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## Density and Concentration Meter

DIMF1.3 PV  
DIMF2.0 PV  
DIMF2.1 PV

for continuous measurement of liquid density  
and concentration

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## Operating Manual



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## I. Transport, Delivery, Storage

### Storage and transport:

Always protect devices against humidity, dirt, shock and damages.

### Inspection of Delivery:

Check shipment for completeness upon receipt. Compare the data marked on the device with the data on the packing slip and the order documents.

Report any transport damage immediately after the delivery. Damages which are reported later will not be recognized.

## II. Warranty

For the scope and period of warranty, please refer to the contractual terms of delivery.


Claims under warranty shall be conditional to expert installation and start-up in compliance with the operating instructions for the device. The required installation, start-up and servicing work may only be performed by qualified and authorized personnel.


## III. General Safety Instructions

1. Density meters are high-precision and reliable measuring devices. These may only be used according to their purpose. The pressure and temperature limits specified on the type plate as well as the other technical data of the devices and safety instructions must be observed during installation, commissioning and operation of the devices.
2. National and international regulations for the operation of pressurized devices and systems must be observed.
3. Before installation, the operator must ensure that the pressurized parts have not been damaged during transport.
4. The equipment must be installed, operated and maintained by qualified personnel. The operator is responsible for ensuring that the personnel are adequately and appropriately qualified. In the case of doubts, the manufacturer must be consulted.
5. The operator must ensure that the materials used (wetted parts) of the device are chemically resistant to the measuring liquid.
6. For corrosive media, the material resistance of the oscillating tube/fork must be clarified.
7. The gaskets or sealing elements must be handled with care according to the operating instructions.
8. Damaged devices must be taken out of service.
9. If, due to operational reasons (also when starting up and shutting down the system) zone 0 could be present in the pipeline, it must be ensured that no solids can flow in the pipe which generate mechanical impact and friction sparks


## IV. Basic Safety Information

Description of Symbols:

	<p><b>IMPORTANT NOTES!</b></p> <p>Please consider these notes carefully to achieve a reliable functional system. The accompanying text contains important information about the product, handling the product or about a section of the document that is of particular importance.</p>
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	<p><b>WARNING!</b></p> <p>Failure to take the prescribed precautions could result in death, severe bodily injury, or substantial material / product damage.</p>
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## V. Intended Use

	<p>The intended user is not allowed to open, manipulate or dismantle the device. The device may be maintained, serviced or opened only by dedicated and qualified service personnel.</p>
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## 1. Identification

Manufacturer: Bopp & Reuther Messtechnik GmbH  
Am Neuen Rheinhafen 4  
67346 Speyer / Germany  
Phone: + 49 6232 657-0  
Fax : + 49 6232 657-505

Product type: Density and concentration meter

Product name: Density and concentration meter DIMF with pre-amplifier

Version no.: A-EN-06131-00D

## 2. Range of Application

Continuous monitoring of density, mass flow measurement, fiscal measurement, quality control, monitoring of waste water, product recognition, dosing, injection or blending of additives, control of chemical reactions, measurement of concentrations; monitoring and control of distillation, filtration sedimentation, mixing or fermentation processes, process control, measurement of solid percentages in liquids, measurement of foams and suspensions etc.

## 3. Measuring Principle

The DIMF series density transducer is used for continuous measurement of density or concentration for liquids and liquid mixtures.

The proven tuning fork principle (DIMF 1.3) or oscillating U-tube principle (DIMF 2.0 and 2.1) ensures high measuring accuracy with very good long-term stability. The uncomplicated design ensures reliable operation even under harsh operating conditions.

### DIMF 1.3

The sensor of the density transducer is a hollow oscillation fork. The measured liquid passes continuously through the oscillation fork. Excited electromagnetically by an excitation coil, it will oscillate at its natural frequency. Changes in the density of the liquid lead to changes in the natural frequency. This change in frequency, sensed by a pick-up coil, represents the measurement effect. An additional built-in resistance thermometer measures the process temperature, which can also be used to equalise the temperature influence in the transducer.

