

# Pressure transducers DeltaFox® DMU 11 D

## Version for differential pressure measurement



- Compact design
- High overload safety
- Mechanically robust and reliable, suitable for applications involving dynamic pressure changes as well as shock and vibration



Page 392



Page 393



Page 401



- 1 Delta Fox® DMU 11 D
- 2 Digital display unit DA 12
- 3 Pump

3

**Application** For electronic differential pressure measurement in industrial applications. For corrosive gaseous and liquid media which are not highly viscous and do not crystallise.

**Description** The DeltaFox® DMU 11 D pressure transducers feature two oil-immersed piezo-resistive stainless steel measuring cells. When pressure is applied, the pressure difference between the positive side and the negative side is converted into a current or voltage signal which is proportional to the differential pressure.

### Technical specifications

#### Measuring accuracy

Deviation from characteristic curve as per IEC 60770 – limit point calibration, non-linearity, hysteresis, reproducible:

$P_N \leq \pm 0.5 \% \text{ FSO}$  (diff. pressure range with turn down from 1:1 to 1:5)

$P_N \leq 1 \text{ bar}$ :  $\leq \pm 0.5 \% \text{ FSO}$  (diff. pressure range with turn down from 1:1 to 1:2)  
 $\leq \pm 1 \% \text{ FSO}$  (diff. pressure range with turn down from 1:2 to 1:10)

#### Measuring ranges/overload safety

Nominal pressure (bar)	Differential pressure measuring range (bar)	Max. static pressure at one end (bar)
0.2	0/0.02 to 0/0.2	0.5
0.4	0/0.04 to 0/0.4	1
1.0	0/0.1 to 0/1.0	3
2.5	0/0.25 to 0/2.5	6
6.0	0/0.6 to 0/6.0	20
16	0/1.6 to 0/16	60

#### Operating temperature range

Medium:  $-25/+125^\circ\text{C}$

Ambient:  $-25/+85^\circ\text{C}$

Storage:  $-40/+100^\circ\text{C}$

#### Temperature error band

In compensated range

$0/70^\circ\text{C} \leq 1.5 \% \text{ FSO}$

In compensated range

$0/50^\circ\text{C}$  at nominal pressure 0.4 bar  $\leq 2 \% \text{ FSO}$

In compensated range

$0/50^\circ\text{C}$  at nominal pressure 0.2 bar  $\leq 2.5 \% \text{ FSO}$

#### Dynamic characteristics

Response time  $< 5 \text{ ms}$

#### Process connection

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

#### Materials

Housing: Aluminium, black, anodised

Pressure connection: Stainless steel 316 L

Diaphragm: Stainless steel 316 L

Seal: FKM (Viton)

#### Output signal/supply voltage

4–20 mA, 2-wire DC 12–36 V

0–10 V, 3-wire DC 14–36 V

#### Load

4–20 mA:  $R_{\text{max}} = [(U_B - U_{B\text{min}}) / 0.02 \text{ A}] \Omega$

0–10 V  $> 10 \text{ k}\Omega$

#### Current input

4–20 mA  $< 25 \text{ mA}$

0–10 V  $< 7 \text{ mA}$

#### 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

#### CE conformity

EMC Directive 2014/30/EU

RoHS Directive 2011/65/EU

PED 2014/68/EU

#### Scope of delivery

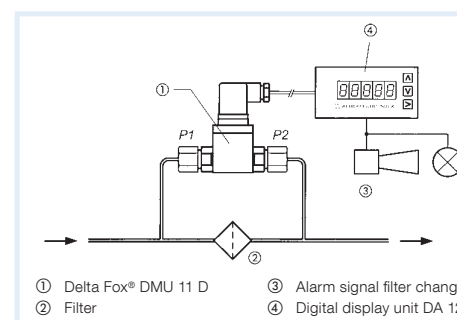
Pressure measuring instrument with mounting bracket

### Options

- Other process connections
- Other electrical connections
- Other seal materials
- Other output signals
- Fitting of chemical seal



See page 237 for prices.

