

Pressure transducers

DMU 02 Vario (flush)



- Ideal for hygienic processes
- Connection technology with numerous versions
- Extremely resistant to shock, pulsation and vibration
- Best dynamic pressure resistance at high load changes
- Zero calibration via magnet



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Application For electronic pressure measurement in mechanical and plant engineering applications, gas applications, medical technology. With flush diaphragm, the pressure transducers are also suitable for use with viscous, highly viscous or crystallising media.

Description Pressure transducers convert physical pressure into an electrical signal proportional to the pressure. DMU 02 Vario is equipped with a piezo-resistive polysilicon thin-film measuring cell. DMU 02 Vario is available in a virtually unlimited number of versions. All standard and customer-specific connections can be connected to the electronic precision measuring system. All standard electrical connection types are available. The zero point can be corrected from the outside via a permanent magnet after pressure has been supplied and within a given time window.

Technical specifications

Measuring accuracy

Deviation from the characteristic curve according to IEC 60770 – limit point calibration (non-linearity, hysteresis, repeatability): ± 0.3 % FSO

Measuring ranges

Relative pressure:
-1/0 to -1/+24 bar
0/1 bar to 0/600 bar

Overpressure safety

≤ 250 bar at least 2 x FS
(burst pressure at least 3 x FS)
> 250 bar at least 1.5 x FS
(burst pressure at least 2 x FS)

Operating temperature range

Medium: -10/+125 °C
Ambient: -10/+105 °C
Storage: -10/+125 °C

Temperature error band

In compensated range
 $0/70$ °C < 1.5 % FSO/10 K

Dynamic characteristics

Response time < 20 ms

Process connection

G $\frac{1}{2}$ B DIN 3852 A with O ring (FBO);
Clamp (CP); dairy fitting (MR);
Varivent (VT); NEUMO BioControl (BC);
Flange connection (FT)

Material

Housing: Stainless steel 304
Pressure connection: Stainless steel 316 L
Seal: Without
Diaphragm: Stainless steel 316 L

Pressure transmission liquid

Multi-grade oil, FDA-compliant

Supply voltage

DC 9–32 V

Output signal

4–20 mA, 2-wire

Load

$4-20 \text{ mA} < \frac{U_B - U_{Bmin}}{0.02 \text{ A}}$

Current input

< 25 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

- Other process connections
- Other electrical connections
- Field housing (stainless steel)
- Filling for oxygen
- Other output signals
- Customer-specific setting (damping, unit)

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See page 212 for dimensions.
See page 213 for prices.

Pressure transducers DMU 02 Vario

Dimensions (mm) and electrical connections

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Connection G1/2B EN 837

Wiring diagram

4–20 mA, 2-wire





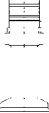
Setting the zero point

Modular system for great variety of versions

Connector	 ISO 4400	 Field housing	 M12 x 1	 M12 x 1 with junction box	
Housing	Transducer electronics 				
Thermal isolation	Direct mounting 	Cooling element up to 180 °C 		Capillary 	
Process connections	G1/2B EN 837 	G1/2B DIN 3852-E 	1/2–14 NPT 	VCR 9/16-18 UNF 	Chemical seals (e.g. MD 40)

Pressure transducers DMU 02/DMU 02 Vario

DG: H, PG: 4

Type	DMU 02	DMU 02 HD High pressure	DMU 02 Vario Programmable*	DMU 02 Vario FBO flush with O ring	DMU 02 Vario CP Clamp
Version					
Measuring principle	Piezo-resistive polysilicon stainless steel measuring cell (thin-film)				
Measuring accuracy (IEC 60770)	0.5 % FSO	0.5 % FSO	0.3 % FSO		
Wetted parts	Stainless steel 630	Stainless steel 630	Stainless steel 630/316 L	Stainless steel 316 L/ FKM	Stainless steel 316 L
Connection	G½B EN 837	M18 x 1.5 male	G½B EN 837	G½B DIN 3852-A	ISO 2852 1"
Supply voltage	DC 9–32 V				
Output	4–20 mA				
System	2-wire				
Electrical connection	Connector and junction box as per ISO 4400 (DIN 43650-A)				
Offset error compensation	---	---	Subsequent zero calibration via magnet from the outside		
Measuring range	Part no.	Part no.	Part no.	Part no.	Part no.
Price €					
-1/0 bar	32801	---	32833	32863	32892
-1/+1.5 bar	32802	---	32834	32864	32893
-1/+3 bar	32803	---	32835*	32865	32894
-1/+5 bar	32804	---	32836	32866	32895
-1/+9 bar	32805	---	32837*	32867	32896
-1/+24 bar	32806	---	32838*	32868	32897
Price €					
0/600 mbar	32807	---	32841	---	---
Price €					
0/1 bar	32808	---	32842*	32872	32901
0/1.6 bar	32809	---	32843	32873	32902
0/2.5 bar	32810	---	32844*	32874	32903
0/4 bar	32811	---	32845	32875	32904
0/6 bar	32812	---	32846	32876	32905
0/10 bar	32813	---	32847*	32877	32906
0/16 bar	32814	---	32848	32878	32907
0/25 bar	32815	---	32849	32879	32908
0/40 bar	32816	---	32850*	32880	32909
0/60 bar	32817	---	32851	32881	---
0/100 bar	32818	---	32852	32882	---
Price €					
0/160 bar	32819	---	32853*	32883	---
0/250 bar	32820	---	32854	32884	---
0/400 bar	32821	---	32855	32885	---
0/600 bar	32822	---	32856	32886	---
0/1,000 bar	32823	---	32857*	---	---
0/1,600 bar	---	32829	---	---	---
0/2,000 bar	---	32830	---	---	---

