



**Operating Instructions
for
Oscillation Flowmeter
for dry and wet gases
Model: DOG-...**

Sensor and Electronic Options A/B...O/P



DOG-4



DOG-6



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2. Note

2.1 General

Before unpacking and commissioning the device, the operating instructions and the “General Safety Instructions” document must be read and followed carefully. The general safety instructions, the operating instructions, the data sheet as well as approvals and further information can be downloaded via the QR code on the device or under the respective product on www.kobold.com.

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.



When used in machines, the device should be used only when the entire machine fulfils the EU machinery directive.





2.2 Validity and version of the operating instructions


Due to technical changes, the device documentation available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form.

2.3 Hazard warnings

The following instructions are intended to ensure your personal safety and to prevent damage to the product described or connected devices. Safety instructions and warnings to prevent danger to the life and health of users or maintenance personnel, or to prevent damage to property, are highlighted in this documentation using the symbols defined here. *The symbols and terms used have the following meaning in the documentation itself:*

Symbol	Explanation	Symbol	Explanation
 Note	Is important information about the product, the handling of the product or the respective part of the documentation to which particular attention should be drawn.	 Caution	Means that minor personal injury or minor property damage may occur if proper precautions are not taken.

Symbol	Explanation	Symbol	Explanation
 Warning	Indicates that serious personal injury or substantial property damage may occur if proper precautions are not taken.	 Danger	Means that death can occur if proper precautions are not taken.
 Warning	Attention: Hot surface!	 Warning	Warning: Dangerous electrical voltage

 Warning	<p>Devices weighing more than 25 kg must not be lifted or carried manually by a single person.</p> <p>The device is not equipped with dedicated lifting points or handles. For transport, assembly, and disassembly, suitable lifting and transport aids must be used, or a sufficient number of people must be employed. Structurally suitable lifting areas are located around the flanges and on the outer rim of the enclosure. National occupational safety regulations must be observed.</p>
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2.4 As per PED 2014/68/EU piping (module A2)

Model DOG	DN	P _{max} [bar]	Diagram 6 Group 1 Dangerous fluids	Diagram 7 Group 2 Not dangerous fluids
DOG-	25	25	Art. 4, Para. 3	Art. 4, Para. 3
DOG-	40	25	I	Art. 4, Para. 3
DOG-	50	25	II	I
DOG-	80	25	II	I
DOG-	100	25	II	I
DOG-	150	16	II	I
DOG-	200	16	II	I

Promoted by the Federal Ministry of Economics and Technology based on a decision of the German Bundestag.

3. Information on operating the device in potentially explosive environments (Ex, A0/D0/F0/H0/K0/N0/P0 option)

The devices can be used in the following way:

1. Sensor DOG-...: In zones 0, 1 and 2 (gas Ex, category 1G, 2G, 3G) in explosion groups IIA, IIB and IIC

2. Transmitter DOG-...: Outside the EX-area

Here the following ambient temperatures must be adhered to

$-20\text{ °C} \leq T_a \leq 60\text{ °C}$

The DOG-... is suitable for use with gases of the explosion group IIC and temperature class $\geq T4$.

Further important details can be found in the EU Type Examination Certificate.

3.1 General requirements

In the event of failure to comply with this information or unauthorized tampering with the device, the manufacturer's liability will no longer apply. Moreover, the guarantee for the device and accessory parts will become void.

- Comply with the information in these operating instructions and adhere to the conditions of use and permissible data printed on each device / type plates.
- Follow the generally accepted rules of technology when selecting and operating a device.
- Take appropriate measures to prevent unintentional activation or inadmissible impairments.
- The devices may be used only in the correct way and for the intended purpose in a normal industrial environment. Use for unsuitable purposes, will render all guarantees and liability of the manufacturer void!
- Ensure that only devices with ignition protection suitable for the operating zones are installed.
- All electronic operating resources connected must be suitable for the respective use.
- The operator is obligated to provide lightning protection according to local regulations.

3.2 Startup, installation

The devices are intended for installation in a higher-level system. The intervals for cleaning the operating resources (dust deposits) are specified depending on the degree of IP protection. It is extremely important to ensure that only devices with suitable ignition protection for the zones/categories are installed! It is essential that the installation regulations applicable at the national level, e.g. EN 60079-14, are adhered to during installation. Other important factors:

- In the event of adverse environmental conditions, it is necessary to ensure that the devices are accordingly protected.
- Follow the operating instructions for the respective device and adhere to any special conditions described there.
- The device may only be used for the purpose for which it was intended.
- It is essential to avoid electrostatic charges.
- Any possible metal parts in the device/lines (e.g. shielding) must be incorporated in the potential equalization PA in compliance with the user's country regulations.
- Parts that have jammed (e.g. as the result of frost or corrosion) may not be loosened by force in hazardous atmospheres.
- Operate the device only in the completely assembled state and enclosed in undamaged housing. Operating with a damaged housing is prohibited.
- At ambient temperatures of less than -5°C the connecting lines must be securely laid.
- Do not allow the outside of the device to come into contact with strongly corrosive media.
- Do not subject the system to excessive vibrations, bending or torsion.
- The devices may not – or only with the manufacturer's permission, and then only using special measures – be used in systems with electric corrosion protection. Parasitic currents must not be fed in via the shielding.
- Installations in Ex areas may be carried out only in compliance with the local installation regulations.
- Installation and maintenance only in ex-free atmospheres in compliance with the user's national regulations.

Additional precautionary measures must be taken if there is a possibility that hydrogen sulfide, ethylene oxide and/or carbon monoxide could be present. These compounds have very low ignition power!

Only non-arcing tools may be used for these compounds as well as all compounds included in explosion group IIC – if explosive atmospheres are still to be expected!

3.3 Application

The devices may be used only in the correct way and for the intended purpose in a normal industrial environment. Use for unsuitable purposes, will render all guarantees and liability of the manufacturer void!

See Chapter 4, 5, 7 and 9.

3.4 Repair, maintenance (for applications in Ex areas)

Definition of terms as defined in IEC 60079-17:

Repair and maintenance: A combination of all activities carried out to maintain an item or restore the object to a state in which it is able to meet the requirements of the relevant specification and ensure the execution of its required functions.

Inspection: An activity comprising the careful examination of an item carried out either without demounting or, if necessary, with partial demounting through such steps as measurement in order to reliably determines the condition of the item.

Visual inspection: An inspection in which visible faults, e.g. missing bolts, are detected without the use of equipment or tools.

Close inspection An inspection which comprises the aspects of a visual inspection in addition to identifying defects, e.g. loose bolts, apparent only by access with the use of equipment, e.g. steps (when necessary) and tools. Close inspections do not normally require an open enclosure or the de-energizing of the equipment.

Detailed inspection An inspection which encompasses those aspects covered by a close inspection and, in addition, identifies those defects, e.g. loose connections which are only be apparent by opening the enclosure and/or using tools and test equipment where necessary.

- Maintenance work may be performed only by qualified personnel with the equivalent of or qualification according to TRBS 1203 (German Technical Rules for Industrial Safety).
- Only accessory parts which fulfill all European regulations and national laws may be used in hazardous areas.
- The replacement of components may only take place using original spare parts approved for use in Ex areas as well.
- The devices in Ex areas must be cleaned regularly. The intervals must be specified by the operator according to the environmental load.
- After maintenance and/or repair, replace all barriers and notices removed in the process in their original positions.
- Uninstall the device if any faults are detected. The customer may not repair internal parts. Send the device to the manufacturer for inspection.

