

Pressure transducers DMU 04 industrial version



- SIL 2
- DMU 04 CP/MR for hygienic processes
- Small temperature error
- Optional: ATEX, field housing or high temperature version (up to 300 °C)



Application For applications requiring hygienic process connections, materials or processing, especially food technology, pharmaceutical and biotechnology applications.

Description Pressure transducers convert physical pressure into an electrical signal proportional to the pressure. DMU 04 is equipped with an oil-filled piezo-resistive silicon measuring cell. DMU 04 has safety integrity level SIL 2 (IEC 61508/61511).

Technical specifications

Measuring accuracy

Deviation from the characteristic curve according to IEC 60770 – limit point calibration (non-linearity, hysteresis, repeatability): $< \pm 0.35\%$ FSO (measuring ranges $\leq 0/400$ mbar $< \pm 0.5\%$ FSO)

Measuring ranges

Relative pressure:
-1/0 bar, 0/100 mbar to 0/40 bar
Absolute pressure:
0/400 mbar to 0/400 bar

Overpressure safety

At least 2 x FS
(burst pressure at least 5 x FS)

Operating temperature range

Medium: -10/+125 °C
Short-term (60 min) up to 150 °C

Ambient: -40/+85 °C
Storage: -40/+100 °C

Temperature error band

In compensated range
0–70 °C $< 0.75\%$ FSO
(0–50 °C ≤ 0.40 bar $< 1.5\%$ FSO)

Dynamic characteristics

Response time < 10 ms

Process connections

G $\frac{1}{2}$ B DIN 3852 with flush diaphragm
G1B DIN 3852 with flush diaphragm,
Clamp 1 $\frac{1}{2}$ "/1 $\frac{1}{2}$ "/2" ISO 2852,
conical dairy fitting DIN 11851
DN 25/40/50 (without union nut)

Materials

Housing: Stainless steel 316 L
Pressure connection: Stainless steel 316 L
Diaphragm: Stainless steel 316 L

Pressure transmission liquid

Food oil (FDA-compliant)

Output signal/supply voltage

4–20 mA, 2-wire DC 8–32 V
EX version DC 10–28 V
0–20 mA, 3-wire DC 14–30 V
0–10 V, 2-wire DC 14–30 V

Load

4–20 mA $< \frac{U_B - U_{Bmin}}{0.02 \text{ A}}$
0–20 mA ≤ 500 Ohm
0–10 V > 10 kOhm

Current input

4–20 mA < 25 mA
0–20 mA < 25 mA
0–10 V < 5 mA

Electrical protection

Short circuit proof and protected against reverse polarity

Electrical connection/degree of protection

Connector and junction box as per ISO 4400 (DIN 43650-A), IP 65

Safety integrity level

SIL 2 (IEC 61508/61511)

CE conformity (EMC)

EMC Directive 2004/108/EC

Options

- EX version (II 1 G Ex ia IIC T4)
- Other process connections
- Other electrical connections
- Field housing
- High temperature version
- Higher accuracy
- Union nut DN 25/40/50

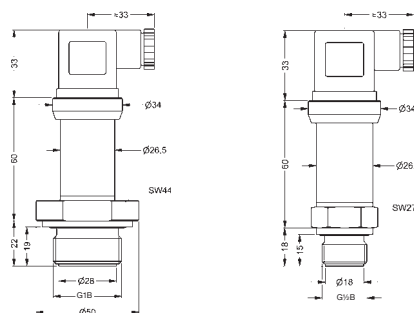


See page 455 for prices.

