

Pressure transducers DMU 05 P precision version



- Precision version with outstanding measurement performance
- For applications requiring superior measuring accuracy and long-term stability
- Options: ATEX version or RS 232 interface



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Application Electronic pressure measurement in applications requiring high measuring accuracy and long-term stability, such as process engineering, water treatment, laboratory applications as well as measurements of gas consumption and heat energy.

Description Pressure transducers convert physical pressure into an electrical signal proportional to the pressure. DMU 05 P is equipped with an oil-filled piezo-resistive silicon measuring cell. The intelligent DMU 05 pressure transducers are equipped with digital amplifier electronics (microprocessor and 16 bit A/D converter). DMU 05 P actively compensates for sensor-specific deviations (non-linearity and temperature error), allowing for superior measuring characteristics. DMU 05 can also be supplied with an optional digital RS 232 interface for setting offset, range and damping.

Technical specifications

Measuring accuracy

Deviation from the characteristic curve according to IEC 60770 – limit point calibration (non-linearity, hysteresis, repeatability): $< \pm 0.1 \% \text{ FSO}$

Long-term stability

$\leq +0.1 \% \text{ FSO/year}$

Measuring ranges

Relative pressure: 0/400 mbar to 0/600 bar
Absolute pressure: 0/400 mbar to 0/600 bar

Overpressure safety

At least 2 x FS, 600 bar at least 3.5 x FS
(burst pressure at least 5 x FS,
 $\geq 400 \text{ bar}$ at least 2 x FS)

Operating temperature range

Medium: $-25/+125 ^\circ\text{C}$
Ambient: $-25/+85 ^\circ\text{C}$
In EX zone 0: $-20/+60 ^\circ\text{C}$
EX zone 1 and higher: $-20/+65 ^\circ\text{C}$
Storage: $-40/+100 ^\circ\text{C}$

Temperature error band

In compensated range
 $-20/+80 ^\circ\text{C} \leq 0.02 \% \text{ FSO/10 K}$

Dynamic characteristics

Response time $< 5 \text{ ms}$

Process connection

G $\frac{1}{2}$ B (EN 837-1/7.3) or G $\frac{1}{2}$ DIN 3852 type E
with flush diaphragm
(0/400 mbar to 0/60 bar)

Materials

Housing: Stainless steel 316 L
Pressure connection: Stainless steel 316 L
Diaphragm: Stainless steel 316 L
Seal: FKM (Viton)

Pressure transmission liquid

Silicone oil

Output signal / supply voltage

4–20 mA DC 12–36 V
2-wire
EX version DC 14–28 V

Load

4–20 mA; $R_{\text{max}} = [(U_B - U_{B\text{min}}) / 0.02 \text{ A}] \Omega$

Current input

4–20 mA $< 25 \text{ mA}$

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 Directive 2014/30/EU
RoHS Directive 2011/65/EU
PED 2014/68/EU

Options

- RS 232 interface in conjunction with Binder connector 723, 7-pin (interface and software required)
- EX version  (II 1G Ex ia IIC T4 Ga, II 1D Ex ia IIIC T85 °C Da)

- Other process connections
- Other electrical connections
- Other seal materials



See page 223
for prices.

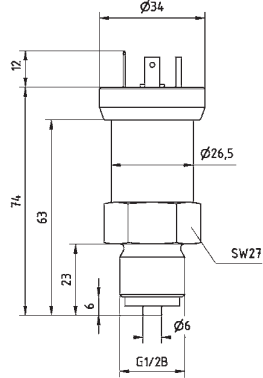
Pressure transducers DMU 05 P

Dimensions (mm) and electrical connections

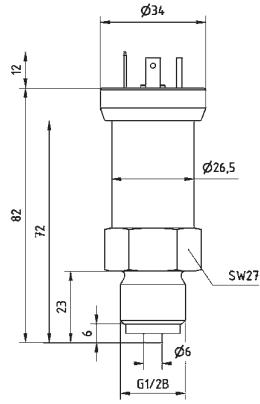
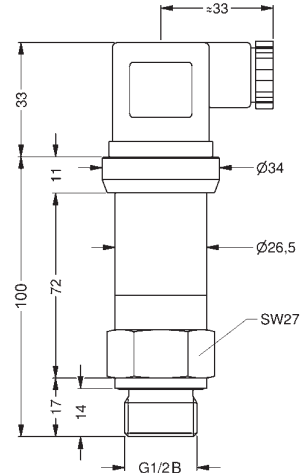
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Connection G $\frac{1}{2}$ B EN 837

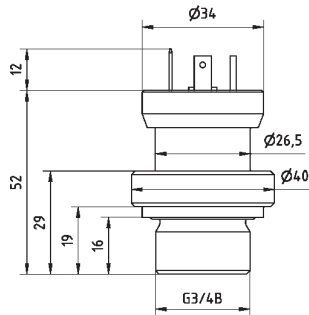
Version up to 0/40 bar:



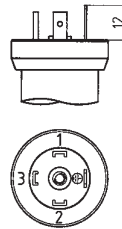
Version from 0/60 bar:

Connection G $\frac{1}{2}$ B DIN 3852 type E with flush diaphragmG $\frac{3}{4}$ B DIN 3852 type E

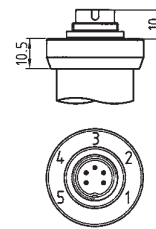
Screw-in version for level measurement



Electrical connections / cable outlet

ISO 4400
(DIN 43650-A)

Binder 723



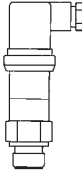
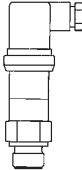
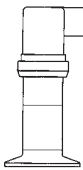
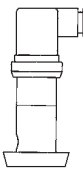
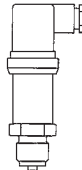
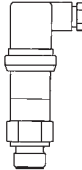
Pin assignment table

		Electrical connections			
		ISO 4400 (DIN 43650)	Binder 723 (5-pin)	Binder 723 (7-pin)	Cable outlet
2-wire system: Supply + Supply – Earth		1	3	3	White Brown Yellow/green
		2	4	1	
		Earth contact	5	2	
RS 232 ¹⁾ :	RxD	–	–	4	–
	TxD			5	
	GND			7	

¹⁾ Software, interface and cable must be ordered separately.
The units are shipped with a detailed connection diagram.

Pressure transducers DMU 04/DMU 05 P

DG: H, PG: 4

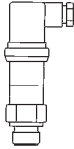
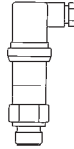
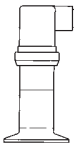
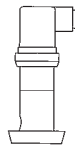
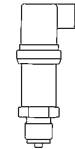
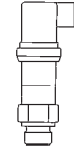
Type	DMU 04	DMU 04	DMU 04 CP	DMU 04 MR	DMU 05 P	DMU 05 P VM
Version						
Measuring principle	Piezo-resistive stainless steel measuring cell					
Measuring accuracy (IEC 60770)	0.35 % FSO (< 0.4 bar 0.5 % FSO > 60 bar 0.5 % FSO)	0.35 % FSO (< 0.4 bar 0.5 % FSO > 40 bar 0.5 % FSO)	0.35 % FSO (< 0.4 bar 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.