Task	Visual inspection monthly	Check every 6 months	Detailed inspection every 12 months
Visual inspection of the device for integrity, remove dust residues	•		•
Inspection of the entire system	Responsibility of the operator		

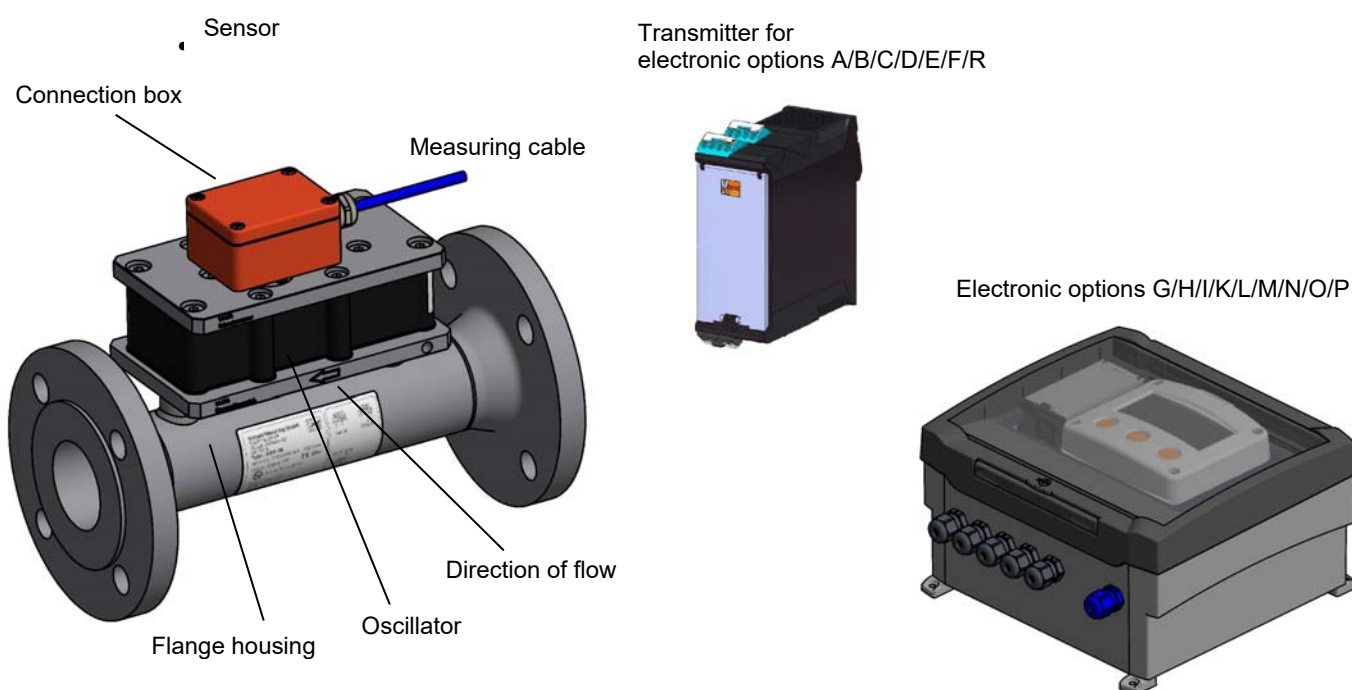
4. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition. Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:

The standard delivery includes:

- Sensor DOG-... including flange housing, measuring head, thermal wire sensor and connection box.
- Measuring cable from the sensor to the measuring converter (optional).
- Transmitter DOG-... possibly with electronic options G/H/I/K/L/M/N/O/P

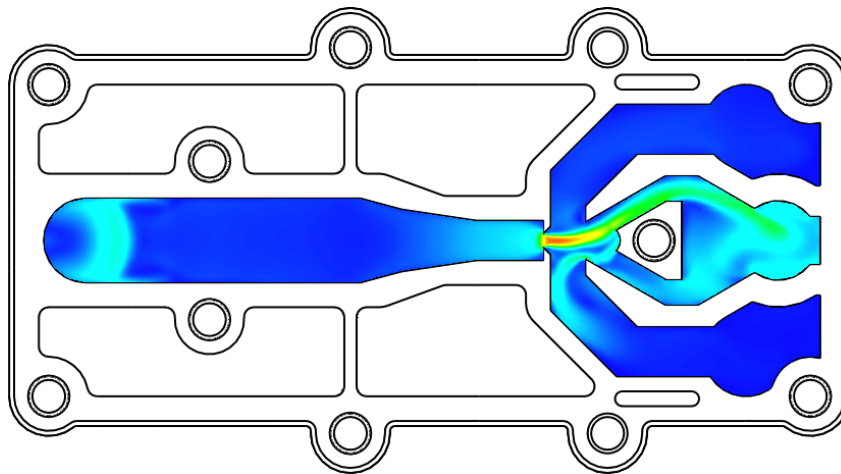


5. Regulation Use

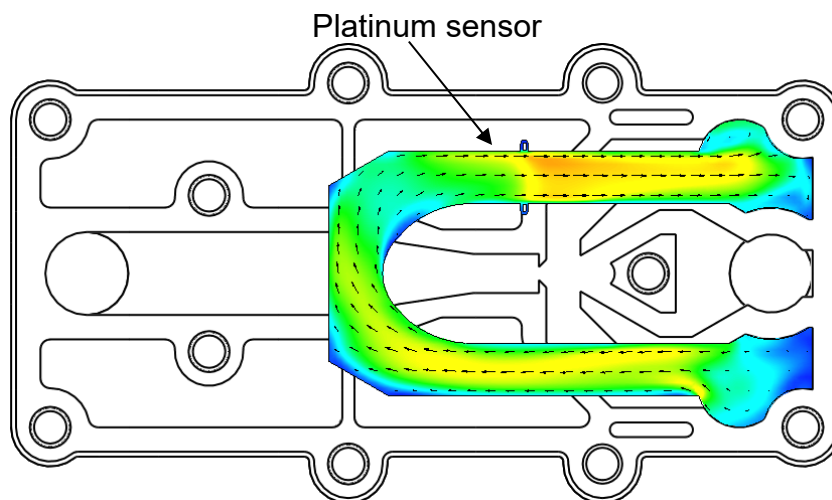
DOG-4/-6 type devices are used for measuring and monitoring the rate of flow. Only clean media may be measured, against which the materials used are resistant. Dirt particles and other impurities can impair the measurement results, in spite of the fact that the continuous change in direction of the flow ensures a self-cleaning effect. The sensor may be used only with the corresponding transducer.

6. Operating Principle

This device is an oscillating beam device and works without any movable parts. An orifice plate in the base creates flow resistance, which forces a partial flow to be directed into the oscillator. The gas in the oscillator begins to oscillate. The frequency of oscillation is proportional to the flow of volume. As the ratio between the flow through the oscillator and the flow through the measuring housing is constant, the frequency of oscillation is directly proportional to the entire flow of volume through the device. A platinum sensor determines the oscillation in the measuring head. The transmitter normalises the measured oscillation to 0 Hz (without flow) and to 150 Hz for the end of the measuring range.