Each density transducer is calibrated with various liquids of different densities. The transducer constants for calculating the density from the frequency, the calibration temperature and the correction coefficients for the temperature influence can be seen in the configuration data protocol (see Appendix A for example).

### DIMF 2.0 and 2.1

The sensor of the density transducer is an oscillating element in the form of a tube bent into a oscillation fork. The measured liquid passes continuously through this element. Excited electromagnetically by an excitation coil, it will oscillate at its natural frequency. Changes in the density of the liquid lead to changes in the natural frequency. This change in frequency, sensed by a pick-up coil, represents the measurement effect. An additional built-in resistance thermometer measures the process temperature, which can also be used to equalize the temperature influence in the transducer.

Each density transducer is calibrated with various liquids of different densities. The transducer constants for calculating the density from the frequency, the calibration temperature and the correction coefficients for the temperature influence can be seen in the configuration data protocol (see Appendix A for example)

## 4. Technical Data

### 4.1 Density transducer

	DIMF 1.3	DIMF 2.0	DIMF 2.1
Density range	400 to 3000 kg/m <sup>3</sup>		
Calibration range	400 to 1450 kg/m <sup>3</sup>		
Measuring accuracy	better than $\pm 0.01$ % ( $\pm 0.1$ kg/m <sup>3</sup> )	better than $\pm 0.02$ % ( $\pm 0.2$ kg/m <sup>3</sup> )	better than $\pm 0.02$ % ( $\pm 0.2$ kg/m <sup>3</sup> )
		better than $\pm 0.01$ % ( $\pm 0.1$ kg/m <sup>3</sup> ) with special calibration	
Repeatability	better than $\pm 0.005$ % ( $\pm 0.05$ kg/m <sup>3</sup> )	better than $\pm 0.005$ % ( $\pm 0.05$ kg/m <sup>3</sup> )	better than $\pm 0.005$ % ( $\pm 0.05$ kg/m <sup>3</sup> )
Medium temperature	- 40°C to + 100°C	- 40°C to + 150°C (up to 210°C on request)	- 40°C to + 150°C
Temperature compensation	via integrated Pt100 in accordance with DIN Class A directly in the transmitter		
Pressure influence	less than 0.02 kg/m <sup>3</sup> /bar		
Operating pressure	100 bar	100 bar (160 bar on request)	40 bar
Liquid	for non-aggressive liquids or liquid mixtures, especially for hydrocarbons	pumpable liquids	pumpable liquids
Material: wetted parts	special alloy made of NiFeCr and 1.4571	stainless steel 1.4571 or Hastelloy C4 or tantalum or Inconel 600 or Monel 400 or others on request	stainless steel 1.4571, others on request
Material: Transmitter housing	stainless steel 1.4571		
Smallest inside diameter	2 x 5mm parallel	Ø approx. 10 mm	Ø approx. 30 mm
Special features	gasket-free construction, optional material certificates acc. to DIN ISO 10204-2.2	gasket-free construction, optional material certificates acc. to DIN ISO 10204-3.1	gasket-free construction, optional material certificates acc. to DIN ISO10204-3.1
Weight	approx. 3 kg	approx. 4.2 kg	approx. 21 kg
Process connections	internal thread G ¼ ISO 228 Flange DN 10 PN 40 acc. to DIN 2501 (or class 150/300 RF ANSI B 16.5) other pressure stages on request	Swagelok screw couplings for 12 mm outside pipe diameter Flange DN 15 or DN 25 PN 40 acc. to DIN 2501 (or class 150/300 RF ANSI B 16.5) other pressure stages on request, as well as various food connections	Flange DN25 or DN50 PN 40 in accordance with DIN EN 1091 (or class 150/300 RF ANSI B16.5)