Pressure transducers DMU 04

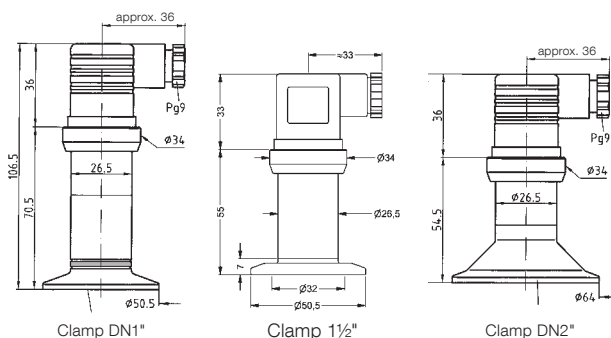
Dimensions (mm) and electrical connections

Threaded connections with flush diaphragm

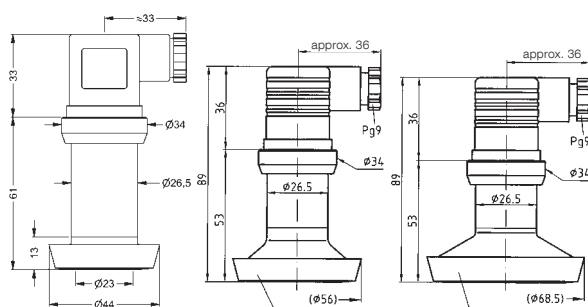


The EX version is 33 mm longer.

Clamp connections ISO 2852

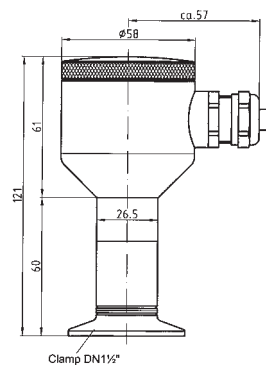


Conical dairy fitting DIN 11851



Conical dairy fitting DN 2:

Field housing

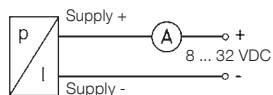


Clamp DN1 1/2"

Wiring diagram

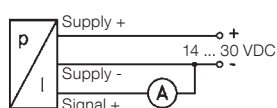
2-wire

4–20 mA

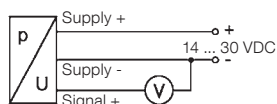


3-wire

0–20 mA



0–10 V



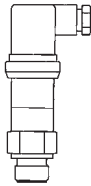
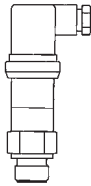
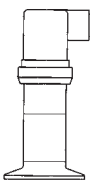
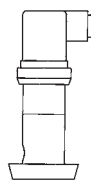
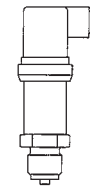
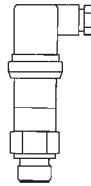
Pin assignment table

	Connector ISO 4400 (DIN 43650)	Cable colours (DIN 47100)
2-wire system: Supply + (4–20 mA) Supply – Earth	1 2 Earth pin	White Brown Cable shield
3-wire system: Supply + (0–10 V) Supply – (0–20 mA) Signal + Earth	1 2 3 Earth pin	White Brown Green Cable shield

The units are shipped with a detailed connection diagram.

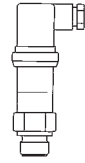
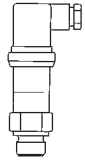
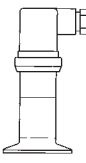
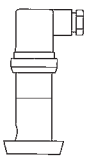
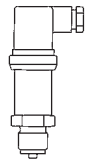
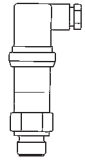
Pressure transducers DMU 04/DMU 05 P