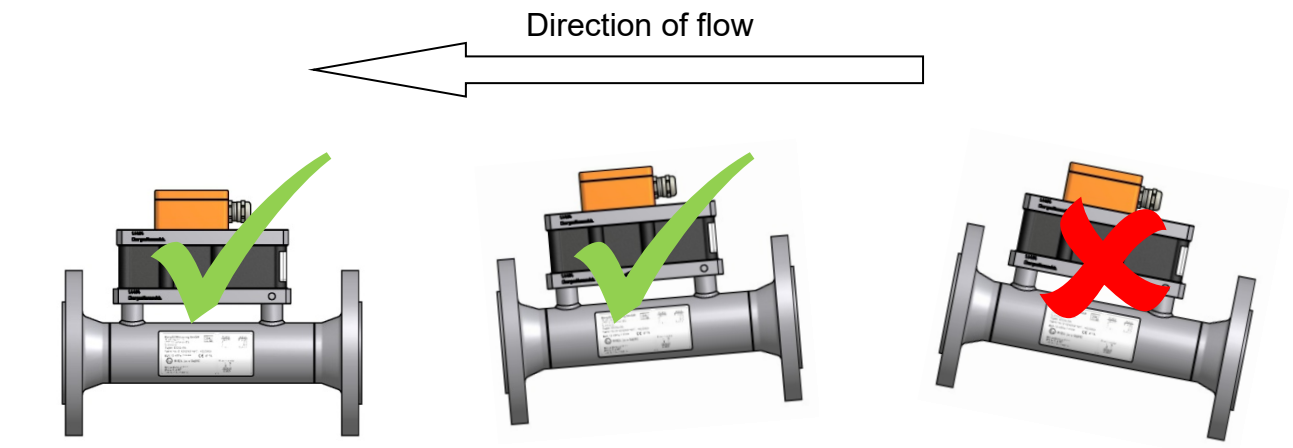
View from underneath



View from above

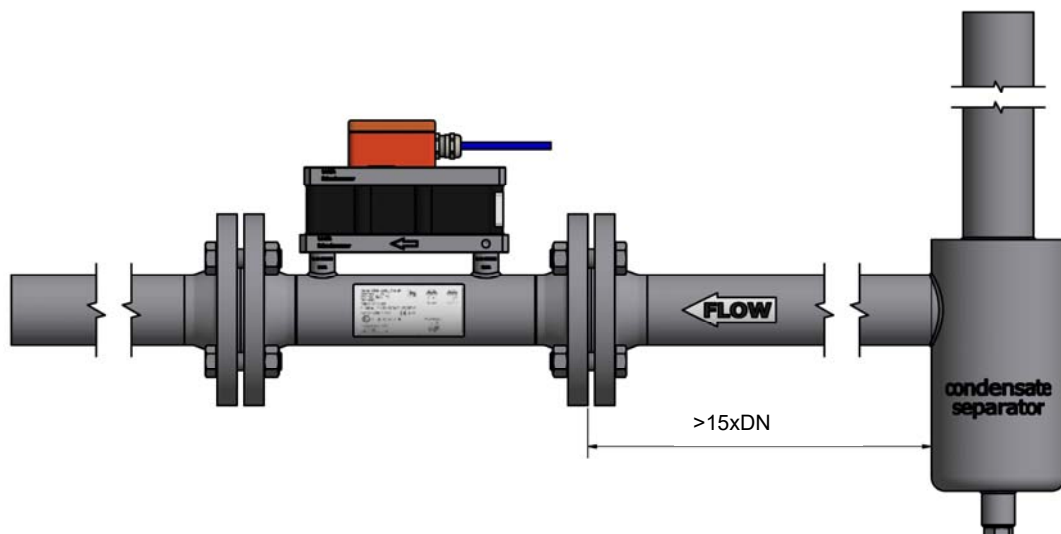
7. Mechanical Connection

The measuring sensor should be installed in a horizontal position with the oscillator facing upwards. A slight inclination in the direction of flow is permitted. The arrow on the flange housing must point in the direction of flow. The recommended minimum inlet path is 10 times the diameter of the pipe and the maximum outflow zone 5 times the diameter of the pipe. To prevent any possible rotational flow, it is recommended that a flow straightener be fitted upstream of the sensor. For damp media, slightly inclined installation in the direction of flow is recommended in order to ensure the removal of condensate from the oscillator.



It is also recommended to install a condensate separator, preferably in a vertical pipe in front of the flow meter (see figure below). The condensate can thus be removed before entering the flow meter.

Should the temperature difference between ambient and medium be $+20\text{ }^{\circ}\text{C}$ or greater, the pipeline and the flow meter should be thermally insulated to prevent condensation.



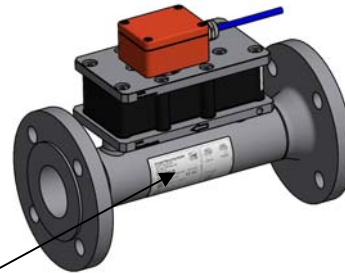
8. Identification (Ex version)

Type plate sensor DOG-...
(flange housing, measurement tube)

Kobold Messring GmbH
Nordring 22-24
65719 Hofheim / Ts.
Germany

Type: Sensor DOG-XXXXXX
Serial no.: XXXXXX YofC.: XX/20XX
BVS 13 ATEX E020 X IECEx BVS 13 0035X
Ex II 1G Ex ia IIC T4 Ga

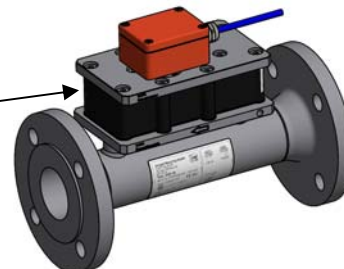
CE 0158 Medium T = -20...+60 °C
-20°C ≤ Ta ≤ +60°C Pmax = xx bar
Nur zur Anschaltung an Transmitter DOG-
Only for connection to transmitter DOG-



There is a warning label on the plastic housing “WARNING – DANGER Of ELECTROSTATIC DISCHARGE – SEE OPERATING INSTRUCTIONS”



WARNUNG – GEFAHR DURCH ELEKTROSTATISCHE
ENTLADUNGEN – SIEHE BETRIEBSANLEITUNG
WARNING – POTENTIAL ELECTROSTATIC
CHARGING HAZARD – SEE INSTRUCTIONS
DANGER – POSSIBILITÉ DE CHARGE
ÉLECTROSTATIQUE – VOIR LES INSTRUCTIONS



Type plate transmitter DOG-...
(see left)

Kobold Messring GmbH
Nordring 22-24
65719 Hofheim / Ts.
Germany

Type: Transmitter DOG-XXXXXX
Serial no.: XXXXXX YofC.: XX/20XX
BVS13 ATEX E020 X IECEx BVS130035X
Ex II (1) G [Ex ia Ga] IIC

CE 0158
-20°C ≤ Ta ≤ +60°C
Un = 230 VAC

(blue)
Sensor
1 2 3 4
+ -

(orange)
Output
1 2 3 4
E C

(black)
230VAC
1 2 3 4
L N



9. Electrical connections

9.1 General

- Install the measuring sensor near the transducer (max. 100 m cable length, depending on the electrical interference zone).
- The measuring cable must be laid well away from strong sources of electrical interference and not parallel to power cables.
- The measuring cable of several DOG-... must not be laid over long distances next to one another or bundled together.
- The electronics of the DOG-... must be installed outside of the Ex-zone.
- Lay the electrical cabling according to the following wiring diagram.
- Each transducer is matched specifically to the respective measuring sensor and must not be swapped over.
- The pipelines and the flange housing must be grounded.

9.2 Measuring cable in Ex areas

An Ölflex EP (without shield) or Ölflex EBCY (with shield) may be used as measuring cable between the sensor and transmitter. Alternatively, a cable with comparable properties may be used.

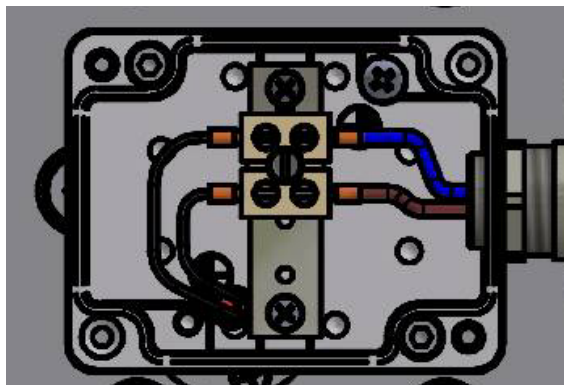
Ölflex EB $L_i=0.65 \text{ mH/km}$ $C_{isy}=110 \text{ nF/km}$

Ölflex EBCY $L_i=0.65 \text{ mH/km}$ $C_{isy}=135 \text{ nF/km}$ $C_{iasy}=185 \text{ NF/km}$

The length of the cable may not exceed 100 m. The maximum permitted cable inductance is $L_{imax}=65 \text{ } \mu\text{H}$ and the maximum capacitance $C_{imax}=32 \text{ nF}$.

9.3 Connection to the measuring sensor

To connect the measuring cable, first unscrew the lid of the connection box and remove the lid. Feed the cable through the cable gland and connect it to the connecting terminal (independent of polarity). When using a shielded cable, the shield must be connected to the grounding screw.



