

Pressure transducers DMU 14 DG/FG Ex

Intelligent precision version



DMU 14 DG Ex

- Version DMU 14 FG Ex with ATEX approval for zone 0
- Ideal for process engineering
- High accuracy of $\pm 0.1\%$
- Either die cast housing (DG) or field housing (FG)
- Turn down 1:10
- Local display

DMU 14 FG Ex



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Application The intelligent pressure transducer DMU 14 DG EX with die cast aluminium housing provides very high accuracy and a turn down function for measuring range selection and is an ideal solution for process engineering applications. The version DMU 14 FG EX with a stainless steel field housing is perfectly suitable for applications in the pharmaceutical and food industries. The devices come with HART® communication.

Description Pressure transducers convert physical pressure into an electrical signal proportional to the pressure. DMU 14 DG/FG EX is equipped with an oil-filled piezo-resistive silicon measuring cell.

Technical specifications

Measuring accuracy

Deviation from the characteristic curve according to IEC 60770 – limit point calibration (non-linearity, hysteresis, repeatability)
 $\leq \pm 0.1\%$ FSO
 $\leq \pm 0.2\%$ FSO with turn down $> 1:5$

Long-term stability

$\leq \pm 0.1\%$ x FSO/year at reference conditions

Display

LC display, 5-digit 7-segment main display
 Character height 8 mm, indication range $\pm 9,999$
 8-digit 14-segment additional display
 Character height 5 mm
 52-segment bar chart
 Accuracy: 0.1 %, ± 1 digit

Measuring ranges

Relative pressure: 0/0.4 to 0/600 bar
 Absolute pressure possible from 0/1 bar
 Vacuum ranges -1/+1; -1/+2; -1/+4 and -1/+10 bar

Overpressure safety

Up to 0/20 bar, at least 4 x FS
 0/40 to 0/400 bar, at least 2 x FS
 0/600 bar: Overload = 1,000 bar

Operating temperature range

Medium: -40/+125 °C
 Short-term (60 min) up to +150 °C
 Ambient: -20/+70 °C
 in EX zone 0 at p_{atm} 0.8 to 1.1 bar
 -20/+60 °C
 without display -40/+80 °C
 Storage: -30/+80 °C

Temperature error

$\leq \pm 0.2\%$ FSO x turn down
 in compensated range -20/+85 °C

Dynamic characteristics

100 ms (without consideration of electronic damping)

Process connection

G $\frac{1}{2}$ B (EN 837-1/7.3)

Materials

Housing DG: Aluminium die cast, powder-coated
 Housing FG: Stainless steel 316 L
 Pressure connection: Stainless steel 316 L
 Diaphragm: Stainless steel 316 L
 Seal: FKM

Pressure transmission liquid

Silicone oil
 (Option food oil – temp. of the medium -10/+125 °C)

Adjustable parameters

Electronic damping: 0/100 s
 Offset: 0/90 %
 Turn down (of span): 1:10

Output signal/supply voltage

4–20 mA, 2-wire DC 12–28 V
 with EX version/HART communication

Load

4–20 mA: $R_{max} = [(U_B - U_{Bmin})/0.02] \Omega$
 HART® communication $R_{min} = 250 \Omega$

Current input

Max. 25 mA

Electrical protection

Short circuit proof and protected against reverse polarity

Electrical connection

Cable gland M20 x 1.5

Degree of protection

IP 67 (EN 60529)



See page 243
for prices.

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Technical specifications

CE conformity


EMC Directive 2014/30/EU
Pressure Equipment Directive 2014/68/EU
(module A)
ATEX Directive 2014/34/EU
RoHS Directive 2011/65/EU

EX approval

IBExU15ATEX1059 X

DMU 14 FG Ex:

Ex II 1G Ex ia II C T4 Ga
and

 II 1D Ex ia III C T85 °C Da

DMU 14 DG Ex

Ex || 2G Ex ia || B T4 Gb
and

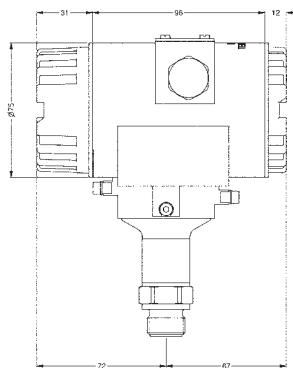
⚡ II 1D Ex ia III C T85 °C Da

Options

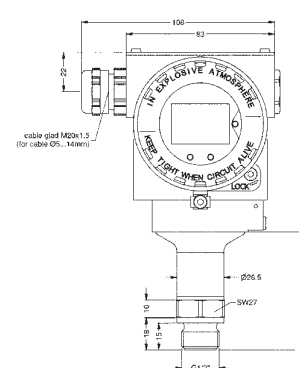
- Other process connections
- High temperature version up to 300 °C
(only for connection G½ DIN 3852 protruding diaphragm)

