

Pressure transducers DMU 04 industrial version



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



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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 and > 40 bar $< \pm 0.5\%$ 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 $3 \times$ FS, except for
▪ 40 bar: Overload = 105 bar (burst pressure at least $5 \times$ FS), except for
▪ 25 bar: Burst pressure = 120 bar

Operating temperature range

Medium: $-10/+125$ °C
Short-term (60 min) up to 150 °C
Ambient: $-40/+85$ °C
In EX zone 0: $-20/+60$ °C
EX zone 1 and higher: $-20/+70$ °C
Storage: $-40/+100$ °C

Temperature error band

In compensated range
 $-20/+85$ °C $\leq \pm 0.75\%$ FSO/ 10 K
($0-50$ °C < 0.40 bar $\leq \pm 1.5\%$ FSO/ 10 K)

Dynamic characteristics

Response time
 2 -wire ≤ 10 ms
 3 -wire ≤ 3 ms

Process connections

$G\frac{1}{2}B$ DIN 3852 with flush diaphragm,
 $G1B$ DIN 3852 with flush diaphragm
Clamp $1\frac{1}{2}/2$ " 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: $R_{\max} = [(U_B - U_{Bmin}) / 0.02 \text{ A}] \Omega$
 $0-20$ mA $\leq 500 \Omega$
 $0-10$ V $> 10 \text{ k}\Omega$

Current input

$4-20$ mA < 25 mA
 $0-20$ mA < 25 mA
 $0-10$ V < 7 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

CE conformity (EMC)

EMC Directive 2014/30/EU

Options

- EX version 
(II 1G Ex ia IIC T4 Ga, II 1D Ex ia IIIC T85 °C Da)
- Other process connections
- Other electrical connections
- Field housing (stainless steel 303)

- High temperature version up to 300 °C
- Higher accuracy
- Union nut DN 25/40/50
- SIL 2 (IEC 61508/61511)
 2 -wire



See page 225 for prices.

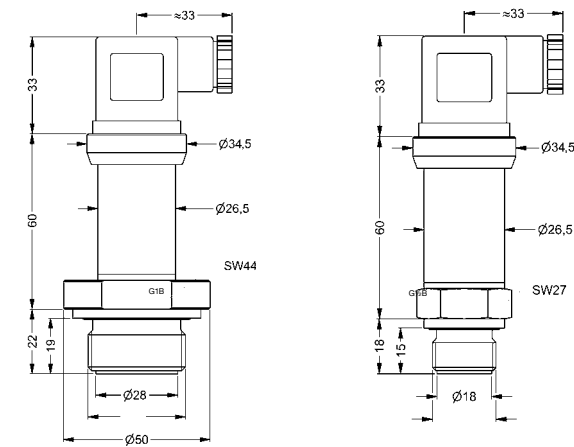


Pressure transducers DMU 04

Dimensions (mm) and electrical connections

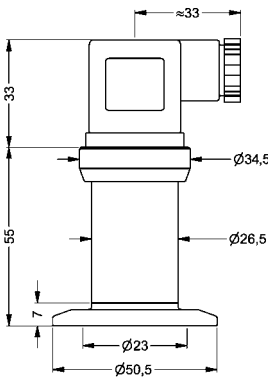
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Threaded connections with flush diaphragm



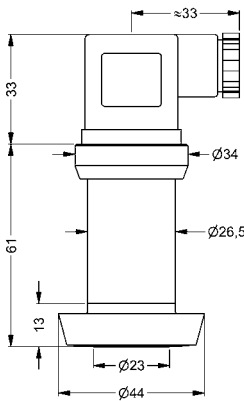
The SIL and EX versions are 26.5 mm longer.