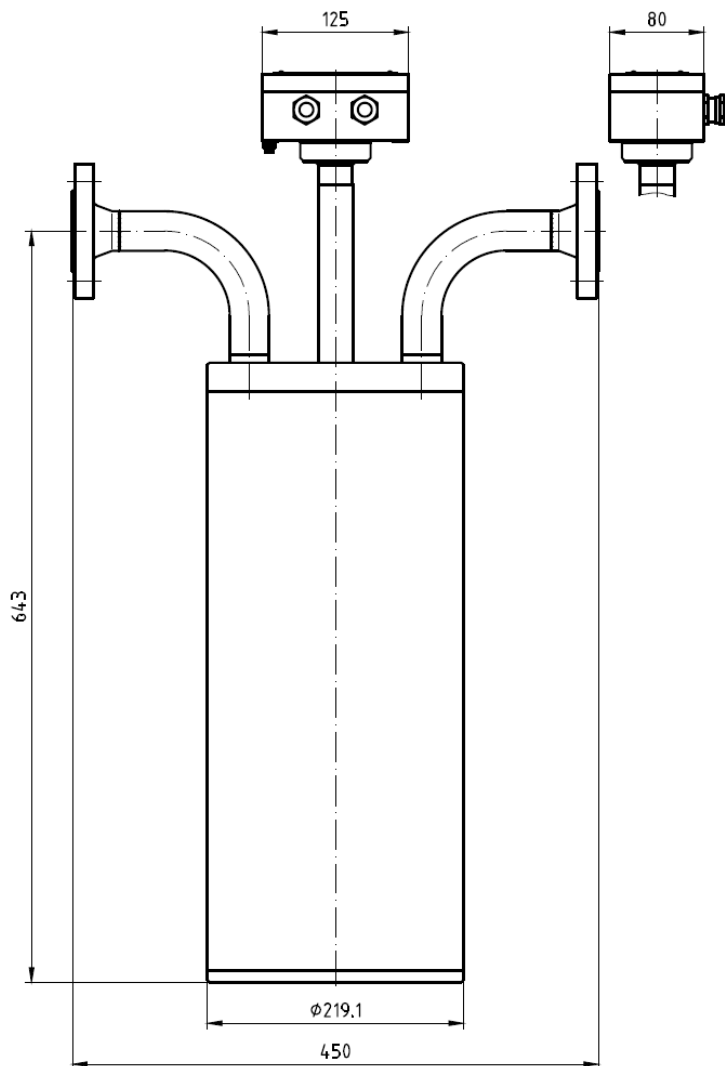
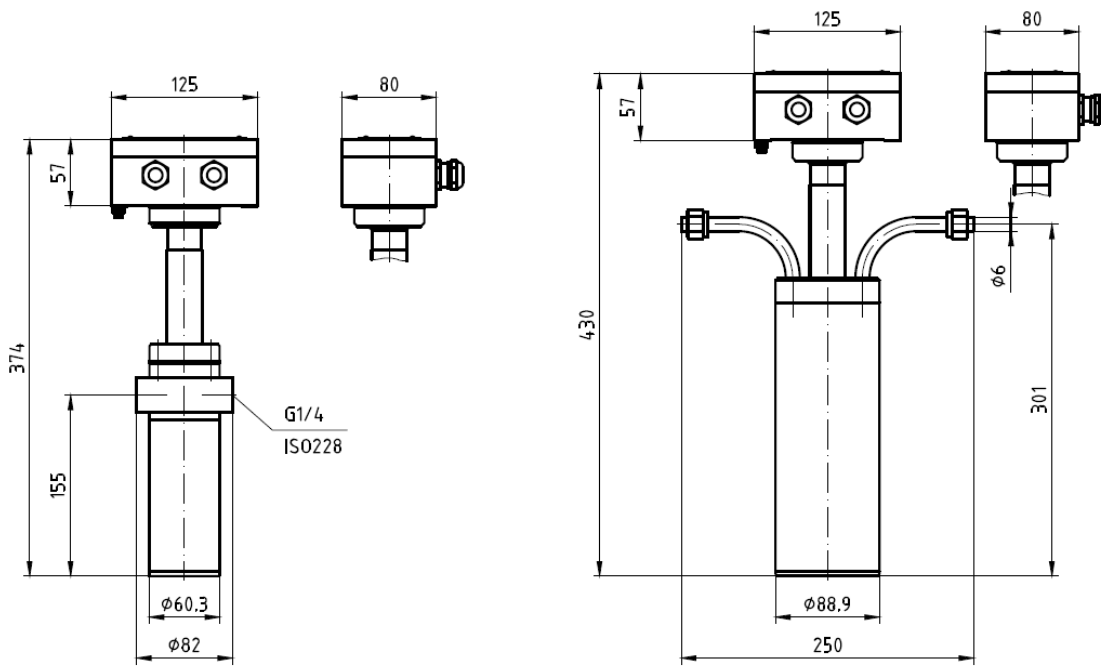
All percentages refer to a density of 1,000 kg/m<sup>3</sup>