9.4 Terminal assignment of the DOG-... A/B/C/D/E/R... reader/transducer



230 V_{AC}
110 V_{AC}
24 V_{AC}
24 V_{DC}

<p>Supply</p>	<p>Output</p>	<p>Sensor</p>																																								
<table border="1"> <tr><th colspan="4">Supply black</th></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td></td><td>L</td><td></td><td>N</td></tr> <tr><td></td><td>+</td><td></td><td>-</td></tr> </table>	Supply black				1	2	3	4		L		N		+		-	<table border="1"> <tr><th colspan="4">Output orange</th></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td></td><td></td><td>E</td><td>C</td></tr> </table>	Output orange				1	2	3	4			E	C	<table border="1"> <tr><th colspan="4">Sensor blue</th></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>+</td><td></td><td>-</td><td></td></tr> </table>	Sensor blue				1	2	3	4	+		-	
Supply black																																										
1	2	3	4																																							
	L		N																																							
	+		-																																							
Output orange																																										
1	2	3	4																																							
		E	C																																							
Sensor blue																																										
1	2	3	4																																							
+		-																																								

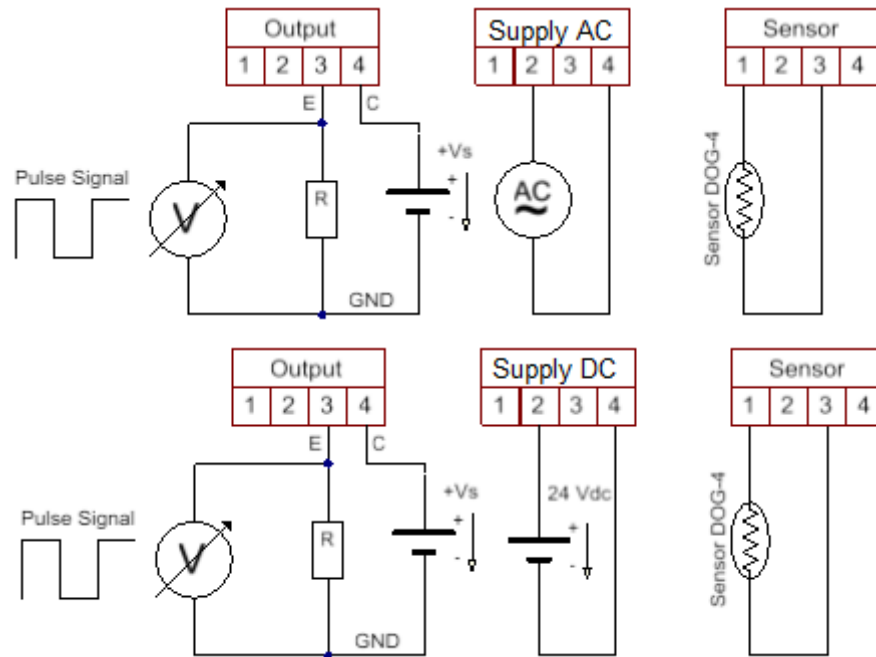
for AC
for DC

L = 230 V/110 V/24 V outer conductor
N = 230 V/110 V/24 V neutral conductor

+ = supply DC+
- = supply DC-

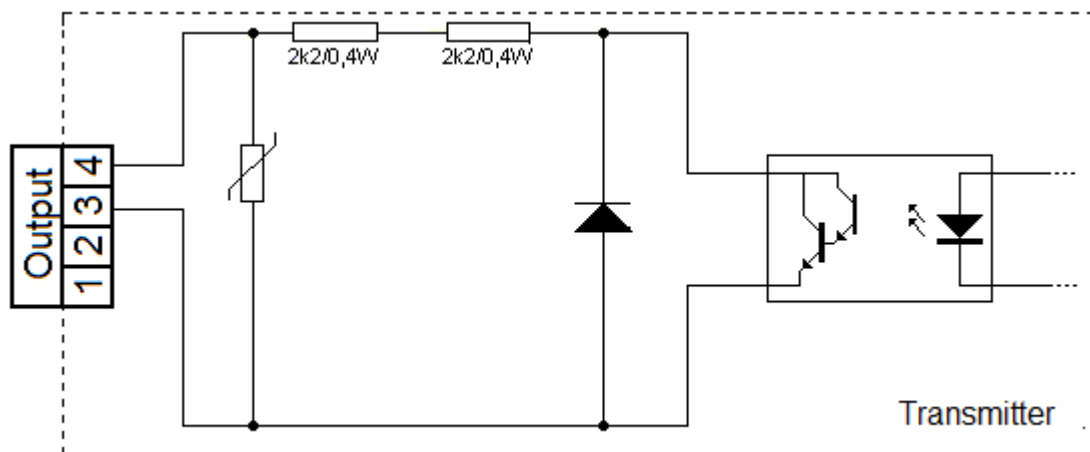
E = emitter optical coupler
C = collector optical coupler

I- = sensor conductor
I+ = sensor conductor



$$U_{HIGH} = \frac{R}{R+4.4\text{ k}\Omega} ; U_{LOW} < 0.5\text{ V}$$

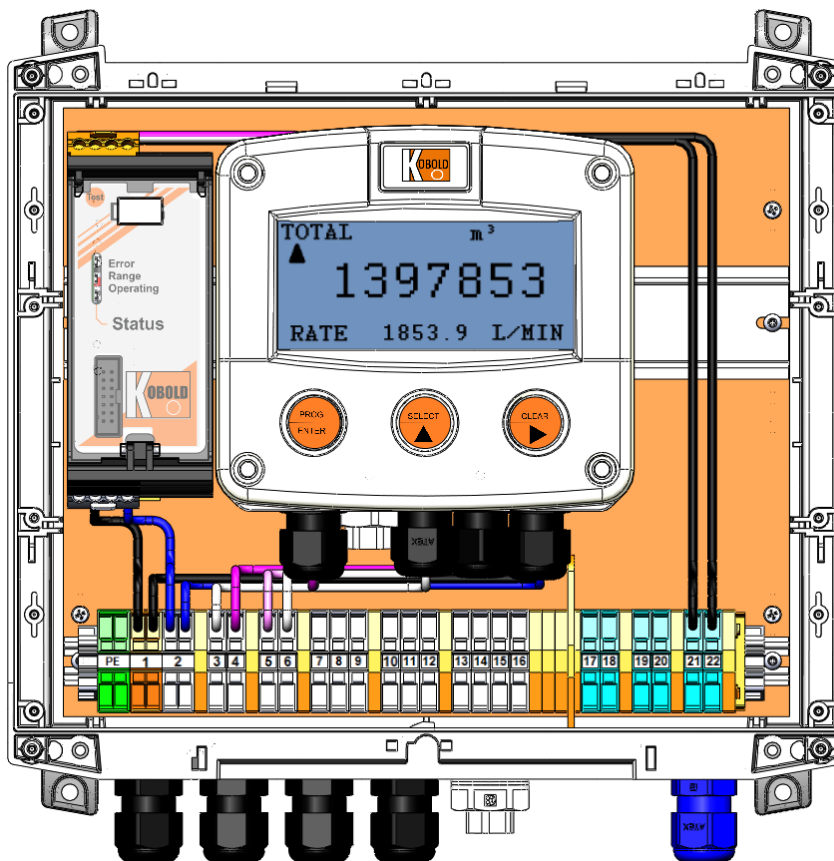
Example: $V_s = 24\text{ V}_{DC}$: $U_{HIGH}=17\text{ V}_{DC}@R=10\text{ k}\Omega$, $U_{HIGH}=23\text{ V}_{DC}@R=80\text{ k}\Omega$,

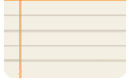


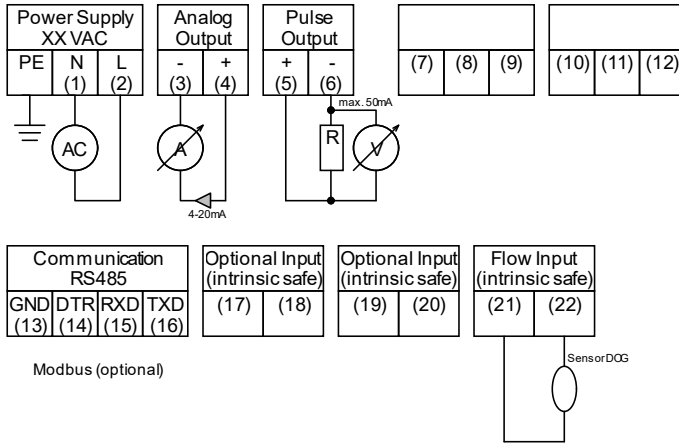
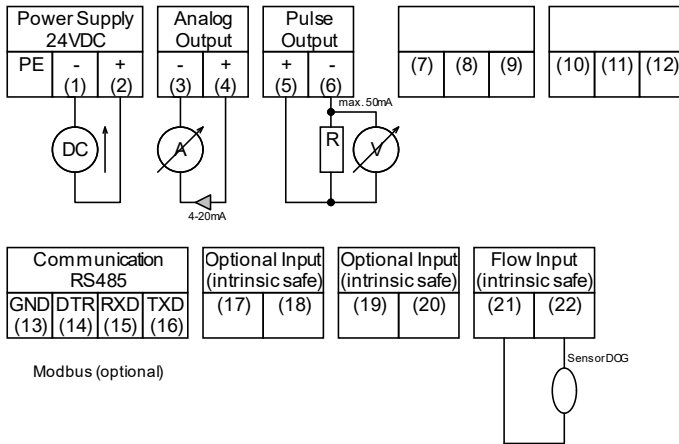
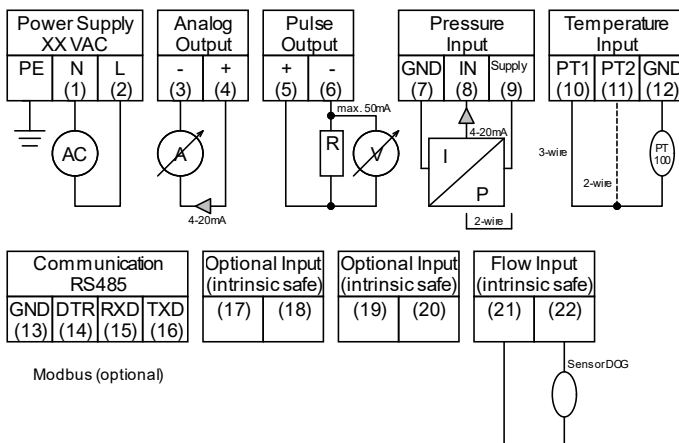
Optical coupler output, external supply max. 30 V_{DC}, I_{max} = 50 mA

