

# Pressure transducers DMU 01

## Standard version



- Proven ceramic technology
- No mechanical ageing of the measuring cell
- No transmission liquid
- Versions for relative pressure and absolute pressure
- Small temperature error



**Application** For electronic pressure measurement in industrial applications (such as hydraulic and pneumatic applications as well as mechanical and plant engineering).

**Description** Pressure transducers convert physical pressure into an electrical signal proportional to the pressure. DMU 01 is equipped with a piezo-resistive thick-film ceramic measuring cell.

### Technical specifications

#### Measuring accuracy

Deviation from the characteristic curve according to IEC 60770 – limit point calibration (non-linearity, hysteresis, repeatability):  $< \pm 0.5\%$  FSO (measuring range  $-1/0$  bar  $< \pm 1\%$  FSO)

#### Measuring ranges

Relative pressure:  $-1/0$  to  $0/400$  bar  
Absolute pressure:  $0/1$  to  $0/400$  bar

#### Overpressure safety

At least  $1.5 \times$  FS  
(burst pressure at least  $2 \times$  FS)

#### Operating temperature range

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

#### Temperature error band

In compensated range  
 $-25/+85$  °C  $\leq \pm 0.3\%$  FSO/10 K

#### Dynamic characteristics

Response time  
2-wire  $< 10$  ms  
3-wire  $< 3$  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 (DMU 01 VM up to max.  $0/25$  bar)

#### Materials

Housing: Stainless steel 304  
Pressure connection: Stainless steel 304  
Diaphragm: Ceramic ( $Al_2O_3$  96 %)  
Seal: FKM (Viton)

#### Supply voltage

2-wire DC 8–32 V  
3-wire DC 14–30 V

#### Output signal

4–20 mA, 2-wire  
0–10 V, 3-wire

#### Load

4–20 mA  $\leq \frac{U_B - U_{Bmin}}{0.02 A}$   
0–10 V  $> 10$  kOhm

#### Current input

4–20 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, EN 175301-803), IP 65)

#### CE conformity (EMC)

EMC Directive 2004/108/EC

### Options

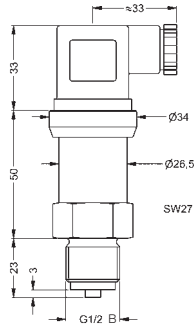
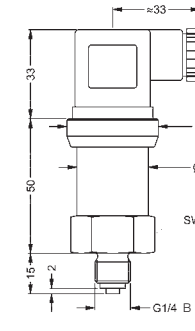
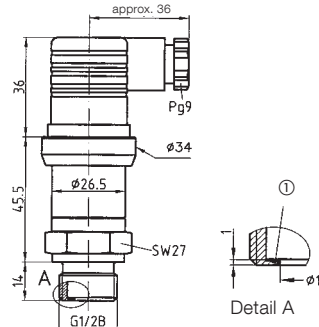
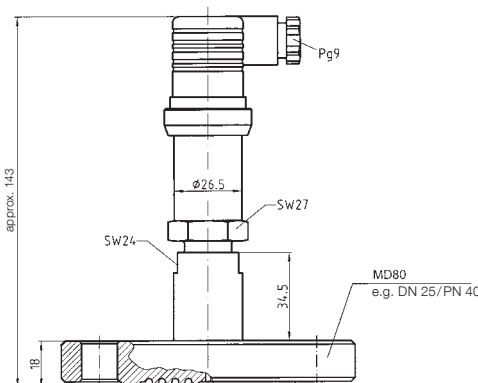
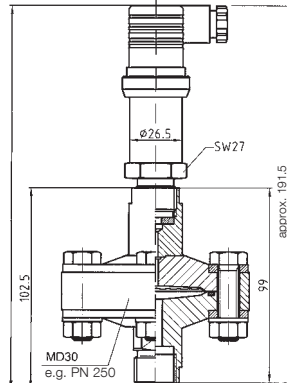
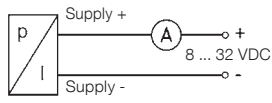
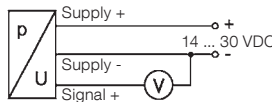
- Fixed cable connection
- Other output signals
- Other connection threads
- Fitting of chemical seal (measuring range  $\geq 0/10$  bar)



See page 436 for prices.