For exact specifications of the device version, see the configuration data sheet of the supplied device

## 4.2 Pre-amplifier type PV

Functions	The pre-amplifier excites the oscillating element of the density transducer to its natural frequency; the pre-amplifier type PV is connected to an evaluation computer CSM or other suitable model; parallel operation of a number of density transducers through a single computer is possible
Display parameters	Density, concentration, operating temperature etc. (in the computer)
Output	Frequency density dependent, not linearized, the current is modulated onto the supply current, pulse-pause ratio 1:1, approx. 700-1400 Hz acc. to transducer type, linearization and temperature correction in the computer
Power supply	24 V DC (min. 15 V DC / max. 30 V DC) intrinsically safe 2-wire technology via screw terminals; cable enters via cable gland with M 20 x 1.5 or ½" NPT thread for pipe installation (conduit system)
Temperature connection	4-wire technology via screw terminals; cable enters via cable gland with M 20 x 1.5 or ½" NPT thread for pipe installation (conduit system) (PT100 installed in DIMF)
Cable specification	2 respectively 4 wires, twisted in pairs and shielded
Ambient temperature	-45°C to +85°C
Storage temperature	-45°C to +85°C
Safety class	II 2G Ex ib IIC T5 / T6 DMT 00 ATEX E 092 X acc. to EN 60079-0:2012/A11 EN 60079-11:2012
Degree of protection (housing)	IP65
Dimensions (housing)	60 (H) x 125 (L) x 80 (B) mm
Material (housing)	Cast aluminium
Weight	0.6 kg
Calibration and configuration	according to ordering data at Bopp & Reuther Messtechnik GmbH

### 4.3 Dimensions





## 4.4 Required differential pressure

DIMF-series density transducers are measuring independent from flow rate and at zero flow rate. Its operating is therefore considered hassle-free. However, it has to be ensured that the operating flow rate in the transducer

- updates the sample fast enough
- equalises the temperature in the transducer
- prevents air or gas bubbles or deposits in the oscillating tube / fork
- does not cause cavitation in the oscillating tube / fork
- does not cause wear through abrasives