DG: H

Type	DMU 04	DMU 04	DMU 04 CP	DMU 04 MR	DMU 05 P	DMU 05 P VM
Version						
Measuring principle	Piezo-resistive stainless steel measuring cell					
Measuring accuracy (IEC 60770)	0.35 % FSO (> 40 bar 0.5 % FSO)	0.35 % FSO (> 40 bar 0.5 % FSO)	0.35 % FSO (< 0.4 bar 0.5 % FSO)	0.35 % FSO (< 0.4 bar 0.5 % FSO)	0.1 % FSO	0.1 % FSO
Wetted parts	Stainless steel 316 L				Stainless steel 316 L/FKM	
Connection	G½B DIN 3852-E with flush diaphragm	G1B DIN 3852-E with flush diaphragm	Clamp 1" ISO 2852	Conical dairy fitting DIN 11851 DN 25 (without union nut)	G½B EN 837	G½B DIN 3852 with flush diaphragm
Safety integrity level	SIL 2	SIL 2	SIL 2	SIL 2		
Supply voltage	DC 8–32 V	DC 8–32 V	DC 8–32 V	DC 8–32 V	DC 10–32 V	DC 10–32 V
Output	4–20 mA	4–20 mA	4–20 mA	4–20 mA	4–20 mA	4–20 mA
System	2-wire	2-wire	2-wire	2-wire	2-wire	2-wire
Electrical connection	Connector and junction box as per ISO 4400 (DIN 43650-A)					
Measuring range	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
Price €						
-1/0 bar	---	31663	31686	31719	31742	---
-1/+1.5 bar	31647	31664	31687	31720	31743	---
-1/+3 bar	31648	31665	31688	31721	31744	---
-1/+5 bar	31649	31666	31689	31722	31745	---
Price €						
0/100 mbar	---	33021	---	---	33026	33027
0/160 mbar	---	33022	---	---	31747	31771
0/250 mbar	33016	31669	33023	33025	31748	31772
0/400 mbar	33017	31670	33024	31726	31749	31773
0/600 mbar	33018	31671	31694	31727	31750	31774
Price €						
0/1 bar	33019	31672	31695	31728	31751	31775
0/1.6 bar	33020	31673	31696	31729	31752	31776
0/2.5 bar	31651	31674	31697	31730	31753	31777
0/4 bar	31652	31675	31698	31731	31754	31778
0/6 bar	31653	31676	31699	31732	31755	31779
0/10 bar	31654	31677	31710	31733	31756	31780
0/16 bar	31655	31678	31711	31734	31757	31781
0/25 bar	31656	31679	31712	31735	31758	31782
Price €						
0/40 bar	31657	31680	31713	31736	31759	33028
0/60 bar	31658	31681	---	---	31760	---
0/100 bar	31659	31682	---	---	31761	---
0/160 bar	31660	31683	---	---	31762	---
0/250 bar	31661	31684	---	---	31763	---
0/400 bar	31662	31685	---	---	31764	---
0/600 bar	---	---	---	---	31765	---

Extra charges for DMU 04/DMU 05 P

DG: H

Type	DMU 04	DMU 04	DMU 04 CP	DMU 04 MR	DMU 05 P	DMU 05P VM
Version						
	Price €	Price €	Price €	Price €	Price €	Price €
EX protection II 1 G Ex ia IIC T4						
Clamp 1½" ISO 2852	---	---		---	---	---
Clamp 2" ISO 2852	---	---		---	---	---
Conical dairy fitting DIN 11851 DN 40	---	---	---		---	---
Conical dairy fitting DIN 11851 DN 50	---	---	---		---	---
Sep. union nut DIN 11851 DN 25	---	---	---		---	---
Sep. union nut DIN 11851 DN 40	---	---	---		---	---
Sep. union nut DIN 11851 DN 50	---	---	---		---	---
G1B with conical seal	---		---	---	---	---
Other process connections						
High temperature version up to +300 °C					---	---
Field housing (stainless steel 304)					---	---
Binder connector 723						
Fixed cable connection 2 metres						
Cable extension per metre						
Output 0–20 mA, 3-wire					---	---
Output 0–10 V, 3-wire					---	---
Other output signals						
Absolute pressure (measuring ranges according to data sheet)						
Measuring accuracy 0.25 % FSO					---	---
Calibration report (for measuring accuracy 0.25 % FSO)					---	---
RS 232 interface*	---	---	---	---		
Programming interface and software	---	---	---	---		

*Only in conjunction with Binder connector 723

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See chapter 14 for digital display units and signal processing.

