

Operating instructions

**DMU 10 D****DMU 11 D**

Differential pressure transmitter

DMU 10 D

DMU 11 D





1. General


1.1 Information on the intended use


- The differential pressure transmitters DMU 10 D and DMU 11 D are intended for industrial applications. The compact design allows a simple integration even in constructions and machines with restricted space conditions.
- Base elements of DMU 10 D are 2 piezoresistive stainless steel sensors. DMU 11 D is based on a piezoresistive silicon pressure sensor.
- For both sided pressure admission, the difference of the pressure between positive and negative side is established and converted into a proportional electrical signal.
- DMU 10 D comes into operation e. g. in engineering and plant construction for filter controlling and flow measurement as well as in hydraulic applications. As media, fluids and gases are suitable, which are compatible with the sealing material as well as with stainless steel 1.4571 and 1.4435.
- DMU 11 D is intended for the application in the filter controlling and air conditioning technology. As media, non-aggressive gases and pressured air are suitable.
- The application of both differential pressure transmitters DMU 10 D and DMU 11 D is summarized in this operating instruction, but the devices differ in the technical data which can be taken out of the current data sheet.
- Use the device according to the area of application specified above! Furthermore, compatibility with the medium to be measured has to be assumed.
- No liability is assumed and warranty claims are excluded in case of improper application, modification of or damage to the device.

1.2 Target group

This operating instructions are intended for qualified technical personnel.





1.3 Symbols used

 : Caution!

 : Note

1.4 Safety notes

Observe the following notes:

-  The device may only be installed, used and serviced by persons who are familiar with this operating manual!
-  Observe the applicable laws regarding occupational safety, accident prevention and national installation standards!
-  The device must only be used within the specifications! (Compare the technical data in the current data sheet)
-  Install the device in the depressurized and mechanical tension condition!



2. Product identification

The device can be identified by its type plate. It provides the most important data. By the ordering code, the product can be clearly identified.

