

GEMÜ C33

Pressure measurement device



Features

- Diaphragm is an integral part of the sensor envelope
- Non-metallic ultra pure ceramic sensor
- Media wetted area made exclusively of PTFE
- Plastic housing for aggressive ambient conditions
- Production, assembly, calibration and packaging in cleanroom ISO 6

Description

The GEMÜ C33 HydraLine electronic pressure measurement device comprises a PTFE body and a housing made of PTFE, PVDF and FKM. It has a ceramic pressure measurement cell which is separated from the process medium by an innovative new sealing concept. This means the process medium only comes into contact with PTFE. The GEMÜ C33 HydraLine has a leak detection hole for easy leakage detection and can be integrated directly into the piping system via flare unions.

Technical specifications

- **Measuring range:** 0 Up to 6 bar Or 0 Up to 100 psi; for further measuring ranges, see Range overview
- **Error of measurement:** ± 1 % of final value ; for further error of measurements, see Range overview
- **Input signals:** 4–20 mA
- **Media temperature :** 0 to 80 °C
- **Ambient temperature:** 0 to 60 °C
- **Body materials:** PTFE
- **Connection type:** Flare | Nexus Connect®

Technical data depends on the respective configuration



Product description



Item	Name	Material
1	Cable*	FEP encapsulated
2	Housing*	PVDF, FKM
3	Housing (separation of media)**	PTFE
4	Body**	PTFE

* not media wetted

** media wetted

Range overview

Availability of measuring range

Depending on the combination with the relevant codes, the respective measuring range can be selected:

Measuring range	Unit [bar]	Unit [psi]	Error of measurement
Code	Code B	Code P	
JK	0.0–2.5	0–30	± 1.5% FS
BK	0.0–6.0	0–100	± 1.0% FS

Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Pressure measurement device with ceramic pressure sensor	C33

2 Connection size	Code
1/4", international code: 4	4
3/8", international code: 6	6
1/2", international code: 8	8
3/4", international code: 12	12
1", international code: 16	16

3 Mounting version	Code
Dead-end	E
In-line	L

4 Connection type	Code
Flare connection with CPFA union nut	73
Flare connection with PVDF union nut	75
Flare connection with PFA union nut	77
Nexus Connect connection with PFA union nut	NX

5 Body material	Code
PTFE polytetrafluoroethylene, white	SP

6 Diaphragm material	Code
Modified PTFE, polytetrafluoroethylene	26

7 Unit	Code
bar	B
psi	P

8 Measuring range	Code
0–30 psi, 0.0–2.5 bar	BJ
0–100 psi, 0.0–6.0 bar	BK

9 Connection type	Code
Cable outlet with 2 m flying lead, (FEP encapsulated), IP 67	K

10 Display	Code
Without	Z

11 High Purity version	Code
High Purity	HP

12 Special version	Code
UL approval	U

Order example

Ordering option	Code	Description
1 Type	C33	Pressure measurement device with ceramic pressure sensor
2 Connection size	8	1/2", international code: 8
3 Mounting version	L	In-line
4 Connection type	73	Flare connection with CPFA union nut
5 Body material	SP	PTFE polytetrafluoroethylene, white
6 Diaphragm material	26	Modified PTFE, polytetrafluoroethylene
7 Unit	B	bar
8 Measuring range	BK	0–100 psi, 0.0–6.0 bar
9 Connection type	K	Cable outlet with 2 m flying lead, (FEP encapsulated), IP 67
10 Display	Z	Without
11 High Purity version	HP	High Purity
12 Special version	U	UL approval

Technical data

Medium

Working medium: Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and seal material.

Temperature

Media temperature: 0 – 80 °C

Ambient temperature: 0 – 60 °C

Mechanical data

Installation position: Optional

Flow direction: Optional

Protection class: IP 67 (not rated by UL)

Mounting version: In-Line and Dead-End

Connection cable: 2 m, flying lead, FEP encapsulated, bend radius ≥ 20 mm

Weight: 500 g (In-Line 1/2")

Operating pressure: 2,5 - 6 bar
30 – 100 psi

Electrical data for pressure measurement device

Supply voltage: 12–30 V DC

Output signal: 4–20 mA, two-wire

Error of measurement: $\pm 1\%$ FS (100 psi and 6 bar, according to DIN EN 61298-2)
 $\pm 1.5\%$ FS (30 psi and 2.5 bar, according to DIN EN 61298-2)

Jump response time:	Jump	response time
	10–90% of measuring range	Typically 70 ms
	5–15% of measuring range	Typically 50 ms
	45–55% of measuring range	Typically 50 ms
	85–95% of measuring range	Typically 50 ms

Duty cycle: Continuous duty

Reverse polarity protection: yes

Short-circuit resistance: yes

Input current: max. 22 mA

Ambient conditions: Use only in dry environments (only relevant for UL)

Height: Up to 2000 m (above sea level)

Relative air humidity: Maximum 95%, non-condensing

Degree of contamination: 3 (pollution degree)

Note regarding supply voltage in chapters 6.8.1 to 6.8.4 below (only relevant to UL):

- Class 2 power supply units in accordance with UL 1310.
- Safety extra-low voltage/limited power source.
- Safety extra-low voltage/limited energy circuits.

One of the three options listed above **must** be implemented by the customer.

