Pressure transducers DMU 03
Industrial version

- For low pressure ranges
- Versions for relative pressure and absolute pressure
- Excellent long-term stability
- ATEX version (optional)
- Option SIL 2

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Application

For electronic pressure measurement in mechanical and plant engineering as well as process engineering applications. With flush diaphragm, the pressure transducers are also suitable for use with viscous, highly viscous media.

Description

Pressure transducers convert physical pressure into an electrical signal proportional to the pressure. DMU 03 is equipped with an oil-filled piezo-resistive silicon measuring cell. DMU 03 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): < ± 0.35 % FSO (measuring ranges 0/100 mbar to 0/400 mbar ≤ ±0.5 % FSO)

Long-term stability
≤ ±0.1 % FSO/year at reference conditions

Measuring ranges
Relative pressure: 0/100 mbar to 0/600 bar
Absolute pressure: 0/400 mbar to 0/600 bar
HP version: 0/1,000 bar to 0/2,200 bar

Overpressure safety
At least 3 x FS, except for
- 40 bar: Overload = 105 bar
- > 400 bar: Overload = at least 1.5

Burst pressure at least 5 x FS, except for
- 25 bar: Burst pressure = 120 bar
- 400 bar: Burst pressure = 1,250 bar
- > 600 bar: Burst pressure = at least 3 x FS

Operating temperature range

Medium:	-40/+125 °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
- P_N < 0.4 bar ≤ ± 1 % FSO in compensated range 0/70 °C
- P_N ≥ 0.4 bar to 40 bar ≤ ± 0.75 % FSO in compensated range -20/+85 °C
- P_N ≥ 60 bar to 600 bar ≤ ± 0.75 % FSO in compensated range 0/70 °C

Dynamic characteristics

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

Process connection
G½B (EN 837-1/7.3) / DIN 3852-E with flush diaphragm (0/100 mbar to 0/40 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, 2-wire	DC 8–32 V
ATEX version	DC 10–28 V
0–20 mA, 3-wire	DC 14–30 V
0–10 V, 3-wire	DC 14–30 V

Load
4–20 mA: $R_{max} = [(U_B - U_{Bmin}) / 0.02\ A]\ \Omega$
0–20 mA ≤ 500 Ω
0–10 V > 10 kΩ

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)
- Other seal materials
- Higher accuracy and overpressure safety
- Fitting of chemical seal
- SIL 2 (IEC 61508/61511) 2-wire

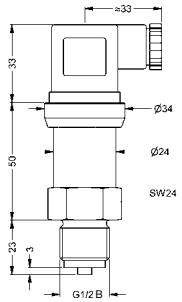
i See page 219 for prices.

SIL Protect your process!

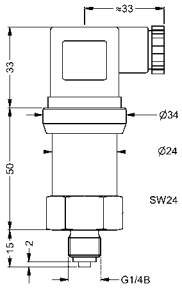
Pressure transducers DMU 03

Dimensions (mm) and electrical connections

Connection G½B
EN 837 and ISO 4400

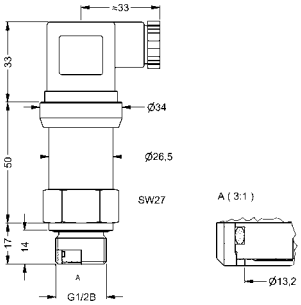


Connection G¼B
EN 837 and ISO 4400



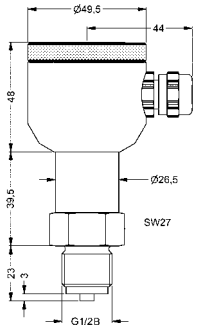
P_N 0/100 mbar to 0/40 bar: Length of housing 50 mm
P_N 0/60 bar to 0/600 bar: Length of housing 59 mm
EX version: Length of housing 83 mm

Connection G½B DIN 3852 type E with flush diaphragm



P_N 0/100 mbar to 0/40 bar: Length of housing 50 mm
P_N 0/60 bar to 0/600 bar: Length of housing 59 mm
EX version: Length of housing 83 mm

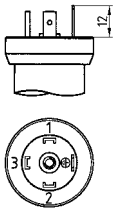
DMU 03 with G½B EN 837 and field housing



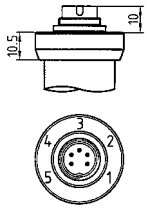
The Ex version is 26.5 mm longer.
(cable gland M12 x 1.5 brass, nickel-plated)

Electrical connections

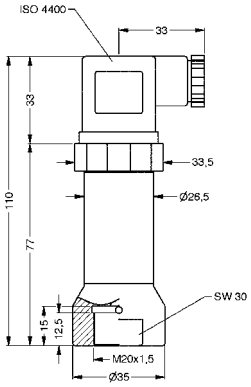
ISO 4400
(DIN 43650)