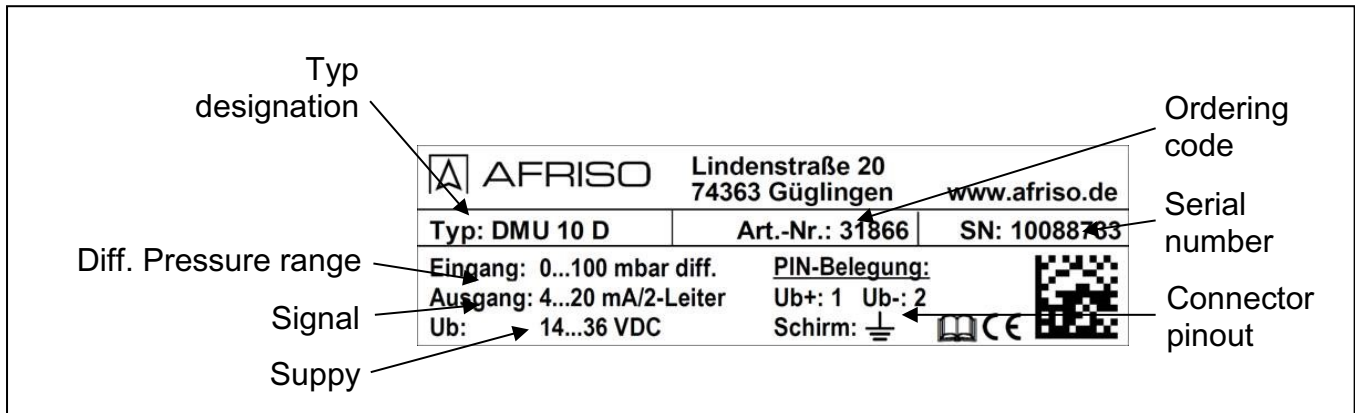


Fig. 1: type plate DMU 11 D

3. Installation

3.1 Assembly information

- Keep in mind that this device is an electronic precision measuring device. Handle the device carefully and properly to avoid any damages!
- Do not throw the device!
- Remove the packaging and, if necessary, the protective cap of the device only shortly before installation in order to prevent damage to the diaphragm!
- Keep the protective cap!
- After disassembling, reattach this protective cap over the diaphragm.
- Handle an unprotected membrane with extreme care; This can be easily damaged.
- Do not use any force when installing the devices!
- Make sure that no mechanical stresses occur at the pressure port with low pressure ranges during installation, as this may cause a shifting of the characteristic curve..
- For the connection of the pressure lines, a sealing has to be installed by the operator.
- For the pipe assembly, an installation as zero-potential as possible must be observed.
- Consider for the installation of a DMU 10 D, that the pressure ports must not be turned against the housing!

3.2 General installation steps

1. Remove the pressure measuring device from the package carefully.
2. Connect the reference pressures according to the following installation steps and to your mechanical connections. Therefore, you will have to observe that:
 - The higher pressure must be connected with the input "+" (DMU 10 D) or "P1" (DMU 11 D)
 - The lower pressure must be connected with the input "-" (DMU 10 D) or "P2" (DMU 11 D)



3. Fix the device according to their demands on the holder or holding angle intended for it.
 - For mounting the device, four mounting threads (M4) are provided.
 - For DMU 11 D in addition, the possibility is given to mount the device by using the two holes ($\varnothing 4,5$ mm).

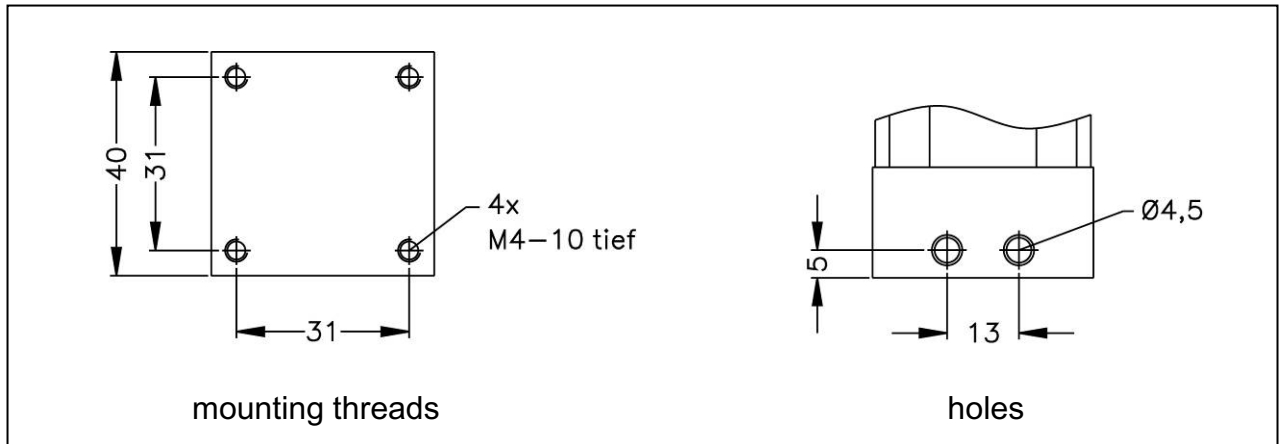


Fig. 2 Mounting possibilities

3.3 Installation steps for DMU 10 D with G 1/8" internal thread

- Check to ensure that the O-rings fit properly into the grooves. (O-rings are not included in the scope of delivery.)
- Make sure that the sealing surfaces of the fittings are perfectly smooth and clean.
- Screw the fittings into the threads by hand.
- To tighten the fittings properly, hold the DMD 331 on the spanner flat SW 22 of the respective pressure port with one hand and then tighten it (max. 20 Nm).

3.4 Installation steps for DMU 11 D with G 1/8" internal thread

- Seal the pressure ports of the differential pressure transmitter in a way that is suitable for your application. (Seals are not included in the scope of delivery.)
- Screw the fittings into the threads as far as possible.
- Tighten the fittings properly (max. 10 Nm).

