

# Pressure transducers DMU 03 Industrial version



- SIL 2
- For low pressure ranges
- Versions for relative pressure and absolute pressure
- Excellent long-term stability
- Optional ATEX version



**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):  $< \pm 0.35\%$  FSO (measuring ranges 0/100 mbar to 0/400 mbar  $\leq \pm 0.5\%$  FSO)

### Long-term stability

$\leq \pm 0.1\%$  FSO/year

### Measuring ranges

Relative pressure: 0/100 mbar to 0/600 bar  
Absolute pressure: 0/100 mbar to 0/600 bar

### Overpressure safety

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

### Operating temperature range

Medium: -40/+125 °C  
Ambient: -40/+85 °C  
Storage: -40/+100 °C

### Temperature error band

In compensated range  
0–70 °C  $< 1\%$  FSO

### Dynamic characteristics

Response time  $< 10$  ms

### Process connection

G $\frac{1}{2}$ B (EN 837-1/7.3 / DIN 3852)  
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  $\leq \frac{U_B - U_{Bmin}}{0.02 \text{ A}}$   
0–20 mA  $\leq 500 \text{ Ohm}$   
0–10 V  $> 10 \text{ kOhm}$

### Current input

4–20 mA  $< 25 \text{ mA}$   
0–20 mA  $< 25 \text{ mA}$   
0–10 V  $< 5 \text{ mA}$

### 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

### Safety integrity level

SIL 2 (IEC 61508/61511) 2-wire only

### CE conformity (EMC)

EMC Directive 2004/108/EC



See page 449 for prices.

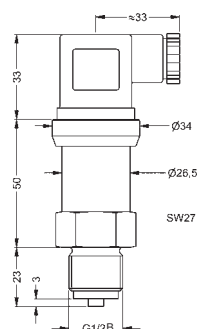
## Options

- EX version (II 1 G Ex ia IIC T4)
- Other process connections
- Other electrical connections
- Field housing (stainless steel 304)
- Other seal materials
- Higher accuracy
- Greater overpressure safety
- Fitting of chemical seal

# Pressure transducers DMU 03

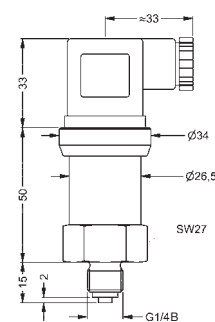
## Dimensions (mm) and electrical connections

Connection G $\frac{1}{2}$ B  
EN 837 and ISO 4400

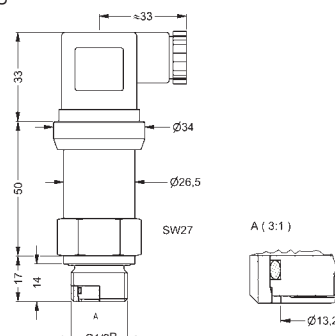


The Ex version is 20 mm longer.

Connection G $\frac{1}{4}$ B  
EN 837 and ISO 4400

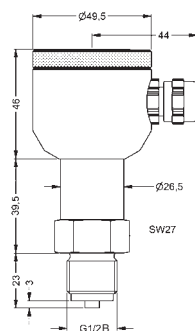


Connection G $\frac{1}{2}$ B DIN 3852 type E with  
flush diaphragm



The Ex version is 20 mm longer.

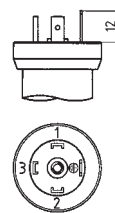
DMU 03 with G $\frac{1}{2}$ B EN 837 and field housing



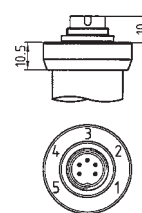
The Ex version is 26.5 mm longer.  
(cable gland M12 x 1.5 brass, nickel-plated)

Electrical connections

ISO 4400  
(DIN 43650)



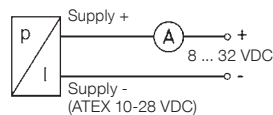
Binder 723



Wiring diagram

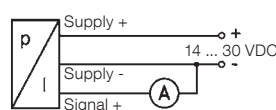
2-wire

4–20 mA

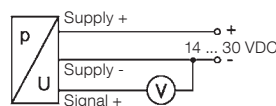


3-wire

0–20 mA



0–10 V



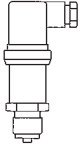
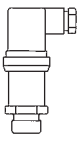
Pin assignment table

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

The units are shipped with a detailed connection diagram.

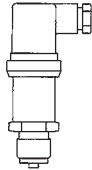
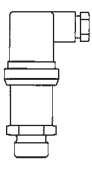
# Pressure transducers DMU 03

DG: H

Type	DMU 03	DMU 03 VM
Version		
Measuring principle	Piezo-resistive stainless steel measuring cell	
Measuring accuracy (IEC 60770)	0.35 % FSO (≤ 0.4 bar 0.5 % FSO)	0.35 % FSO (≤ 0.4 bar 0.5 % FSO)
Wetted parts	Stainless steel 316 L	
Connection	G $\frac{1}{2}$ B EN 837	G $\frac{1}{2}$ B DIN 3852 type E with flush diaphragm
Safety integrity level	SIL 2	
Supply voltage	DC 8–32 V	DC 8–32 V
Output	4–20 mA	4–20 mA
System	2-wire	2-wire
Electrical connection	Connector and junction box as per ISO 4400 (DIN 43650-A)	
Measuring range	Part no.	Part no.
<b>Price €</b>		
-1/0 bar	31634	---
-1/+1.5 bar	31635	---
-1/+3 bar	31636	---
-1/+5 bar	31637	---
<b>Price €</b>		
0/40 mbar	---	---
0/60 mbar	---	---
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
<b>Price €</b>		
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	---
<b>Price €</b>		
0/160 bar	31159	---
0/250 bar	31160	---
0/400 bar	31161	---
0/600 bar	31162	---

# Extra charges for pressure transducers DMU 03

DG: H

Type	DMU 03	DMU 03 VM
Version		
	<b>Price €</b>	<b>Price €</b>
EX protection II 1 G Ex ia IIC T4		
Connection G $\frac{1}{4}$ B DIN 3852 type E		---
Connection G $\frac{1}{2}$ B DIN 3852 type E		
Connection G $\frac{1}{4}$ B EN 837 type E		---
Connection $\frac{1}{4}$ -18 NPT		---
Connection $\frac{1}{2}$ -14 NPT		---
Other connections		
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)		
Fitting of chemical seal	All measuring ranges, minimum range depends on design of chemical seal	

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See chapter 14 for digital display units and signal processing.



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See chapter 10 for chemical seals.