9.5 Terminal assignment of the electronic option G0/H0/I0/K0/L0/M0/N0/O0/P0

With the electronic option G0/H0/L0/M0/N0, the transmitter is located together with the flow controller/flow computer prewired in the plastic wall housing. The connection terminal strip is located underneath the terminal cover. This must be removed for the electrical connection.

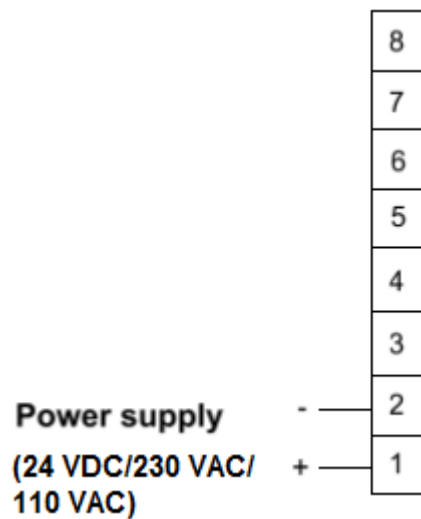
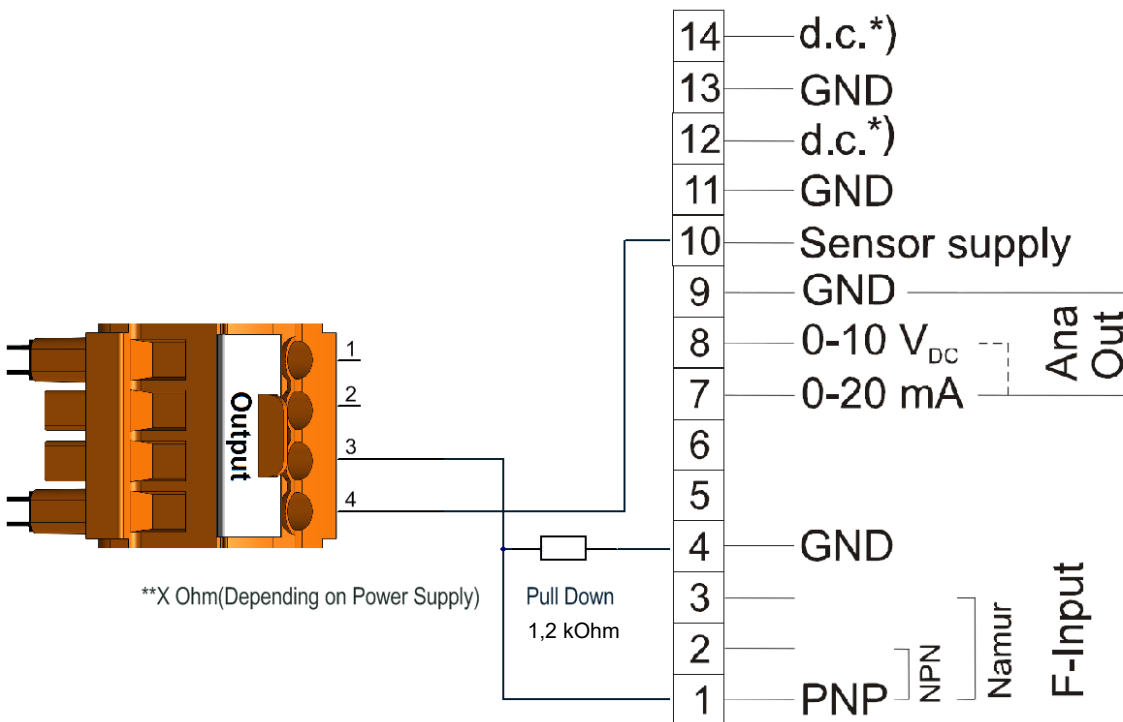


<p>NOTE</p>  <p>Note</p>	<p>Additional pressure and temperature sensors are required for the electronic options M0/N0/O0/P0 (flow computer). These sensors are not included in the scope of delivery.</p>
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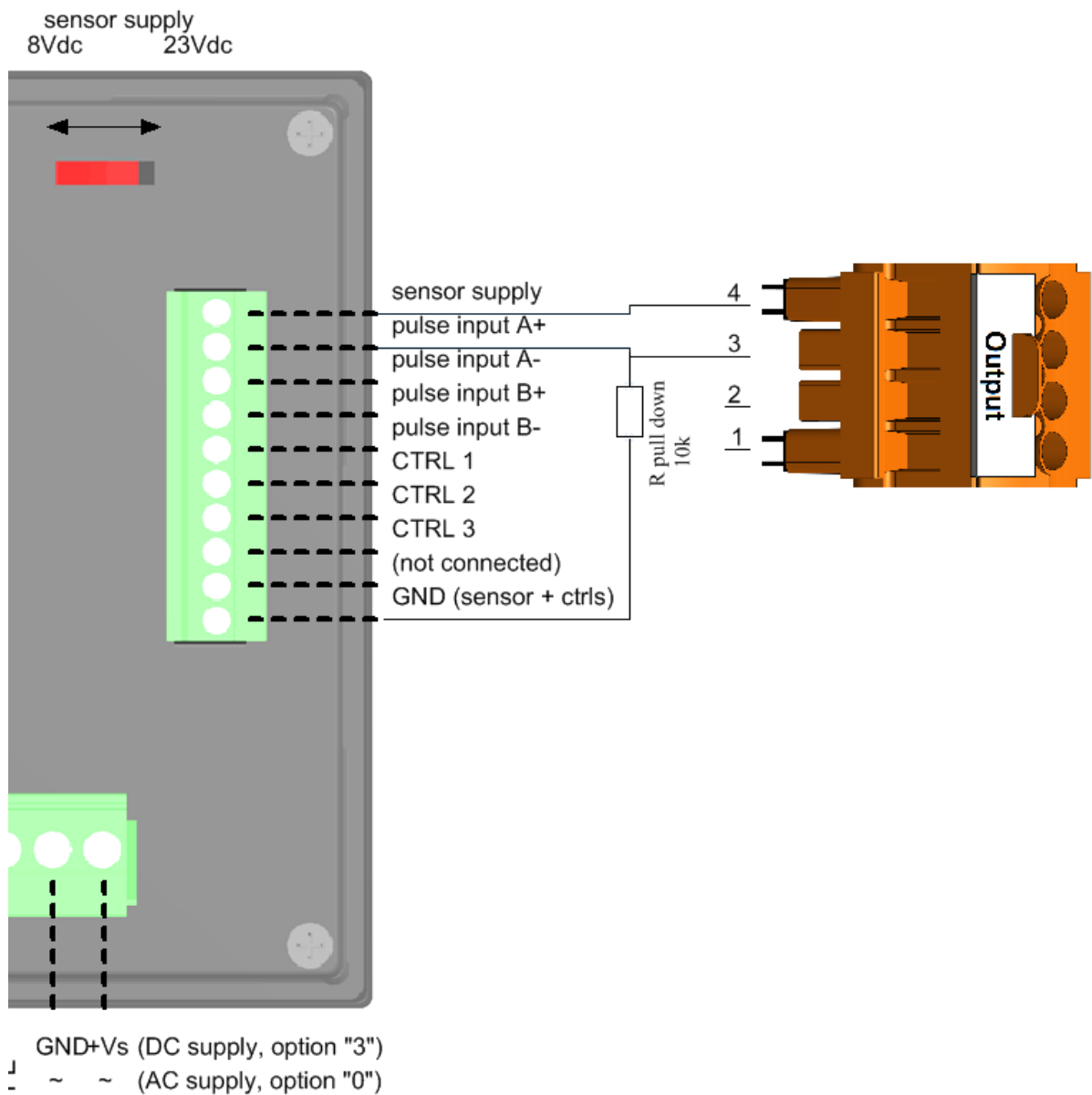
Wiring diagram electronic option G0/H0/I0/K0

