

## Hydra-Sensor Pressure Transmitter

### Construction

The GEMÜ C31 **Hydra-Sensor** pressure measurement device is equipped with a pressure transmitter. The body is made from PFA/PTFE and can be directly integrated into the pipe system by common flare unions. A PFA double diaphragm prevents contamination of the working medium. Only the PFA/PTFE body and the PFA diaphragm are wetted parts. The pressure is transmitted by a monitor liquid (IPA (isopropyl alcohol) / DI water, further liquids on request).

### Features

- C31 is especially suitable for pressure measurement of ultra high purity chemicals
- All wetted parts are made from High Purity (PFA/PTFE)
- Pressure transmission by double diaphragm technology
- Pressure transmitter can be rotated through 360°
- Protection class IP 65 or IP 67 (depending on version)
- REACH / RoHS compliant
- Other certificates on request (e.g. FDA compliance)

### Advantages

- Minimal deadleg
- The proven GEMÜ **CleanStar®** technology is the basis of the transmitter
- Working medium isolated from the transmitter by a patented PFA double diaphragm
- Pressure transmitter can be positioned through 360° enabling individual user options
- Production, assembly, calibration and packaging in cleanroom ISO 6

### Dimensions - GEMÜ C31

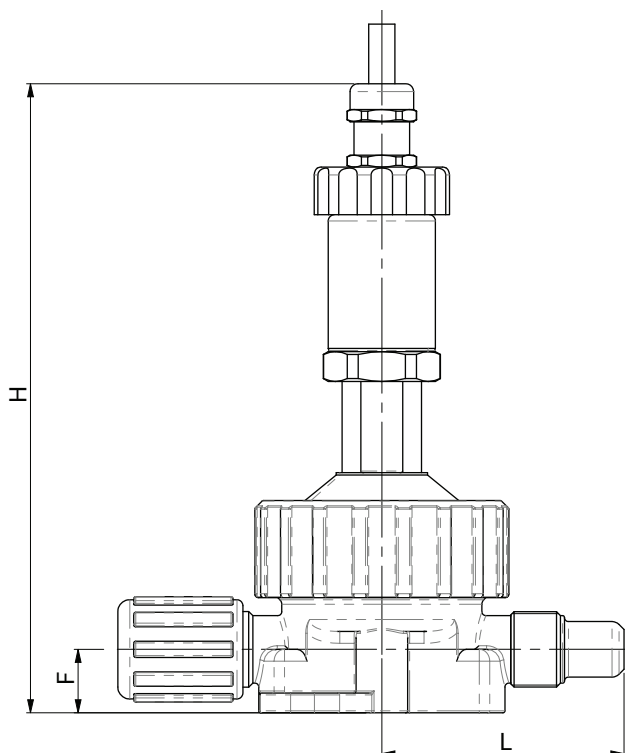
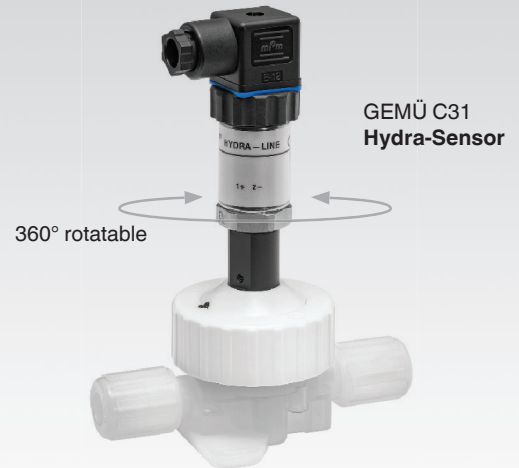


Table of dimensions see last page.



## Technical data - Transmitter

### Flow medium

Suitable for any inert or corrosive gases or liquids,  
- particularly high purity media - which do not corrode the  
body and diaphragm materials.