Clamp connection ISO 2852



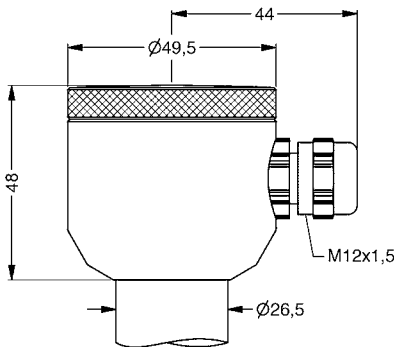
Clamp 1"

Conical dairy fitting DIN 11851



Conical dairy fitting DN 25

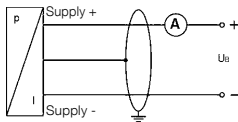
Field housing



Wiring diagram

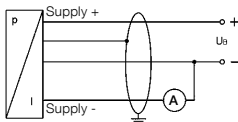
2-wire

4–20 mA

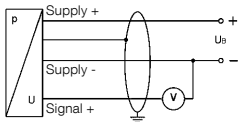


3-wire

0–20 mA



0–10 V



Pin assignment table

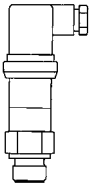
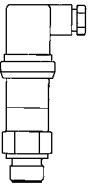
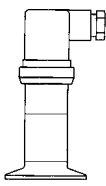
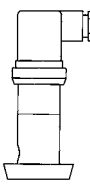
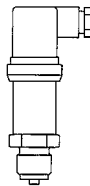
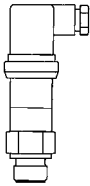
	Connector ISO 4400 (DIN 43650)	Cable col- ours (DIN 47100)
2-wire system: Supply + (4–20 mA) Supply – Earth	1 2 Earth pin	White Brown Yellow/green
3-wire system: Supply + (0–10 V) Supply – (0–20 mA) Signal Earth +	1 2 3 Earth pin	White Brown Green Yellow/green

The units are shipped with a detailed connection diagram.

Pressure transducers DMU 04/DMU 05 P

DG: H, PG: 4

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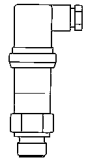
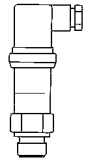
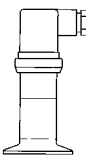
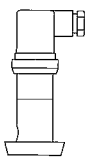
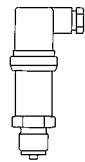
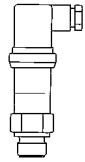
Type	DMU 04	DMU 04	DMU 04 CP	DMU 04 MR	DMU 05 P	DMU 05 P VM
Version						
Measuring principle	Piezo-resistive stainless steel measuring cell					
Measuring accuracy (IEC 60770)	0.35 % FSO (< 0.4 bar 0.5 % FSO > 40 bar 0.5 % FSO)	0.35 % FSO (< 0.4 bar 0.5 % FSO > 40 bar 0.5 % FSO)	0.35 % FSO (< 0.4 bar 0.5 % FSO)	0.35 % FSO (< 0.4 bar 0.5 % FSO)	0.1 % FSO	0.1 % FSO
Wetted parts	Stainless steel 316 L/FKM		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
Supply voltage	DC 8–32 V	DC 8–32 V	DC 8–32 V	DC 8–32 V	DC 12–36 V	DC 12–36 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	---	31735	31758	31782
Price €						
0/40 bar	31657	31680	---	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	---

Blue part no. = in-stock items

Extra charges for DMU 04/DMU 05 P

DG: H, PG: 4

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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 1G Ex ia IIC T4						
Clamp 1½" ISO 2852	---	---	No extra charge	---	---	---
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	On request	On request	On request	On request	On request	On request
High temperature version up to +300 °C					---	---
Field housing (stainless steel 303)					---	---
Binder connector 723, 5-pin						
Fixed cable connection 2 metres						
Cable extension per metre						
Output 0–20 mA, 3-wire					---	---
Output 0–10 V, 3-wire					---	---
Other output signals	On request	On request	On request	On request	On request	On request
Absolute pressure (measuring ranges according to data sheet)						
Measuring accuracy 0.25 % FSO					---	---
5-point measurement report (for measuring accuracy up to 0.25 % FSO)					---	---
RS 232 interface*	---	---	---	---		
Programming interface and software	---	---	---	---	On request	On request
SIL 2 (4–20 mA only)					---	---

* Only in conjunction with Binder connector 723

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See chapter 8 for digital display units and signal processing.