Wiring diagram electronic option L0

Wiring diagram electronic option M0/N0/00/P0


<div style="background-color: #f4a460; padding: 2px; font-weight: bold; font-size: 8px;">NOTE</div> <div style="border: 1px solid #ccc; width: 100%; height: 30px; margin-top: 2px;"></div> <div style="border: 1px solid #ccc; width: 100%; height: 30px; margin-top: 2px;"></div> <div style="border: 1px solid #ccc; width: 100%; height: 30px; margin-top: 2px;"></div> <p>Note</p>	<p>There is installation space for 2 additional Zener barriers in the housing if the pressure/temperature sensors do not have the required certification. Establishing contact in Ex areas can take place via terminals 17 to 20. The required cabling is the responsibility of the installer.</p>
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9.6 Connections of DOG-... Transmitter with KOBOLD Evaluation Electronics ZED-X/ZOK-Zx

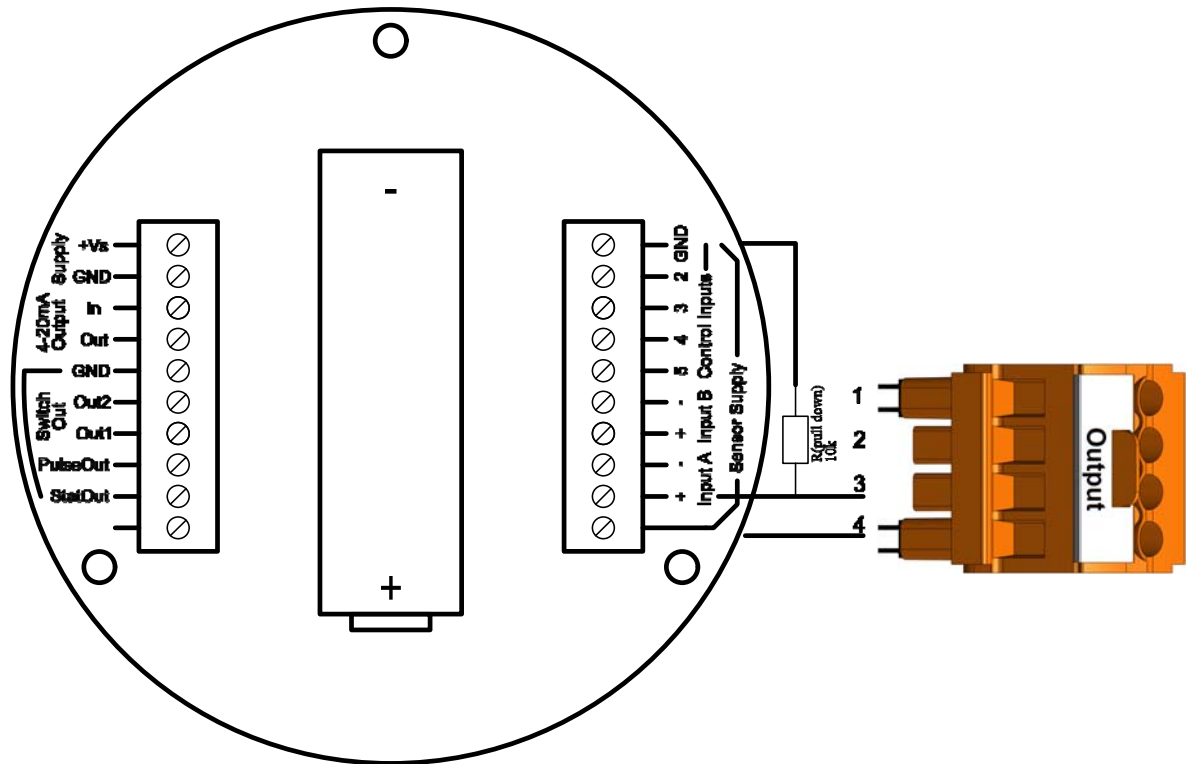


DOG-... connection with ZED-X



DOG-... connection with ZOK-ZxP

<p>NOTE</p>	<p>The sensor supply from ZOK-ZxP must be set to 8 VDC. From the software menu of ZOK-Zx, the 'Sensor type' must be set to 'PNP' (For details, please see the operating manual of ZOK-Zx electronics).</p>
<p>Note</p>	



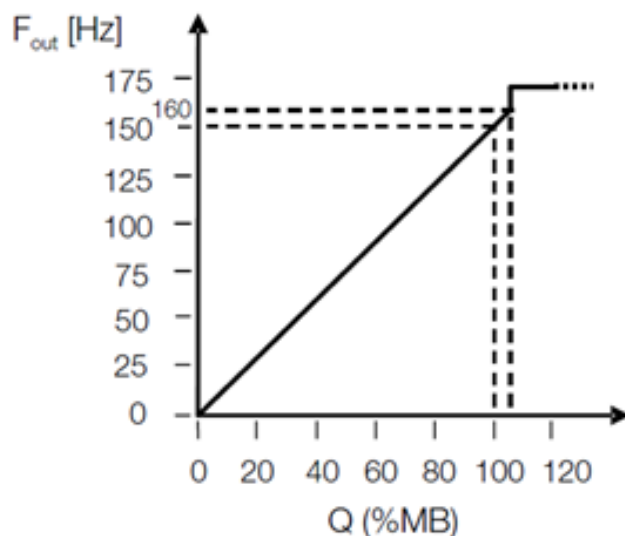
Connection example for DOG-... with ZOK-ZxK

The sensor type must be set to "PNP" in the ZOK-ZX software menu (see operating manual ZOK-Zx electronics).

10. Startup

During startup, ensure that the shut-off valves upstream and downstream of the device are opened slowly. Avoid increasing the flow velocity to prevent the discharge rate from damaging the sensor.

The output frequency of the DOG-... with the electronic options A/B/C/D/E/F/R is proportional to the measuring range.



In the event of a hot wire sensor fault (breakdown or short circuit) the transistor output is permanently connected. During self-diagnosis, the transistor output is switched to the high-resistance state.

11. Setup and operation of the flow controller/flow computer (option G0/H0/I0/K0/M0/N0/L0/O0/P0)

The integrated flow controller/flow computer are preset and calibrated at the factory. See the separate operating instructions for the DOG-4/-6 Electronic option G0/H0/I0/K0/L0 and DOG-4/-6 Electronic option M0/N0/O0/P0 for details.