3.5 Installation steps for DMU 11 D with tube nozzle $\varnothing 6,6 \times 11$

- Slip your flexible tubes ($\varnothing 6$ mm) onto the tube nozzles as far as possible.

3.6 Electrical connection

Establish the electrical connection of the device complying with your plug according to the pin configuration shown on the type plate and in the following table.

- ☞ For devices with cable gland as well as cable socket, you have to make sure that the external diameter of the used cable is within the allowed clamping range. Moreover you have to ensure that it lies in the cable gland firmly and cleftlessly.



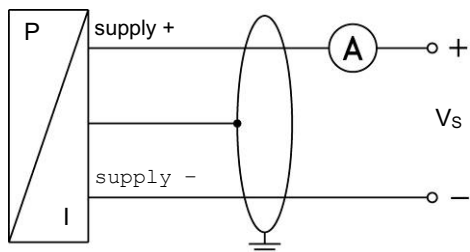
Please note for devices with ISO 4400 plug and cable socket, that the socket has to be mounted properly to ensure the ingress protection, mentioned in the data sheet. Please check if the delivered seal is placed between plug and cable socket. Fasten the cable socket on the device by using the screw, after connecting the cable.

Pin configuration:

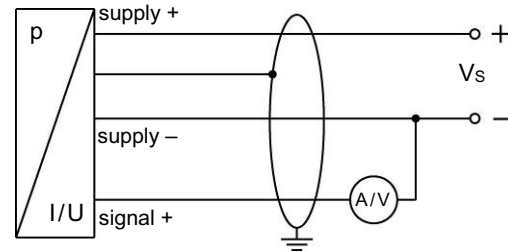
	DMU 10 D		DMU 11 D		
Electrical connection	ISO 4400 IP 65 	Brad Harrison® Mini Change IP 67 	ISO 4400 IP 65 	M12x1 (4-pin) IP 67 	cable gland IP 67
2-wire-system					
Supply +	1	A	1	1	wh (white)
Supply -	2	B	2	2	bn (brown)
Ground	ground contact	C	ground contact	4	gnye (green-yellow) (shield)
3-wire-system					
Supply +	1	-	1	1	wh (white)
Supply -	2	-	2	2	bn (brown)
Signal +	3	-	3	3	gn (green)
Ground	ground contact	-	ground contact	4	gnye (green-yellow) (shield)

Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)



For the electrical connection, use a shielded cable.



4. Commissioning

Please note that for starting up, the device has to be stressed by pressure simultaneously at both pressure ports. Otherwise the sensor could be damaged. For one-sided pressure admission, the permissible static pressure (one-sided) must be attended. Please take this out of the current data sheet.

5. Troubleshooting

Problem	Problem reason	Error detection / corrective
no output signal	<ul style="list-style-type: none">- connected incorrectly- line break - defective amperemeter (signal input)	<ul style="list-style-type: none">- inspect the connection- inspect all line connections necessary to supply the device (including the connector plugs)- Inspect the amperemeter (fine-wire fuse) or the analog input of your PLC
analog output signal too low	<ul style="list-style-type: none">- load resistance too high- supply voltage too low- defective energy supply	<ul style="list-style-type: none">- verify the value of the load resistance- verify the output voltage of the power supply- inspect the power supply and the applied supply voltage at the device
shifting of the output signal	<ul style="list-style-type: none">- diaphragm is contaminated or damaged	<ul style="list-style-type: none">- please return the device to us for repair
wrong or no output signal	<ul style="list-style-type: none">- electrical connection is damaged- reverse polarity of the pressure ranges	<ul style="list-style-type: none">- check the connections - check if the higher pressure is connected with the input "+" (DMU 10 D) or "P1" (DMU 11 D)

If you detect an error, please try to eliminate it by this table or send the device to our service address for repair.



Repairs on the device may only be performed by the manufacturer!



