

Pressure transducers DMU 01

Standard version

3



- 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 $2 \times$ FS, except for:

- 250 bar: Overload 400 bar
- 400 bar: 650 bar

(burst pressure at least $3 \times$ FS, except 400 bar: burst pressure = 1,000 bar)

Operating temperature range

Medium: $-25/+125$ °C
Ambient: $-25/+85$ °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

$G_{1/2}B$ (EN 837-1/7.3) or $G_{1/2}B$ DIN 3852 type E with flush diaphragm
(DMU 01 VM up to max. $0/25$ bar, enquire for absolute pressure ranges)

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

2-wire: $R_{max} = [(U_B - U_{Bmin}) / 0.02 A] \Omega$
3-wire: $R_{min} = 10 k\Omega$

Current input

4–20 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, EN 175301-803), IP 65)

CE conformity (EMC)

EMC Directive 2014/30/EU

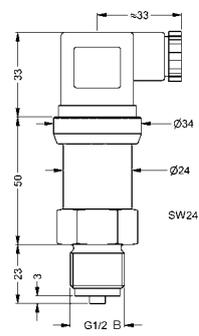
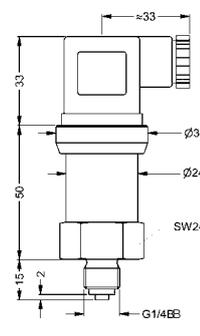
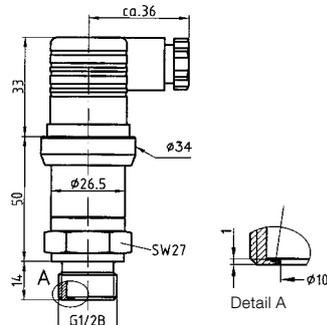
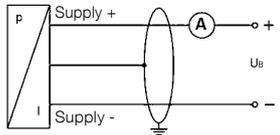
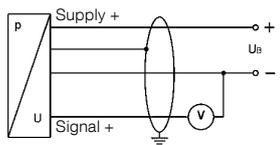
- Options**
- Fixed cable connection
 - Other output signals
 - Other connection threads
 - SIL 2 (IEC 61508/61511) 2-wire, for DMU 01 VM



i See page 206 for prices.

Pressure transducers DMU 01

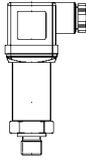
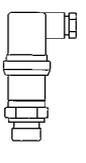
Dimensions (mm) and electrical connections

<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>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>Connector ISO 4400</th> <th>Cable colours (DIN 47100)</th> </tr> </thead> <tbody> <tr> <td>2-wire system: Supply + (4–20 mA) Supply – Earth</td> <td>1 2 Earth pin</td> <td>White Brown Yellow/green</td> </tr> <tr> <td>3-wire system: Supply + (0–10 V) Supply – Signal + Earth</td> <td>1 2 3 Earth pin</td> <td>White Brown Green Green/yellow</td> </tr> </tbody> </table>		Connector ISO 4400	Cable colours (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 – Signal + Earth	1 2 3 Earth pin	White Brown Green Green/yellow
	Connector ISO 4400	Cable colours (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 – Signal + Earth	1 2 3 Earth pin	White Brown Green Green/yellow								

The units are shipped with a detailed connection diagram.

Pressure transducers DMU 01

DG: H, PG: 4

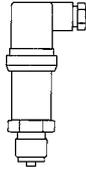
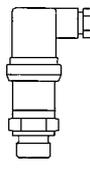
Type	DMU 01 K	DMU 01	DMU 01 VM
Version			
Measuring principle	Piezo-resistive thick-film ceramic measuring cell.		
Measuring accuracy (IEC 60770)	1 % FSO	0.5 % FSO (-1/0 bar 1 % FSO)	0.5 % FSO
Wetted parts	Ceramic/stainless steel 304/FKM		
Connection	G $\frac{1}{4}$ B DIN 3852 type E	G $\frac{1}{2}$ B EN 837	G $\frac{1}{2}$ DIN 3852 type E with flush diaphragm
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.
Price €			
-1/0 bar	---	31114	31619
-1/+1.5 bar	31608	31616	31620
-1/+3 bar	31609	31617	31621
-1/+5 bar	31610	31618	31622
Price €			
0/1 bar	---	31115	31623
0/1.6 bar	31511	31116	31624
0/2.5 bar	31512	31117	31625
0/4 bar	31513	31118	31626
0/6 bar	31514	31119	31627
0/10 bar	31515	31120	31628
0/16 bar	31516	31121	31629
0/25 bar	31517	31122	31630
0/40 bar	31518	31123	---
0/60 bar	31611	31124	---
0/100 bar	31612	31125	---
Price €			
0/160 bar	31613	31126	---
0/200 bar	---	31878	--
0/250 bar	31614	31127	---
0/400 bar	---	31128	---
0/600 bar	---	---	---

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

Blue part no. = in-stock items

Extra charges for pressure transducers DMU 01

DG: H

Type	DMU 01	DMU 01 VM
Version		
	Price €	Price €
Connection G $\frac{1}{2}$ B DIN 3852 type E	---	Standard
Connection G $\frac{1}{4}$ B EN 837 type E		---
Connection $\frac{1}{4}$ -18 NPT		---
Connection $\frac{1}{2}$ -14 NPT		---
Other connections	On request	On request
Suitable for oxygen (≤ 25 bar)		
Fixed cable connection 2 metres		
Cable extension per metre		
Output 0–10 V, 3-wire		
Other output signals	On request	On request
Absolute pressure (measuring ranges according to data sheet)		
SIL 2 (4–20 mA only)	---	

3

i

See chapter 8 for digital display units and signal processing.