12. Transmitter error message

12.1 Status display not illuminated

- Check terminal “230 V_{AC}” of the terminal assignment.
- Check supply voltage

12.2 OPERATING illuminated green but no output signal

- Check terminal “Output” of the terminal assignment

12.3 RANGE illuminated yellow

- Measuring range overflows or underflows, decrease or increase flow

12.4 ERROR illuminated red

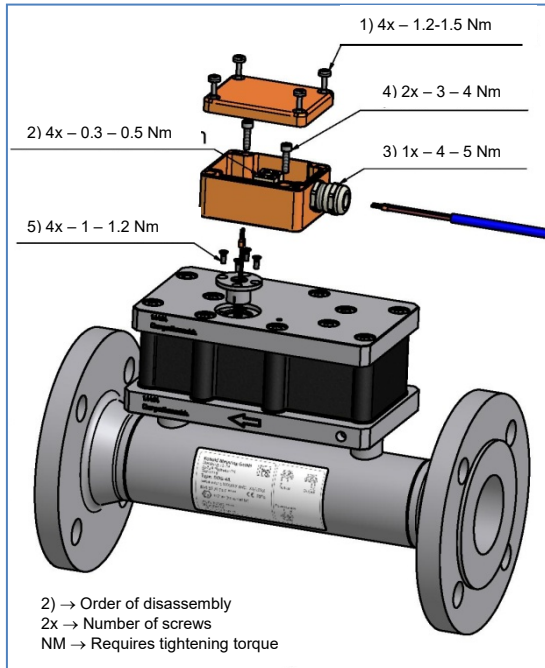
- Short circuit or interruption of the sensor circuit from the sensor to the transmitter.
- Check terminal “Sensor” of the terminal assignment
- Defective hot wire sensor (target value: 40-75 Ohm)



13. Maintenance

13.1 Replacing the sensor

To replace the hot wire sensor, turn off the flow of medium and discharge the

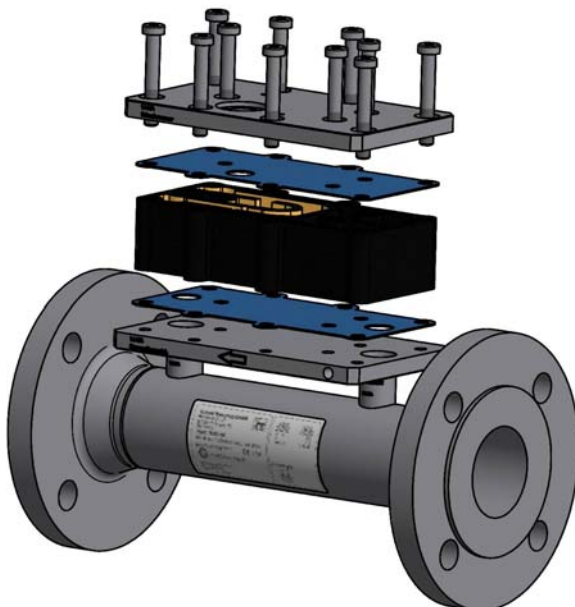


pressure in the lines. For versions with ball valves, it is sufficient to simply shut these. Demounting (see diagram) is carried out in the following order:

- 1) Open the connection box (4 x screws)
- 2) Unclamp the hot wire sensor from the strip terminal (2 screws)
- 3) If necessary (due to lack of space or tight cable arrangement), also unclamp from the strip terminal, loosen the cable gland and pull out the cable
- 4) Loosen the connection box from the plate (2 x screws)
- 5) **Slowly** release the hot wire sensor screws and **carefully** pull out the hot wire sensor. Take care that no hot wire sensor parts remain in the device and also that no foreign parts fall into the device (2 screws).

Reassembly is in the reverse order. Replac the O-rings with the new ones supplied with the hot wire sensor. Uniformly tighten the screws crosswise.

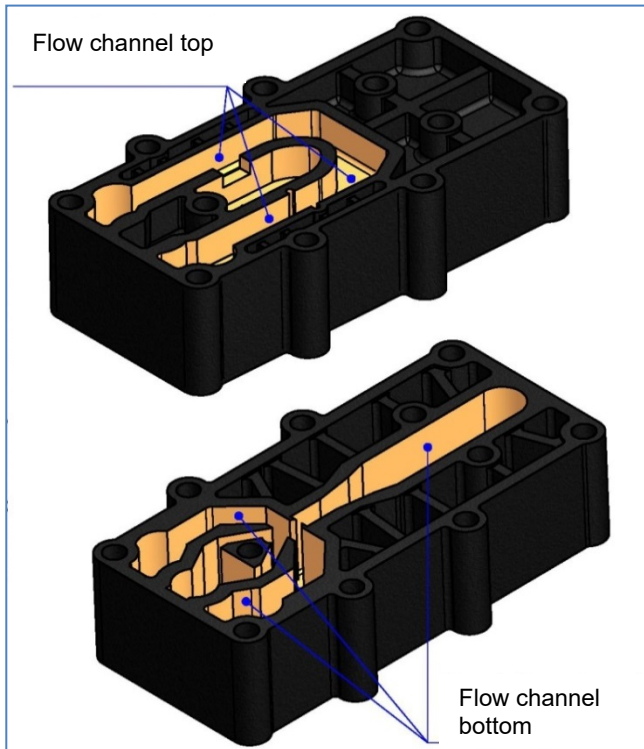
13.2 Disassembly and cleaning the sensor



In the event that the internal section of the oscillator is dirtied by the medium or foreign particles fall into this during replacement of the sensor, the device must be demounted and cleaned (see figure at left).

Before the device can be demounted, the connection box and the hot wire sensor must be unscrewed. For this, see point 13.1.

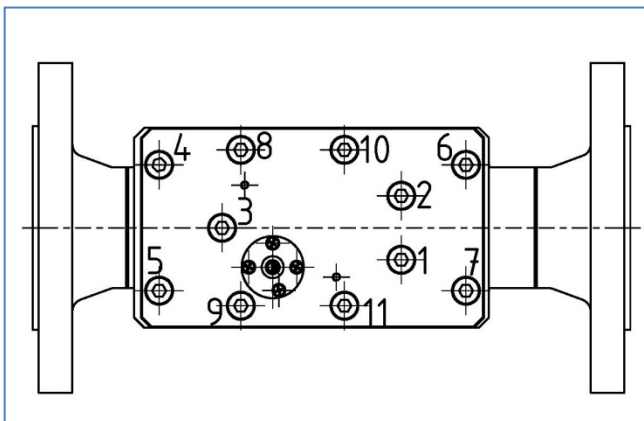
Then unscrew the screws in the upper plate, separate the parts and clean the flow channel of the oscillator on both sides.



Do not use any sharp objects or aggressive cleaning agents. These could damage the oscillator, causing measurement inaccuracies or breakdown of the device. Check the inflow and discharge channel and clean if necessary.

Reassembly takes place in the reverse order. The two gaskets must be replaced and are included in the repair set.

The screws are tightened evenly in two steps: Step 1 -> tighten the screws with a torque of 25 Nm, Step 2 -> after 5 minutes tighten the screws with 30 Nm. The figure at the lower left shows the required order when tightening. Otherwise, the device may leak or be damaged.



14. Technical Information

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

15. Order Codes

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

16. Dimensions

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

17. Disposal

See “General Safety Instructions” - via the QR code on the device or via www.kobold.com

18. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product:

Oscillation Flowmeter Model: DOG-4/-6

to which this declaration relates is in conformity with the following EU directives stated below:

2014/30/EU	EMC Directive
2014/35/EU	Low Voltage Directive
2011/65/EU	RoHS (category 9)
2015/863/EU	Delegated Directive (RoHS III)
2014/68/EU	PED piping (module A2)

Also, the following standards are fulfilled:

EN IEC 61326-1:2021 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements, industrial area (measurement of immunity to HF field up to 1 GHz)

EN IEC 63000:2018 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

AD 2000-Code

EN 13480-1:2017 Metallic industrial piping - Part 1: General

Additional for ATEX devices:

2014/34/EU Equipment and Protective systems intended for use in a potentially Explosive Atmospheres

EU Type Examination Certificate: BVS 13 ATEX E 020 X

Quality Management Production QAN

Certificate number: BVS 24 ATEX ZQS/E110

Notified body: DEKRA Testing and Certification GmbH

Identification number: 0158

and complies with the standards listed below:

- EN 60079-0:2018** Explosive atmospheres - Part 0: Equipment – General requirements
- EN 60079-11:2012** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

Hofheim, 11 July 2025



H. Volz
General Manager

J. Burke
Compliance Manager

19. ATEX-Certificate

DEKRA

Translation

1 **EU-Type Examination Certificate**

2 Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014

3 EU-Type Examination Certificate Number: **BVS 13 ATEX E 020 X** Issue: **01**

4 Equipment: **Flow measuring system type DOG-42***** and DOG-62*******

5 Manufacturer: **KOBOLD Messring GmbH**

6 Address: **Nordring 22-24, 65719 Hofheim/Ts., Germany**

7 This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

8 DEKRA Testing and Certification GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential Report No. BVS PP 13.2048 EU.
This issue of the EU-Type Examination Certificate replaces the previous issue of the EU-Type Examination Certificate BVS 13 ATEX E-020 X including supplements 1 to 2.