* Programmable turn down 1:4 via optional programming tool (no asterisk = fixed measuring range)

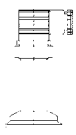
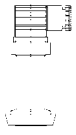
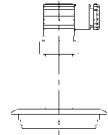
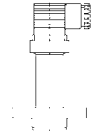
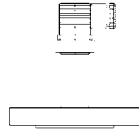
Blue part no. = in-stock items



See pages 215/216 for extra charges.

Pressure transducers DMU 02 Vario

DG: H, PG: 4

Type	DMU 02 Vario CP Clamp	DMU 02 Vario MR Dairy fitting	DMU 02 Vario VT VARIVENT®	DMU 02 Vario BC NEUMO BioControl®	DMU 02 Vario FL Flange
Version					
Measuring principle	Piezo-resistive polysilicon stainless steel measuring cell (thin-film)				
Measuring accuracy (IEC 60770)	0.3 % FSO				
Wetted parts	Stainless steel 316 L	Stainless steel 316 L	Stainless steel 316 L	Stainless steel 316 L	Stainless steel 316 L
Connection	ISO 2852 1½"	DIN 11851 DN 25	VARIVENT® F (DN 25 and 1")	NEUMO BioControl® DN 25	EN 1092-1 type B1 DN 25 PN 40
Supply voltage	DC 9–32 V				
Output	4–20 mA				
System	2-wire				
Electrical connection	Connector and junction box as per ISO 4400 (DIN 43650-A)				
Offset error compensation	Subsequent zero calibration via magnet from the outside				
Measuring range	Part no.	Part no.	Part no.	Part no.	Part no.
Price €					
-1/0 bar	33080	32915	32938	32960	32981
-1/+1.5 bar	33081	32916	32939	32961	32982
-1/+3 bar	33082	32917	32940	32962	32983
-1/+5 bar	33083	32918	32941	32963	32984
-1/+9 bar	33084	32919	32942	32964	32985
-1/+24 bar	33085	32920	32943	32965	32986
Price €					
0/1 bar	33089	32924	32947	32969	32990
0/1.6 bar	33090	32925	32948	32970	32991
0/2.5 bar	33091	32926	32949	32971	32992
0/4 bar	33092	32927	32950	32972	32993
0/6 bar	33093	32928	32951	32973	32994
0/10 bar	33094	32929	32952	32974	32995
0/16 bar	33095	32930	32953	32975	32996
0/25 bar	33096	32931	32954	---	32997
0/40 bar	33097	32932	---	---	32998
0/60 bar	---	---	---	---	On request
0/100 bar	---	---	---	---	On request
0/160 bar	---	---	---	---	On request
0/250 bar	---	---	---	---	On request











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See pages 215/216 for extra charges.

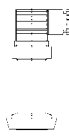
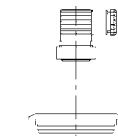
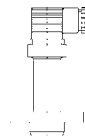
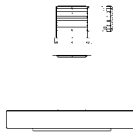
Extra charges for DMU 02/DMU 02 Vario

DG: H, PG: 4

Type	DMU 02	DMU 02 HD High pressure	DMU 02 Vario Programmable	DMU 02 Vario FBO flush with O ring	DMU 02 Vario CP Clamp
Version					
					