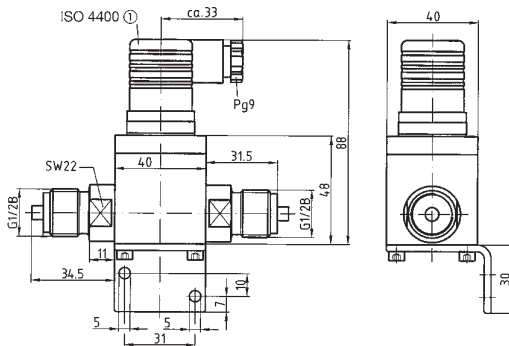
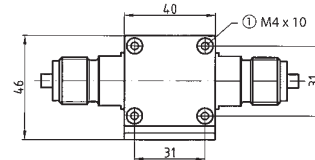


- 1 Delta Fox® DMU 11 D
- 2 Filter
- 3 Alarm signal filter change
- 4 Digital display unit DA 12

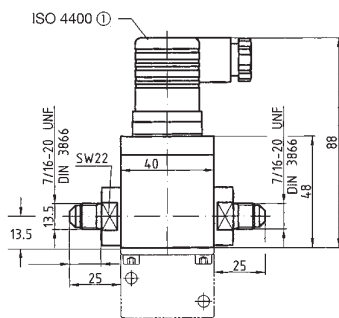
# Pressure transducers DeltaFox® DMU 11 D

## Dimensions (mm) and electrical connections

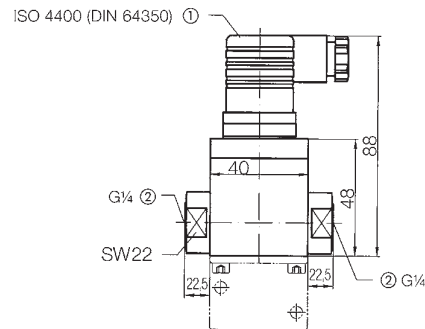
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Connection 2 x G $\frac{1}{2}$ B (EN 837)Connection 2 x G $\frac{1}{2}$ B (EN 837)

Connection 2 x 7/16 UNF



① Connector

Connection 2 x G $\frac{1}{4}$  female thread

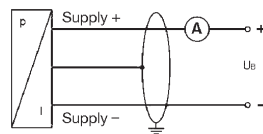
① Connector

② Pressure connection (female thread)

### Wiring diagram

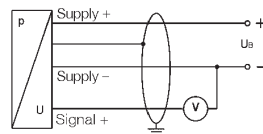
2-wire

4–20 mA



3-wire

0–10 V



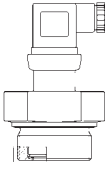
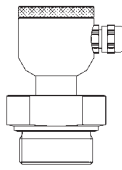



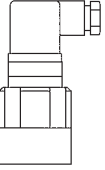
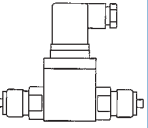
### Pin assignment table

Pin assignment	ISO 4400 (DIN 43650)
2-wire system: Supply + (4–20 mA) Supply – Earth	1 2 Earth pin
3-wire system: Supply + Supply – (0...10 V) Signal + Earth	1 2 3 Earth pin

The units are shipped with a detailed connection diagram.