9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018	General requirements
EN 60079-11:2012	Intrinsic Safety "i"

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

11 This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following.


	II (1)G [Ex ia Ga] IIC	for transmitter type DOG-42***** and DOG-62*****
	II 1G Ex ia IIC T4 Ga	for sensor type DOG-42***** and DOG-62*****

DEKRA Testing and Certification GmbH
Bochum, 2022-08-01

Signed: Dr. Rolf Krökel

Managing Director

Page 1 of 4 of BVS 13 ATEX E 020 X issue 01 – Jobnumber 342737500
This certificate may only be reproduced in its entirety and without any change.

 DEKRA
Bochum

DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

13 **Appendix**
 14 **EU-Type Examination Certificate**
BVS 13 ATEX E 020 X issue 01

15 **Product description**

15.1 **Subject and type**

Flow measuring device type DOG-42*****,
 consisting of one type transmitter DOG-42***** with one type sensor DOG-42*****,
 and
 Flow measuring device type DOG-62*****,
 consisting of one type of transmitter DOG-62***** with one type of sensor DOG-62*****.

15.2 **Description**

The flow measuring system is intended for flow measuring of gaseous media.
 The flow measuring system consists of a type transmitter DOG-42***** with a type sensor DOG-42***** or of a type transmitter DOG-62***** with a type sensor DOG-62*****.
 The transmitter has to be mounted outside the hazardous area; both apparatuses can be connected via an up to 100 m long cable.

Type Code

type	DOG	-	*	2	**	*	**	*	*	*	*
sign	1-3	4	5	6	7-8	9	10-11	12	13	14	15

- sign 1-3 type**
DOG
- sign 5 state of aggregation of the medium**
4 = for gases
6 = for damp gases
- sign 6 material**
2 = stainless steel 1.4404
- sign 7-8 measurement range**
not Ex relevant
- sign 9 connection type pressure stage**
not Ex relevant
- sign 10-11 nominal size**
not Ex relevant
- sign 12 ball valve**
not Ex relevant
- sign 13 electronics**
 B = Frequency output, 230 VAC
 A = Like "B", for ATEX / IECEx
 C = Frequency output, 110 VAC
 D = Like "C", for ATEX / IECEx
 E = Frequency output, 24VAC
 F = Like "E", for ATEX / IECEx
 G = Totalizer, pulse output, analogue output, 230 VAC
 K = Totalizer, pulse output, analogue output, 110 VAC for ATEX / IECEx
 M = Flow computer, pulse output, analogue output, 230 VAC
 O = Flow computer, pulse output, analogue output, 110 VAC
 Y = Special version



Page 2 of 4 of BVS 13 ATEX E 020 X issue 01 – Jobnumber 342737500
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DEKRA Testing and Certification GmbH, Handwerkstr. 15, 70565 Stuttgart, Germany
 Certification body: Dinnendahlstr. 9, 44809 Bochum, Germany
 Phone +49.234.3696-400, Fax +49.234.3696-401, e-mail DTC-Certification-body@dekra.com

sign 14 length of connecting cable
not Ex relevant

sign 15 options
empty = without

Reason for this issue

- Changes in the type code - options R, H, I, L, N and P have been omitted

15.3 Parameters (unchanged)

15.3.1 Type transmitter DOG-42***** and DOG-62*****

15.3.1.1 Mains circuit (terminals X100:2 and X100:4)

Nominal voltage		AC	230	V
	or	AC	110	V
	or	AC	24	V
Max. voltage	U _m	AC	253	V

15.3.1.2 Power supply (sensor) circuit (terminals X201:1 and X201:3), level of protection Ex ia IIC

Voltage	U _o	DC	8.6	V
Current	I _o		925	mA
Power	P _o		1.17	W

Trapezoid output characteristic

15.3.1.3 Floating opto coupler output circuit (terminals X200:3 and X200:4), level of protection Ex ia IIC

Voltage	U _i	DC	30	V
Effective internal capacitance	C _i		negligible	
Effective internal inductance	L _i		negligible	

15.3.1.4 Ambient temperature range

T _a	-20 °C up to +60 °C
----------------	---------------------

15.3.2 Type sensor DOG-42***** and DOG-62*****

Ambient temperature range	T _a	-20 °C up to +60 °C
---------------------------	----------------	---------------------

16 Report Number

BVS PP 13.2048 EU, as of 2022-08-01

17 Specific Conditions of Use

The sensor has to be mounted in areas where ignition hazard due to impact or friction will be excluded.

The sensor has to be mounted in areas where electrostatic charging / discharging hazard will be excluded.

The connecting cable has to be in a fixed installation if the ambient temperature is below -5 °C.

18 Essential Health and Safety Requirements

Met by compliance with the requirements mentioned in item 9.

19 Remarks and additional information

Drawings and documents are listed in the confidential report.



We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA Testing and Certification GmbH
Bochum, 2022-08-02
BVS-Alt/MGR A20220429







Managing Director



Page 4 of 4 of BVS 13 ATEX E 020 X Issue 01 – Jobnumber 342737500
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20. IECEx-Certificate

		<h3>IECEX Certificate of Conformity</h3>	
<p>INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres <small>for rules and details of the IECEx Scheme visit www.iecex.com</small></p>			
Certificate No.:	IECEX BVS 13.0035X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 3	Issue 2 (2021-08-17)
Date of Issue:	2022-08-10		Issue 1 (2016-11-04)
			Issue 0 (2013-03-01)
Applicant:	KOBOLD Messring GmbH Nordring 22-24 65719 Hofheim/Ts. Germany		
Equipment:	Flow measuring system type DOG-42***** and DOG-62*****		
Optional accessory:			
Type of Protection:	Intrinsic Safety "I"		
Marking:	[Ex ia Ga] IIC for type transmitter DOG-42***** and DOG-62***** Ex ia IIC T4 Ga for type sensor DOG-42***** and DOG-62*****		
Approved for issue on behalf of the IECEx Certification Body:		Dr Franz Eickhoff	
Position:		Lead Auditor and officially recognised expert	
Signature: (for printed version)		 2022-08-10	
Date: (for printed version)			
1. This certificate and schedule may only be reproduced in full. 2. This certificate is not transferable and remains the property of the issuing body. 3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.			
Certificate issued by:		 DEKRA On the safe side.	
DEKRA Testing and Certification GmbH Certification Body Dinnendahlstrasse 9 44809 Bochum Germany			



IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 13.0035X**

Page 2 of 4

Date of issue: **2022-08-10**

Issue No: 3

Manufacturer: **KOBOLD Messring GmbH**
Nordring 22-24
65719 Hofheim/Ts.
Germany

Manufacturing
locations: **KOBOLD Messring GmbH**
Nordring 22-24
65719 Hofheim/Ts.
Germany

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[DE/BVS/ExTR13.0034/03](#)

Quality Assessment Report:

[DE/BVS/QAR09.0001/11](#)



IECEX Certificate of Conformity

Certificate No.: **IECEX BVS 13.0035X**

Page 3 of 4

Date of issue: 2022-08-10

Issue No: 3

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

General product information:

The flow measuring system is intended for flow measuring of gaseous media.

The flow measuring system consists of a type transmitter DOG-42***** with a type sensor DOG-42***** or of a type transmitter DOG-62***** with a type sensor DOG-62*****.

The transmitter have to be mounted outside the hazardous area; both apparatus can be connected via an up to 100 m long cable.

Type Code

See Annex

Parameters

See Annex

SPECIFIC CONDITIONS OF USE: YES as shown below:

The sensor has to be mounted in areas where ignition hazard due to impact or friction will be excluded.

The sensor has to be mounted in areas where electrostatic charging / discharging hazard will be excluded.

The connecting cable has to be in a fixed installation if the ambient temperature is below -5 °C.



IECEX Certificate of Conformity

Certificate No.: **IECEX BVS 13.0035X**

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Date of issue: 2022-08-10

Issue No: 3

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Changes in the type code - options R, H, I, L, N and P have been omitted

Annex:

[BVS_13_0035x_Kobold_Annex_Issue 3_1.pdf](#)