For corrosive media like HCL type C32 is recommended  
(see data sheet C32)

### Temperature

Ambient 41 ... 140 °F

Medium 41 ... 140 °F

Storage/transport -4 ... 140 °F

Depending on operating pressure

### Version of transmitter diaphragm

- Double diaphragm system for working-/ measuring range  
≥ 0 bar relative (Code BF, BG, BH)
- Single diaphragm for working-/ measuring range  
≤ 0 bar relative (Code CF, CG, CH)

### Material of wetted parts

Diaphragm	PFA
Body	PFA (In-Line), PTFE (Dead-End)

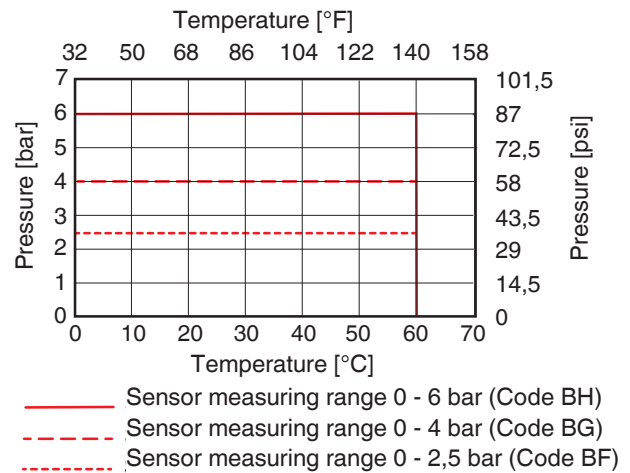
### Flow direction

Optional

### Installation position

Standard calibration: C30 should be installed such that the  
transmission fluid transfers the pressure from the diaphragm  
vertically (vertical installation). Other installation positions  
may affect the accuracy.

### Pressure/temperature correlation



## Technical data - Pressure transmitter

### Auxiliary power

DC 10...30 V

### Pressure measurement device

Sensor 4...20 mA, 2-wire system  
(with optional pluggable LCD)

### Output signal

4...20 mA, two wire

### Maximum admissible current

40 mA

### Cable length

5 m, with cable outlet IP 67

### Temperature

Ambient 41 ... 140 °F

Medium 41 ... 140 °F

Storage/transport -4 ... 140 °F

Depending on operating pressure

### Characteristic deviation

0.5 % of span

### Temperature compensation

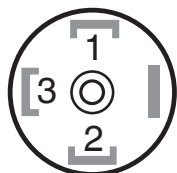
Additional measurement error up to 0.5 % per 10° C  
temperature deviation from the reference temperature of 20°C

### Voltage drop

3 V

## Elektrical connection

### L-plug DIN EN 175301-803 A



PIN

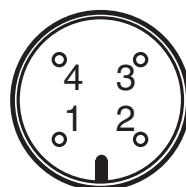
1

U+

2

U-

### Plug M12x1



PIN

1

U+

3

U-

### Cable outlet with flying lead



Brown (BN)

U+

Green (GN)

U-

Grey (GY)

GND

## Order data

Nominal size	Code
1/4" (only Dead-End) DN 4	4
3/8" (Dead-End + In-Line) DN 6	6
1/2" (Dead-End + In-Line) DN 10	8
3/4" (only In-Line) DN 15	12
1" (only In-Line) DN 20	16
1 1/4" (only In-Line) DN 25	20

Mounting variant	Code
Dead-End	E
In-Line	L

Connection	Code
NPT male thread (only 1/4" Dead-End)	13
Flare connection with CPFA union nut	73
Flare connection with PVDF union nut	75
Flare connection with PFA union nut	77

Body material	Code
PTFE (Dead-End)	26
PFA (In-Line)	30

Diaphragm material	Code
PFA	H3

Unit	Code
Bar	B
psi	P
kPa	A

Measuring range*	Code
0...30 psi 0...250 kPa 0...2,5 bar	BF
0...60 psi 0...400 kPa 0...4,0 bar	BG
0...100 psi 0...600 kPa 0...6,0 bar	BH
-30 inHg...15 psi -100...150 kPa -1...1,5 bar	CF
-30 inHg...30 psi -100...300 kPa -1...3,0 bar	CG
-30 inHg...60 psi -100...500 kPa -1...5,0 bar	CH
* Pressure reference: Relative pressure	

Connection form	Code
L-plug DIN EN 175301-803 A, IP 65	A
Plug M12x1 (4 pin)	M
Cable outlet with 5 m flying lead, IP 67	D

