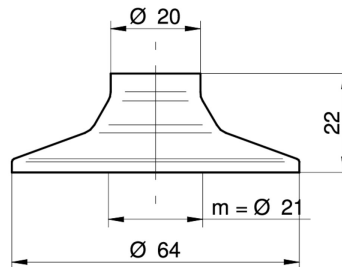
A04-44  
G 1 A hygienic (BCID: A04)



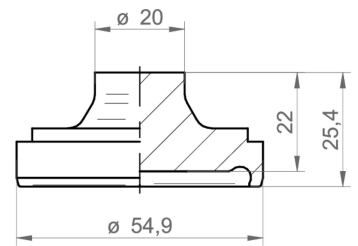
A03-48  
G 1/2 A hygienic (BCID: A03)



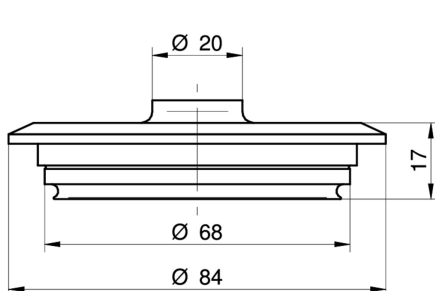
C03-53  
Tri-Clamp Ø 50.5 (BCID: C03)



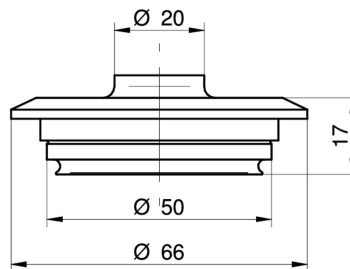
C05-54  
Tri-Clamp Ø 64.0 (BCID: C05)



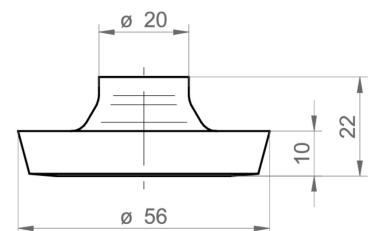
H03-59  
DIN 11864-1-A (aseptic screwed union), DN 40 (BCID: H03)



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)

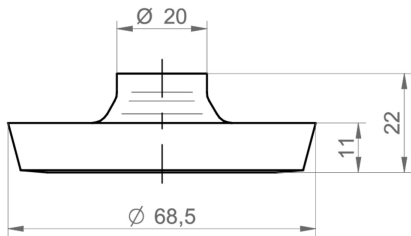
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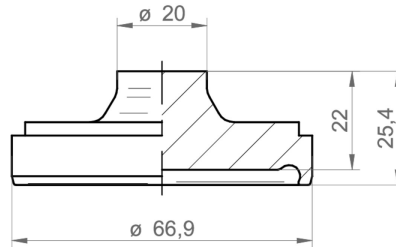
PP20H-2.#####.####.#####20.000

## Dimensional drawings (mm)

### Process connection



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 type	Equivalent circuit	Electrical connection	Function	Pin assignment							
4 ... 20 mA (2-wire)			<table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>lout</td><td>3</td></tr> <tr><td>Frame Ground</td><td>Plug thread</td></tr> <tr><td>n.c.</td><td>2, 4</td></tr> </table>	+Vs	1	lout	3	Frame Ground	Plug thread	n.c.	2, 4
+Vs	1										
lout	3										
Frame Ground	Plug thread										
n.c.	2, 4										
0 ... 10 V (3-wire)			<table border="1"> <tr><td>+Vs</td><td>1</td></tr> <tr><td>Uout</td><td>2, 4</td></tr> <tr><td>GND (0 V)</td><td>3</td></tr> <tr><td>Frame Ground</td><td>Plug thread</td></tr> </table>	+Vs	1	Uout	2, 4	GND (0 V)	3	Frame Ground	Plug thread
+Vs	1										
Uout	2, 4										
GND (0 V)	3										
Frame Ground	Plug thread										

## Ordering information

Ordering key - Configuration possibilities see website

Product	PP20H	-	2	.	#	###	#	.	##	14	.	##	#	#	2	0	.	0	0	0
Housing material	Stainless steel 1.4404 AISI 316L						2													
Accuracy	±1.0 % FS																			1
	±0.5 % FS																			3

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## Ordering information

Ordering key - Configuration possibilities see website

	PP20H	-	2	.	#	###	#	.	##	14	.	##	#	#	2	0	.	0	0	0	
<b>Measuring range</b>																					
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														
<b>Kind of pressure</b>																					
Relative (gauged)																				R	
Absolute																					A
<b>Output signal</b>																					
4...20 mA																					A1
0...10 V																					A2
<b>Output Connection</b>																					
M12-A, 4-pin																					14
<b>Process connection</b>																					
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>(3)</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
<b>Process connection material</b>																					
Stainless steel 1.4404 AISI 316L																					2
Stainless steel 1.4404 Ra0.4																					3
<b>Seal</b>																					
None																					0
EPDM																					2
<b>Oil filling</b>																					
NSF H1 listed (FDA approved)																					2
<b>Display</b>																					
Without display																					0
<b>ATEX</b>																					
Standard safety																					0
<b>Approvals</b>																					
Standard approvals																					0