# Pressure transducers DMU 07 – DMU 11 D

DG: H, PG: 4

Type	DMU 07	DMU 07 FG	DMU 08	DMU 08 T**	DMU 09	DMU 10 D	DMU 11 D*
Version							
Measuring principle	Capacitance ceramic measuring cell		Piezo-resistive stainless steel measuring cell	Piezo-resistive stainless steel measuring cell	Capacitance ceramic measuring cell	Piezo-resistive silicon measuring cell	Piezo-resistive stainless steel measuring cell
Measuring accuracy (IEC 60770)	0.35 % FSO	0.35 % FSO	0.35 % FSO (≤ 0.4 bar 0.5 % FSO)	0.35 % FSO (≤ 0.4 bar 0.5 % FSO)	0.35 % FSO	> 160 mbar = 0.35 % FSO 40–160 mbar = 1 % FSO < 40 mbar = 2 % FSO	0.5 % FSO (with ref. to nominal pressure)
Wetted parts	Ceramic/FKM Stainless steel 316 L	Ceramic/FKM Stainless steel 316 L	Stainless steel/ FKM 316 L	Stainless steel/ FKM 316 L	PP/ceramic/ FKM	Aluminium/silicon/glass RTV/ceramic, nickel/PUR (glued)	Stainless steel/ FKM 316 Ti
Connection	G1½B with flush diaphragm	G1½B with flush diaphragm	---	---	---	2 x G1/8B female thread	2 x G1/2B EN 837
Supply voltage	DC 9–32 V	DC 9–32 V	DC 8–32 V	DC 10–30 V	DC 9–32 V	DC 8–32 V	DC 12–36 V
Output	4–20 mA	4–20 mA	4–20 mA	4–20 mA	4–20 mA	4–20 mA	4–20 mA
System	2-wire	2-wire	2-wire	2-wire	2-wire	2-wire	2-wire
Electrical connection	Connector ISO 4400 (43650-A)	Field housing M12 x 1.5	5 m PUR cable	5 m PUR cable	5 m FEP cable	Connector ISO 4400 (43650-A)	
Measuring range	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
<b>Price €</b>							
0/6 mbar	---	---	---	---	---	31861	---
0/10 mbar	---	---	---	---	---	31862	---
0/25 mbar	---	---	---	---	---	31863	---
0/40 mbar	31789	31821	---	---	31767	31864	31830
0/60 mbar	31790	31805	---	---	31768	31865	31831
0/100 mbar	31791	31547	<b>31555</b>	31555T0070	31571	31866	31813
0/160 mbar	31792	31806	<b>31556</b>	31556T0070	31572	31867	31814
0/200 mbar	31793	31548	<b>31557</b>	31557T0070	31573	---	---
0/250 mbar	31794	31807	<b>31558</b>	31558T0070	31574	31868	31815
0/300 mbar	---	---	<b>31519</b>	31519T0070	31812	---	---
0/400 mbar	31795	31549	31559	31559T0070	31575	31869	31832
0/600 mbar	31796	31808	31560	31560T0070	31576	31870	31833
0/1 bar	31797	31550	31561***	31561T0070	31577	31871	31816
0/1.6 bar	31798	31809	31562	31562T0070	31578	---	31834
0/2 bar	31799	31551	31563	31563T0070	31579	---	---
0/2.5 bar	---	---	31564	31564T0070	31580	---	31817
0/4 bar	31800	31552	31565	31565T0070	31581	---	31835
0/6 bar	31801	31810	31566	31566T0070	31582	---	31818
0/10 bar	31802	31553	31567	31567T0070	31583	---	31836
0/16 bar	---	---	31568	31568T0070	---	---	31837
0/20 bar	---	---	31569	31569T0070	---	---	---
0/25 bar	---	---	31570	31570T0070	---	---	---

\* Please specify required nominal pressure/maximum static pressure when ordering. Standard temperature range: 0–70 °C Replace the designation of the part number, if necessary \*\* 0–30 °C, designation: 0030 / 0–50 °C, designation: 0050 / 0–70 °C, designation: 0070 \*\*\* Electrical connection 15 m PUR cable, price €

Blue part no. = in-stock items

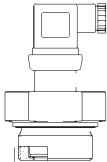
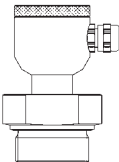


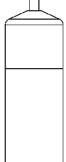
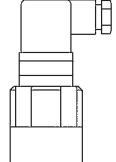
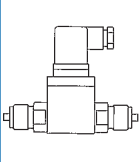


See page 238 for extra charges for and accessories.

# Extra charges/accessories for DMU 07 – DMU 11 D

DG: H, PG: 4

3

Type	DMU 07	DMU 07 FG	DMU 08	DMU 08 T	DMU 09	DMU 10 D	DMU 11 D
Version							
	Price €	Price €	Price €	Price €	Price €	Price €	Price €
EX protection II 1G EEx ia IIC T4				---		---	---
2 x G¼ female thread	---	---	---	---	---	---	
2 x hose connection 6 mm	---	---	---	---	---		On request
2 x 7/16 UNF	---	---	---	---	---	---	
Other connections	On request	On request	---	---	---	On request	On request
Cable connection per metre PUR cable	---	---			---	---	---
Cable connection per metre FEP cable	---	---				---	---
Binder connector		---	---	---	---	---	---
Fixed cable connection 2 metres		---	---	---	---	---	---
Cable extension per metre		---	---	---	---		---
Output 0–20 mA. 3-wire	---	---		---	---	---	---
Output 0–10 V. 3-wire				---	---		
Other output signals	On request	On request	On request	---	On request	On request	On request
Measuring accuracy 0.25 % FSO			---	---	---	---	---
5-point calibration report (for measuring accuracy up to 0.25 % FSO)			---	---	---	---	---
SIL 2 (4–20 mA only)	---	---		---	---	---	---

## Accessories for DMU 08/ DMU 09

DG: H	PG	Part no.	Price €
Screw connector kit G2" – 1½" – 1"	1	<b>52125</b>	
Screw connector kit stainless steel G1"	3	31822	
Junction box with pressure relief port (IP 65)	1	<b>31824</b>	
Anchor clamp	3	<b>31825</b>	

Blue part no. = in-stock items

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See chapter 8 for digital display units and signal processing.