Dimensions (mm) and electrical connections

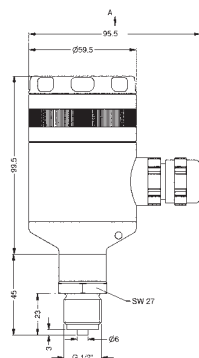
DMU 14 DG Ex



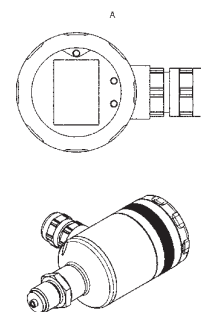
DMU 14 DG Ex



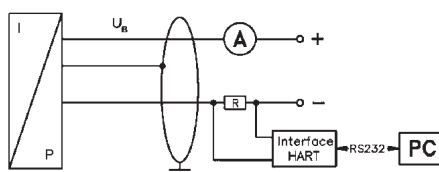
DMU 14 FG Ex





DMU 14 FG Ex



Wiring diagram

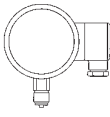
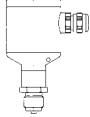
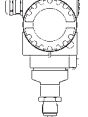


Pin assignment table

Electrical connections	Aluminium die cast housing:	Stainless steel field housing:
	Connection terminals (terminal cross section 2.5 mm ²)	Connection terminals (terminal cross section 1.5 mm ²)
Supply + Supply – Test	IN + IN – Test	IN + IN – –
Shield		

Pressure transducers DMU 13 – DMU 14

DG: H, PG: 4

Type	DMU 13	DMU 14 FG Ex	DMU 14 DG Ex
Version			
Housing Ø	100	60	75
Housing	Stainless steel	Stainless steel	Aluminium
Measuring accuracy	0.5 % FSO Pressure gauge: class 1.0	0.1 % FSO	0.1 % FSO
Wetted parts	Stainless steel 316 Ti/316 L	Stainless steel 316 L/FKM	Stainless steel 316 L/FKM
Connection	G½B	G½B	G½B
Supply voltage	DC 12–36 V	DC 12–28 V	DC 12–28 V
Output	4–20 mA	4–20 mA	4–20 mA
Measuring range	Part no.	Part no.	Part no.
Price €			
0/400 mbar	---	31977	31987
Price €			
-1/0 bar	---	---	---
0/0.6 bar	---	---	---
0/1 bar	31077	31978	31988
Price €			
0/1.6 bar / 0/2 bar*	31078	31979	31989
0/2.5 bar	31079	---	---
0/4 bar	31080	31980	31990
0/6 bar	31081	---	---
0/10 bar	31082	---	---
0/16 bar	31083	---	---
0/25 bar / 0/20 bar*	31084	31981	31991
0/40 bar	31085	31982	31992
Price €			
0/60 bar	---	---	---
0/100 bar	---	31983	31993
0/160 bar	---	---	---
0/250 bar / 0/200 bar*	---	31984	31994
0/400 bar	---	31985	31995
0/600 bar	---	31986	31996
Price €			
0/700 bar	---	---	---
Extra charges (without PG)	Price €	Price €	Price €
Housing filling		---	---
Without display – reduced price	---		
Clamp connection 1" or 1½". PN = 16	---		
Clamp connection 2". P _{max} = 16 bar	---		
Dairy fitting DIN 11851 DN 25. PN = 40	---		
Dairy fitting DIN 11851 DN 40. PN = 40	---		
Dairy fitting DIN 11851 DN 50. PN = 25	---		
High-temperature version +300 °C	---		
Measuring range -1/xx bar	---		
Pressure transmission liquid food oil	---		
Absolute pressure (measuring ranges according to data sheet)	---		

* Applies to DMU 14 DG/FG Ex only.

Blue part no. = in-stock items