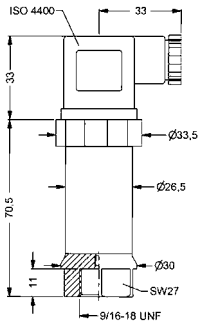
Binder 723



DMU 03 HD with M 20 x 1.5 female thread and ISO 4400



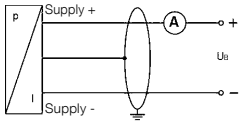
DMU 03 HD with 9/16-18 UNF female thread



Wiring diagram

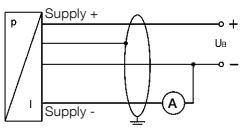
2-wire

4–20 mA

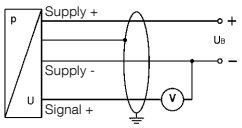


3-wire

0–20 mA



0–10 V



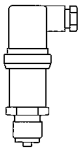
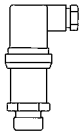
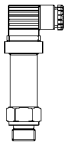
Pin assignment table

	Connector ISO 4400 (DIN 43650)	Binder Series 723	Cable colours (DIN 47100)
2-wire system:			
Supply +	1	3	White
(4–20 mA) Supply –	2	4	Brown
Earth	Earth pin	5	Yellow/green
3-wire system:			
Supply +	1	3	White
Supply –	2	4	Brown
Signal +	3	1	Green
Earth	Earth pin	5	Yellow/green

The units are shipped with a detailed connection diagram.

Pressure transducers DMU 03

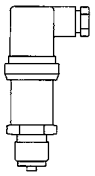
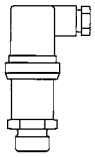
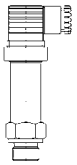
DG: H, PG: 4

Type	DMU 03	DMU 03 VM	DMU 03 HD
Version			
Measuring principle	Piezo-resistive stainless steel measuring cell		Thin film sensor
Measuring accuracy (IEC 60770)	0.35 % FSO (≤ 0.4 bar 0.5 % FSO)	0.35 % FSO (≤ 0.4 bar 0.5 % FSO)	0.35 % FSO
Wetted parts	Stainless steel 316 L		Stainless steel 630
Connection	G½B EN 837	G½B DIN 3852 type E with flush diaphragm Diaphragm	M 20 x 1.5 female thread
Supply voltage	DC 8–32 V	DC 8–32 V	DC 12–36 V
Output	4–20 mA	4–20 mA	4–20 mA
System	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.
Price €			
-1/0 bar	31634	---	---
-1/+1.5 bar	31635	---	---
-1/+3 bar	31636	---	---
-1/+5 bar	31637	---	---
Price €			
0/40 mbar	32024	---	---
0/60 mbar	32025	---	---
0/100 mbar	31638	31643	---
0/160 mbar	31639	31644	---
0/250 mbar	31145	31165	---
0/400 mbar	31146	31166	---
0/600 mbar	31147	31167	---
Price €			
0/1 bar	31148	31168	---
0/1.6 bar	31149	31169	---
0/2.5 bar	31150	31170	---
0/4 bar	31151	31171	---
0/6 bar	31152	31172	---
0/10 bar	31153	31173	---
0/16 bar	31154	31174	---
0/25 bar	31155	31175	---
0/40 bar	31156	32026	---
0/60 bar	31157	---	---
0/100 bar	31158	---	---
Price €			
0/160 bar	31159	---	---
0/250 bar	31160	---	---
0/400 bar	31161	---	---
0/600 bar	31162	---	---
0/1,000 bar	---	---	33402
0/1,600 bar	---	---	33403
0/2,200 bar	---	---	33404

Blue part no. = in-stock items

Extra charges for pressure transducers DMU 03

DG: H

Type	DMU 03	DMU 03 VM	DMU 03 HD
Version			
	Price €	**Price €**	**Price €**
EX protection II 1G Ex ia IIC T4			
Connection G¼B DIN 3852 type E		---	---
Connection G½B DIN 3852 type E	**No extra charge**	**Standard**	---
Connection G¼B EN 837 type E		---	---
Connection ¼-18 NPT		---	---
Connection ½-14 NPT		---	---
Other connections	**On request**	**On request**	**No extra charge**
Connection 9/16 UNF female thread	---	---	---
Field housing (stainless steel 303)			
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	**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)			---
Fitting of chemical seal	All measuring ranges, minimum range depends on design of chemical seal	---	---
SIL 2 (4–20 mA only)			

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See chapter 8 for digital display units and signal processing.

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See chapter 2 for chemical seals.