6. Decommissioning



When dismantling the device, it must always be done in the depressurized and currentless condition!

7. Maintenance

In principle, the device requires no maintenance.

If necessary, clean the housing of the device using a moist cloth and a non-aggressive cleaning solution.

8. Recalibration

The offset value or range value may shift during the life of the device. In this case, a deviating signal value in relation to the set lower or upper measuring range value is output. If one of these two phenomena occurs after extended use, a recalibration in the factory is recommended. Please note the chapter "Service/Repair" with regard to this.

9. Returning the device

Get in touch with us before returning your product (service@afribo.de).

A declaration of decontamination must be enclosed with the device for every return, regardless of whether it is for recalibration, decalcification, conversion or repair. Corresponding templates can be found on our homepage.

Devices without a declaration of decontamination will only be examined after receipt of a corresponding declaration in case of doubt regarding the medium used!

10. Decommissioning, disposal

Dispose of the product in compliance with all applicable directives, standards and safety regulations.



1. Disconnect the product from mains.
2. Dismount the product (see chapter "Mounting", reverse sequence of steps).
3. Dispose of the product.

11. Warranty

See our terms and conditions at www.afribo.com or your purchase contract for information on warranty.



12. EU Declaration of Conformity



Technik für Umweltschutz

Messen, Regeln, Überwachen.

EU - Konformitätserklärung

EU Declaration of Conformity / Déclaration EU de conformité /
Declaración de conformidad CE / Declaração de conformidade CE /
Deklaracja zgodności UE



Formblatt
FB 27 - 03

Name und Anschrift des Herstellers: AFRISO-EURO-INDEX GmbH, Lindenstraße 20, 74363 Güglingen
Manufacturer / Fabricant / Fabricante / Nome e endereço do fabricante / Producent:

Erzeugnis: Druckmessumformer
Product / Produit / Producto / Produto / Produkt:

Typenbezeichnung: DMU 10 D, DMU 11 D
Type / Type / Tipo / Typ:

Betriebsdaten: DC 8 – 32 V (DMU 10 D), DC 12 – 36 V (DMU 11 D)
Techn. Details / Caractéristiques / Características / Detalhes técnicos / Dane techniczne:

Wir erklären in alleiniger Verantwortung, dass das bezeichnete Erzeugnis mit den Vorschriften folgender
Europäischer Richtlinien übereinstimmt:

We declare under our sole responsibility that the above mentioned product meets the requirements of the
following European Directives:

Le produit mentionné est conforme aux prescriptions des Directives Européennes suivantes:

El producto indicado cumple con las prescripciones de las Directivas Europeas siguientes:

O produto indicado cumpre com as prescrições das seguintes Diretivas Europeias:

Wymieniony wyżej produkt spełnia wymagania następujących Dyrektyw Europejskich:

Elektromagnetische Verträglichkeit (2014/30/EU)

Directive Electromagnetic Compatibility / Directive compatibilité électromagnétique / Directiva compatibilidad
electromagnética / Diretiva sobre compatibilidade eletromagnética / Dyrektywa kompatybilności elektromagnetycznej

EN 61326-1:2013

Druckgeräterichtlinie (2014/68/EU)

Pressure Equipment Directive / Directive équipements sous pression / Directiva equipos a presión /
Dyrektywa ciśnieniowa

Modul A

Die Anwendung dieser Richtlinie bezieht sich nur auf Geräte mit maximal zulässigem Überdruck > 200 bar.

RoHS-Richtlinie (2011/65/EU)

RoHS Directive / Directive RoHS / Directiva RoHS / Diretiva RoHS / Dyrektywa RoHS

EN IEC 63000:2018

Untersigner:

Signed / Signataire / Firmante /
Assinado por / Podpisat:

Dr. Späth, Geschäftsführer Technik

Technical Director / Director Técnico / Dyrektor Techniczny

1. Oktober 2021

Datum / Date / Pochá / Data


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Unterschrift / Signature / Firma / Assinatura / Podpis

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