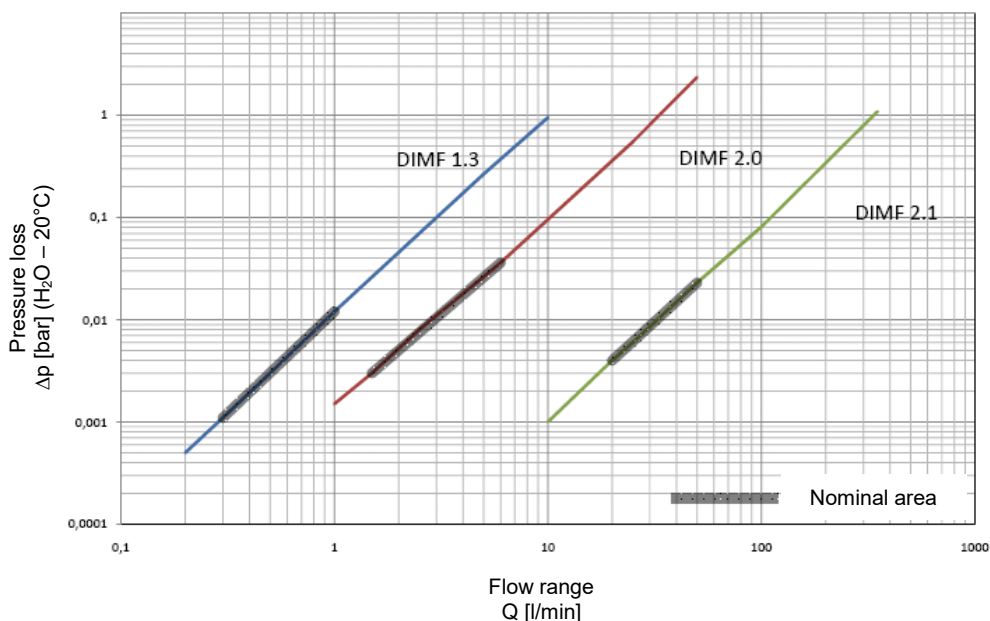
The following operating flows are recommended to ensure a sufficiently fast sample update:

DIMF 1.3	0.3 to 1 l/min
DIMF 2.0	1.5 to 6 l/min
DIMF 2.1	20 to 50 l/min

max. flow range:

DIMF 1.3	0 to 10 l/min
DIMF 2.0	0 to 50 l/min
DIMF 2.1	0 to 350 l/min

## Pressure loss diagram



## 5. Installation / Assembly

The device can be installed directly in the main product line (for possible flow rates, see point 4.4). For larger flow rates or for measurements on tanks, installation in the bypass is recommended.

## 5.1 Density transducer

- Handle the measuring device carefully, do not knock
- Install in the Bypass or the product line
- De-aerate before commissioning
- Ensure constant flow
- Any flow possible
- Flow rate see information chapter 4.4  
(to ensure an up-date sample, prevents sedimentation)
- Avoid steam bubbles
- A clamp or bracket for mounting is recommended  
(accessories: mounting clamps of Bopp & Reuther Messtechnik GmbH)
- For self-draining installation position, it is essential to secure or support the device with a bracket
- The pipe connection bends of the DIMF 2.0 and 2.1 transducer must not be adopted by bending

### Piping

- min. cross section of connecting pipe
 

DIMF 1.3:	6 mm
DIMF 2.0:	12 mm
DIMF 2.1:	DN25
- fit sampling connection laterally if the main line is horizontal
- supply pipe should be as short as possible
- if necessary, provide heat insulation for supply pipe
- if necessary, provide flushing connections close to the density transducer

### Process connections

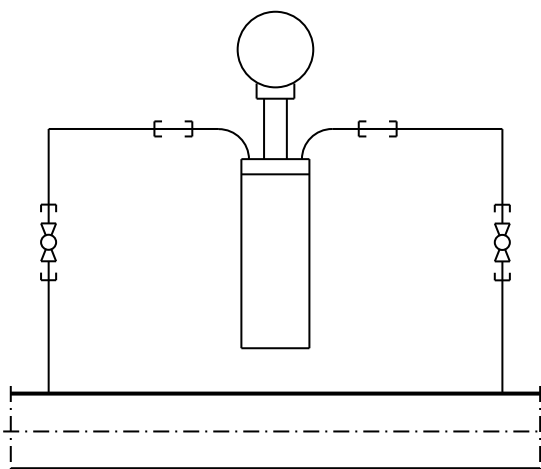
Check whether the connection of your density transducer and the connections of your sample lines match.

The connection type of your density transducer can be found on the supplied data sheet.