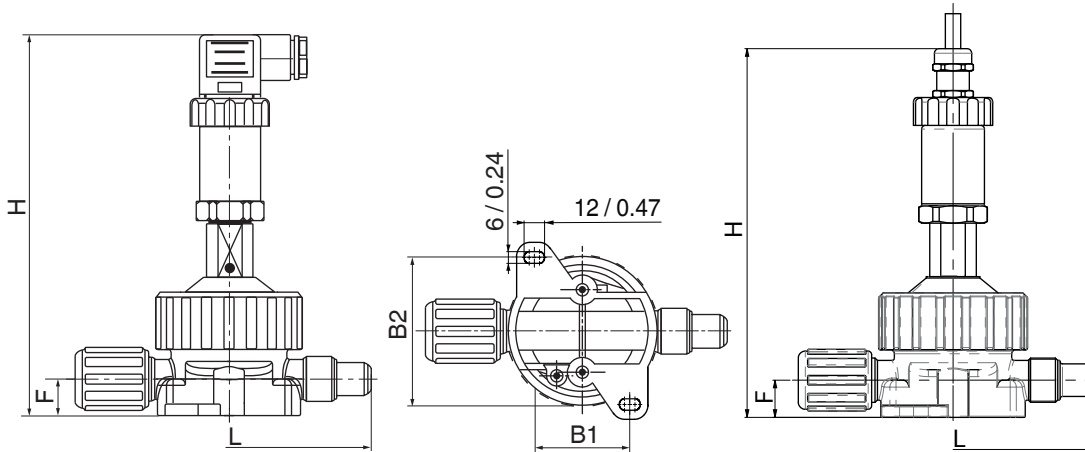
Display	Code
LCD, 4-digit (only possible with L-plug version)	L
Without	Z

Fill fluid of transmitter	Code
Isopropyl-alcohol (IPA) / DI-water 50:50	2
further fill fluids on request	

Version High Purity	Code
High Purity white	HPW

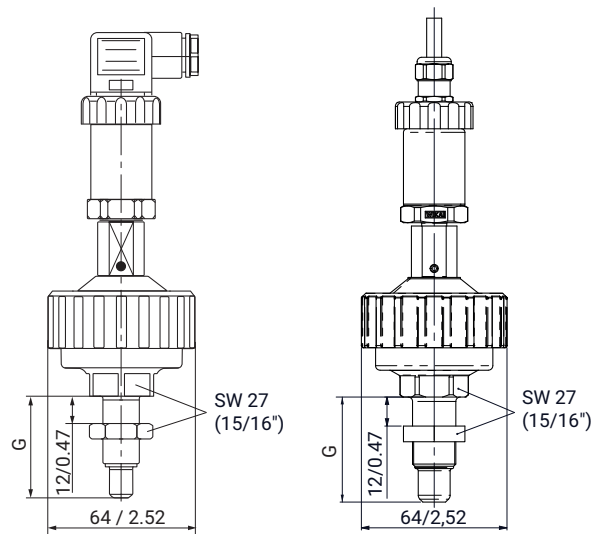
Order example	C31	8	L	75	30	H3	B	BF	A	Z	1	HPW
Type	C31											
Nominal size (code)		8										
Mounting variant (code)			L									
Connection (code)				75								
Body material (code)					30							
Diaphragm material (code)						H3						
Unit (code)							B					
Measuring range (code)								BF				
Connection form (code)									A			
Display (code)										Z		
Fill fluid (code)											1	
Version High Purity (code)												HPW

## Dimensions - GEMÜ C31 In-Line [mm / inch]



In-Line	H		L	F	B1	B2
	Connection code A	Connection code D				
3/8" Flare*	167 / 6.57	158 / 6.22	118 / 4.65	16 / 0.63	40 / 1.57	62 / 2.44
1/2" Flare*	167 / 6.57	158 / 6.22	122 / 4.80	16 / 0.63	40 / 1.57	62 / 2.44
3/4" Flare*	172 / 6.77	164 / 6.46	122 / 4.80	19 / 0.75	40 / 1.57	62 / 2.44
1" Flare	197 / 7.76	186 / 7.32	165 / 6.50	25 / 0.98	56 / 2.20	78 / 3.07
1 1/4" Flare	197 / 7.76	201 / 7.91	225 / 8.86	25 / 0.98	56 / 2.20	78 / 3.07

## Dimensions - GEMÜ C31 Dead-End [mm / inch]



Dead-End	H*		L
	Connection code A	Connection code D	
1/4" Flare	201 / 7.93	196 / 7.72	44 / 1.73
3/8" Flare	201 / 7.93	196 / 7.72	44 / 1.73
1/2" Flare	204 / 6.10	199 / 7.83	47 / 1.85

\*Tolerances:  $\pm 2 \text{ mm} / \pm 0.08 \text{ inch}$

For further High purity products, accessories and other products, please see our Product Range catalogue and Price List. Contact GEMÜ.

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AND CONTROL SYSTEMS