	Price €	Price €	Price €	Price €	Price €
EX protection II 1G Ex ia IIC T4		---	---	---	---
Connection G $\frac{1}{4}$ B EN 837		---	---	---	---
Connection G $\frac{1}{2}$ B DIN 3852 type E	No extra charge	---	No extra charge	---	---
Connection G $\frac{1}{4}$ B DIN 3852 type E		---		---	---
Connection G $\frac{1}{2}$ B DIN 3852 type A	On request	---	On request	---	---
Connection G $\frac{1}{4}$ B DIN 3852 type A	On request	---	On request	---	---
Connection $\frac{1}{4}$ -18 NPT		---		---	---
Connection $\frac{1}{2}$ -14 NPT		---		---	---
High pressure connection M20 x 1.5 female	---	No extra charge	---	---	---
Connection G $\frac{1}{2}$ B (flush DIN 3852-A)	---	---	---	No extra charge	---
Connection G1B (flush DIN 3852 A)	---	---	---	No extra charge	---
Connection G1B (flush with O ring DIN 3852 A)	---	---	---	On request	---
Connection clamp ISO 2852 2"	---	---	---	---	---
Connection clamp ISO 2852 2 $\frac{1}{2}$ "	---	---	---	---	---
Other connections and designs (chemical seals)	---	---	See chapter 2	---	---
Other materials	On request				
Coatings	On request				
Surface roughness $\leq 0.4 \mu\text{m}$ for diaphragm	---	---	---		
Weld-in socket G $\frac{1}{2}$ " for DMU 02 Vario FBO	---	---	---		---
High temperature version up to 180 °C		---			
Capillary tube with spiral hose	---	---	See page 190	See page 190	See page 190
Cleaned for oxygen				---	---
Socket DIN 43650-C	No extra charge	No extra charge	---	---	---
Field housing (stainless steel)	---	---			
Circular connector M12x1, 4-pin, A-coded DIN-EN 61076-2-101		On request			
Fixed cable connection 2 metres			---	---	---
Cable extension per metre			---	---	---
Right angle socket M12 x 1.5 with 2 m PUR cable, shielded	---	---			
Right angle socket M12 x 1.5 with 5 m PUR cable, shielded	---	---			
Output 0–20 mA, 3-wire			---	---	---
Output 0–10 V, 3-wire			---	---	---
CANopen 2.0A	On request	On request	---	---	---
Ratiometric 0.5–4.5 V @ 5 VDC			---	---	---
Other output signals	On request	On request	On request	On request	On request
Calibration report (for measuring accuracy up to 0.3 % FSO)					
Programming hardware and software for DMU 02 Vario	---	---		---	---

Extra charges for DMU 02/DMU 02 Vario

DG: H, PG: 4

Type	DMU 02 Vario MR Dairy fitting	DMU 02 Vario VT VARIVENT®	DMU 02 Vario BC NEUMO BioControl®	DMU 02 Vario FL Flange
Version				
	Price €	Price €	Price €	Price €
Connection DIN 11851 DN 32 / PN 40		---	---	---
Connection DIN 11851 DN 40 / PN 40*		---	---	---
Connection DIN 11851 DN 50 / PN 25*		---	---	---
Connection DIN 11851 DN 65 / PN 25		---	---	---
Connection DIN 11851 DN 80 / PN 25		---	---	---
Connection VARIVENT® type N DN 40-125 and 1½"-6"	---		---	---
NEUMO BioControl® DN 50	---	---		---
NEUMO BioControl® DN 65	---	---		---
NEUMO BioControl® DN 80	---	---		---
Connection EN 1092-1 type B1 DN 40 PN 40	---	---		
Connection EN 1092-1 type B1 DN 50 PN 40	---	---		
Connection EN 1092-1 type B1 DN 80 PN 40	---	---		
Connection EN 1092-1 type B1 DN 100 PN 40	---	---		
Connection ASME B 16.5 DN 1" class 150	---	---		
Connection ASME B 16.5 DN 1½" class 150	---	---		
Connection ASME B 16.5 DN 2" class 150	---	---		
Connection ASME B 16.5 DN 3" class 150	---	---		
Connection ASME B 16.5 DN 4" class 150	---	---		
Other connections and designs	---	---	---	On request
Other materials	On request	On request	On request	On request
Coatings	On request	On request	On request	On request
Surface roughness ≤ 0.4 µm for diaphragm				
High temperature version up to 180 °C				
Capillary tube with spiral hose	See page 194.	P. 194	P. 194	P. 194
Cleaned for oxygen	---	---	---	---
Field housing (stainless steel)				
Circular connector M12 x 1, 4-pin, A-coded EN 61076-2-101				
Other output signals	On request	On request	On request	On request
5-point calibration report (for measuring accuracy up to 0.3 % FSO)				

* See extra charges DMU 04 for sep. union nut.

Blue part no. = in-stock items