## 5.2 Installation in Bypass (using the DIMF 2.0 as an example)

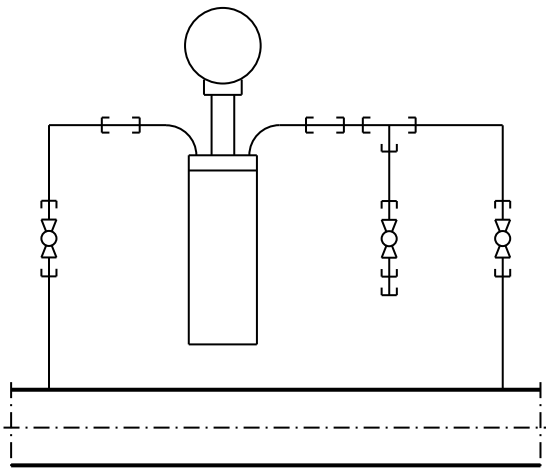
If installed in bypass, the customer must ensure that there is sufficient flow through the device.

### 5.2.1 Standard version



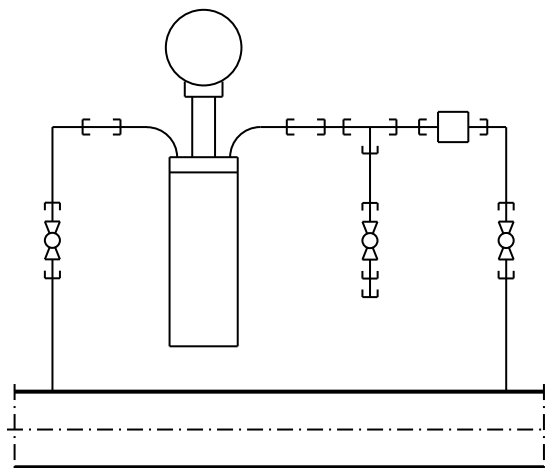
Description	Qty
Plug tap $\varnothing 12$	2
Straight screw connection	2

**5.2.2 with sampling**



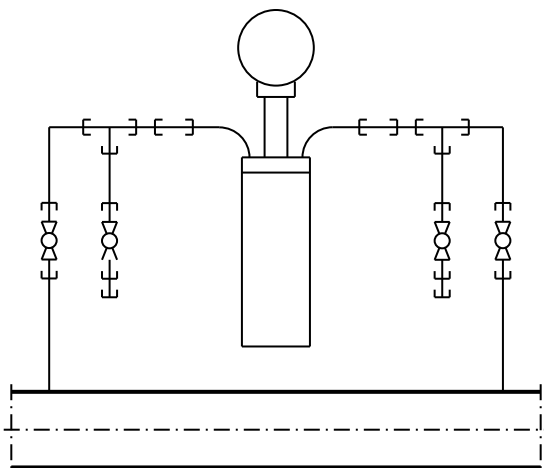
Description	Qty
Plug tap $\varnothing 12$	3
straight screw connection $\varnothing 12$	2
T-fitting $\varnothing 12$	1
Stopper $\varnothing 12$	1

**5.2.3 with sampling and sight glass**



Description	Qty
Sight glass R3/8"	1
plug tap $\varnothing 12$	3
straight screw connection $\varnothing 12$	2
Screw-in fitting R3/8" - $\varnothing 12$	2
T-fitting $\varnothing 12$	1
Stopper $\varnothing 12$	1


**5.2.4 with sampling and calibration or rinsing connection**



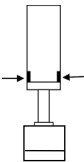
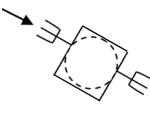
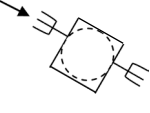
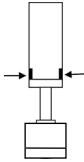
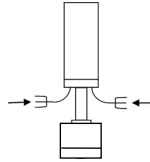
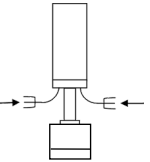
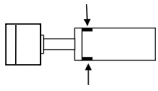
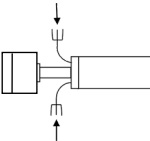
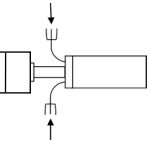
Description	Qty
Plug tap $\varnothing 12$	4
straight screw connection $\varnothing 12$	2
T-fitting $\varnothing 12$	2
stopper $\varnothing 12$	2

### 5.3 Installation in the main product line

Installation in the product main line is possible. Observe the permissible flow ranges (see details under point 4.4). For other viscosities, take into account the pressure loss that differs from that of water.