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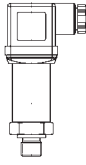
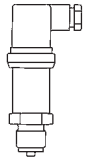
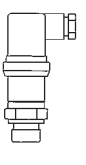
## Dimensions (mm) and electrical connections

<p>Connection G1/2B EN 837</p>  <p>Connection G1/4B EN 837</p> 	<p>DMU 01 VM with connection G1/2B DIN 3852 type E with flush diaphragm DMU 01 VM</p>  <p>① Flat gasket FKM (Viton)</p>																											
<p>With chemical seal MD 80 – flange connection EN 1092-1</p>  <p>MD80 e.g. DN 25/PN 40</p>	<p>With chemical seal MD 30 – connection G1/2B</p>  <p>MD30 e.g. PN 250</p>																											
<p>Wiring diagram</p> <p>2-wire 4–20 mA</p>  <p>3-wire 0–10 V</p> 	<p>Pin assignment table</p> <table border="1"> <thead> <tr> <th></th> <th></th> <th>Connector ISO 4400</th> <th>Cable colours (DIN 47100)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">2-wire system: (4–20 mA)</td> <td>Supply +</td> <td>1</td> <td>White</td> </tr> <tr> <td>Supply –</td> <td>2</td> <td>Brown</td> </tr> <tr> <td>Earth</td> <td>Earth pin</td> <td>Cable shield</td> </tr> <tr> <td rowspan="4">3-wire system: (0–10 V)</td> <td>Supply +</td> <td>1</td> <td>White</td> </tr> <tr> <td>Supply –</td> <td>2</td> <td>Brown</td> </tr> <tr> <td>Signal +</td> <td>3</td> <td>Green</td> </tr> <tr> <td>Earth</td> <td>Earth pin</td> <td>Cable shield</td> </tr> </tbody> </table>			Connector ISO 4400	Cable colours (DIN 47100)	2-wire system: (4–20 mA)	Supply +	1	White	Supply –	2	Brown	Earth	Earth pin	Cable shield	3-wire system: (0–10 V)	Supply +	1	White	Supply –	2	Brown	Signal +	3	Green	Earth	Earth pin	Cable shield
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The units are shipped with a detailed connection diagram.

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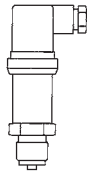
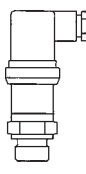
DG: H

Type	DMU 01 K	DMU 01	DMU 01 VM
Version			
Measuring principle	Piezo-resistive thick film ceramic measuring cell		
Measuring accuracy (IEC 60770)	1 % FSO	0.5 % FSO (-1/0 bar 1 % FSO)	0.5 % FSO
Wetted parts	Ceramic/stainless steel 304		
Connection	G $\frac{1}{4}$ B DIN 3852 type E	G $\frac{1}{2}$ B EN 837	G $\frac{1}{2}$ DIN 3852 type E with flush diaphragm
Safety integrity level			SIL 2
Supply voltage	DC 8–32 V	DC 8–32 V	DC 8–32 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.
<b>Price €</b>			
-1/0 bar	---	<b>31114</b>	31619
-1/+1.5 bar	31608	31616	31620
-1/+3 bar	31609	31617	31621
-1/+5 bar	31610	31618	31622
<b>Price €</b>			
0/1 bar	---	<b>31115</b>	31623
0/1.6 bar	31511	31116	31624
0/2.5 bar	31512	<b>31117</b>	31625
0/4 bar	31513	<b>31118</b>	31626
0/6 bar	31514	<b>31119</b>	31627
0/10 bar	31515	<b>31120</b>	31628
0/16 bar	31516	<b>31121</b>	31629
0/25 bar	31517	<b>31122</b>	31630
0/40 bar	31518	31123	---
0/60 bar	31611	31124	---
0/100 bar	31612	31125	---
<b>Price €</b>			
0/160 bar	31613	<b>31126</b>	---
0/250 bar	31614	<b>31127</b>	---
0/400 bar	---	<b>31128</b>	---
0/600 bar	---	---	---

\* Delivery only in packing units of 10 pieces per measuring range

# Extra charges for pressure transducers DMU 01

DG: H

Type	DMU 01	DMU 01 VM
Version		
	<b>Price €</b>	<b>Price €</b>
Connection G½B DIN 3852 type E		
Connection G¼B EN 837 type E		
Connection ¼-18 NPT		
Connection ½-14 NPT		
Other connections		
Suitable for oxygen ( $\leq 25$ bar)		
Fixed cable connection 2 metres		
Cable extension per metre		
Output 0–10 V, 3-wire		
Other output signals		
Absolute pressure (measuring ranges according to data sheet)		
Fitting of chemical seal	For measuring range $\geq 0/10$ bar	

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See chapter 15 for digital display units and signal processing.



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See chapter 10 for chemical seals.