Pressure

Measuring range: 0–30 psi (code P and JK)
 0–2.5 bar (code B and JK)
 0–100 psi (code P and BK)
 0–6 bar (code B and BK)

Product conformity

Pressure Equipment Directive: 2014/68/EU

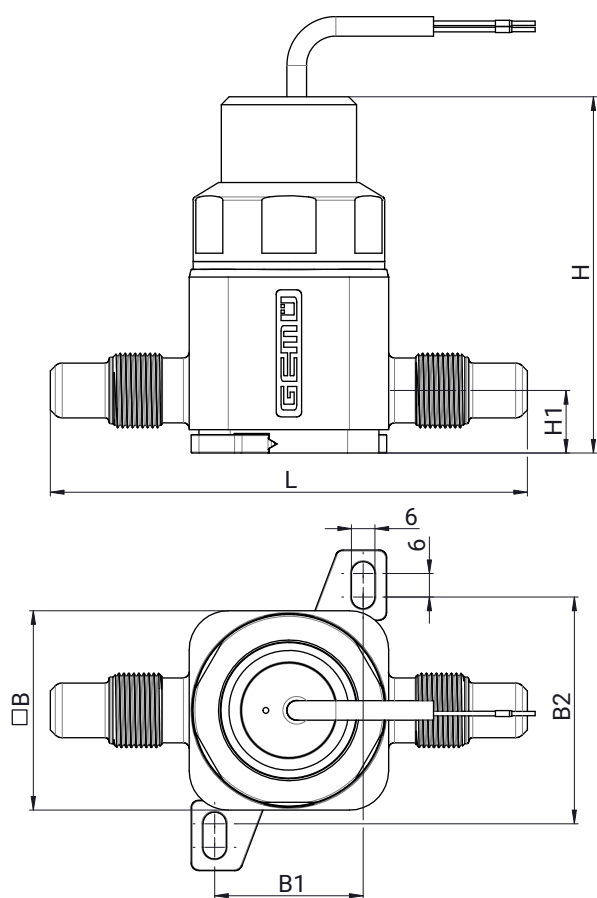
EMC Directive: 2014/30/EU

RoHS Directive: 2011/65/EU

UL approval: UL approval (recognised)
Component – Process – Control – Equipment, electrical
QUYX2, QUYX8

Dimensions

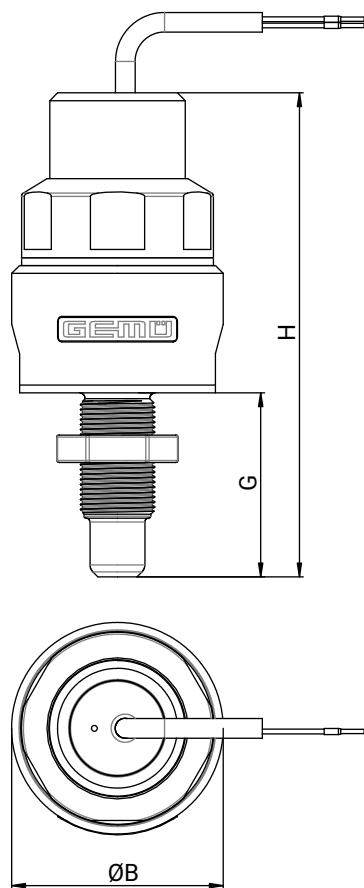
In-Line (Code L)



Connection	B	B1	B2	H	H1	L
3/8" Flare*	51.0	38.0	61.0	88.6	15.0	118.0
1/2" Flare*	51.0	38.0	61.0	91.1	16.0	122.0
3/4" Flare*	51.0	38.0	61.0	98.1	19.0	122.0
1" Flare*	55.0	43.0	65.0	106.8	25.0	165.0
3/8" Nexus*	51.0	38.0	61.0	90.6	17.0	81.0
1/2" Nexus*	51.0	38.0	61.0	94.1	19.0	86.0
3/4" Nexus*	51.0	38.0	61.0	102.1	23.0	95.0
1" Nexus*	55.0	43.0	65.0	110.1	28.42	109.0

Dimensions in mm

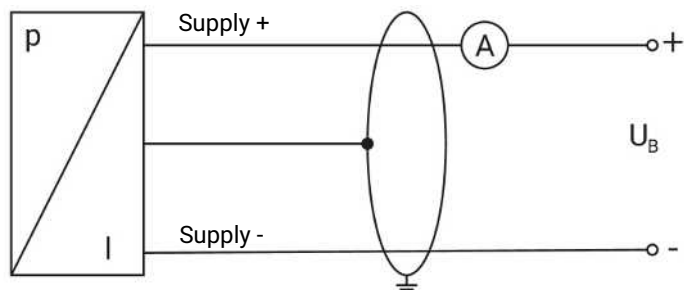
* Overall dimension (installation dimension) without union nuts

Dead-end (Code E)

Connection	B	G	H
1/4" Flare*	54.0	44.0	120.6
1/2" Flare*	54.0	47.0	123.6
1/4" Nexus*	54.0	11.0	87.6
1/2" Nexus*	54.0	17.5	94.1

Dimensions in mm

* Overall dimension (installation dimension) without union nuts

Electrical connection

Strand colour	Function	Supply voltage	Analogue signal
White	Supply +	12–30 V DC	4–20 mA
Brown	Supply -		
Green-yellow	Shield	-	-



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