	<p><b>Caution!</b>                  The pressure in the product line should never fall below the vapour pressure. Keep density transducer out of direct sunlight. If necessary, heat insulation has to be provided. Only half of the supporting tube should be provided with heat insulation.</p>
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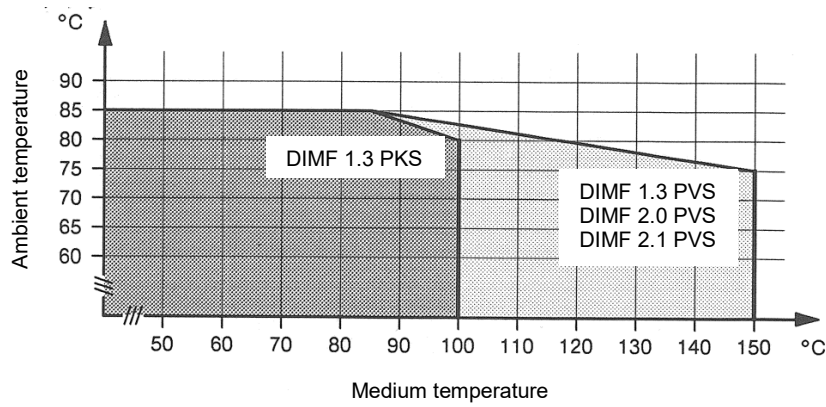
### 5.4 Examples of installation positions

	DIMF 1.3	DIMF 2.0	DIMF 2.1
Standard installation position <ul style="list-style-type: none"> <li>• Clean liquids</li> <li>• Also lower flow rates</li> <li>• Without gas admixtures</li> </ul>	any	any	any
Self-draining installation		 inclination angle 20°-30°	 inclination angle 20°-30°
Installation for liquids which are subject to sedimentation			
Installation for liquids in which gas bubbles can occur		 inclination angle 20°-30°	 inclination angle 20°-30°

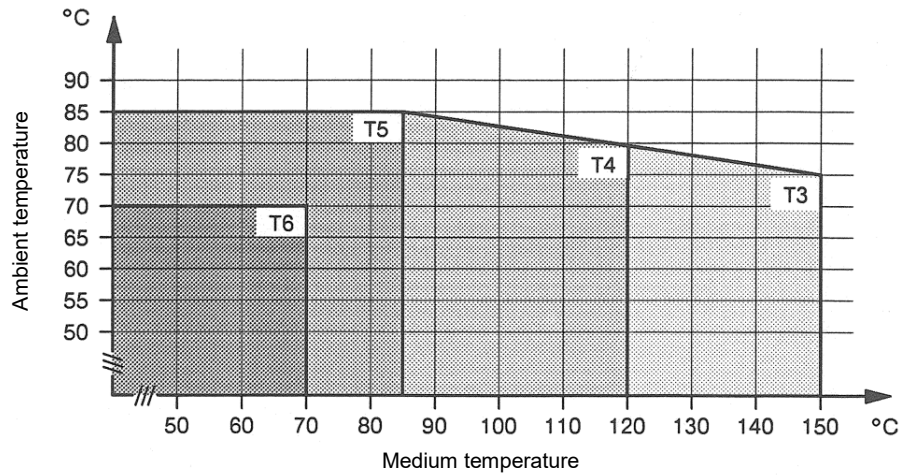
The arrow indicates the possible direction of the flow.

### 5.4 Relationship between the permissible ambient and liquid temperature

#### 5.4.1 Safe area



#### 5.4.2 Hazardous area

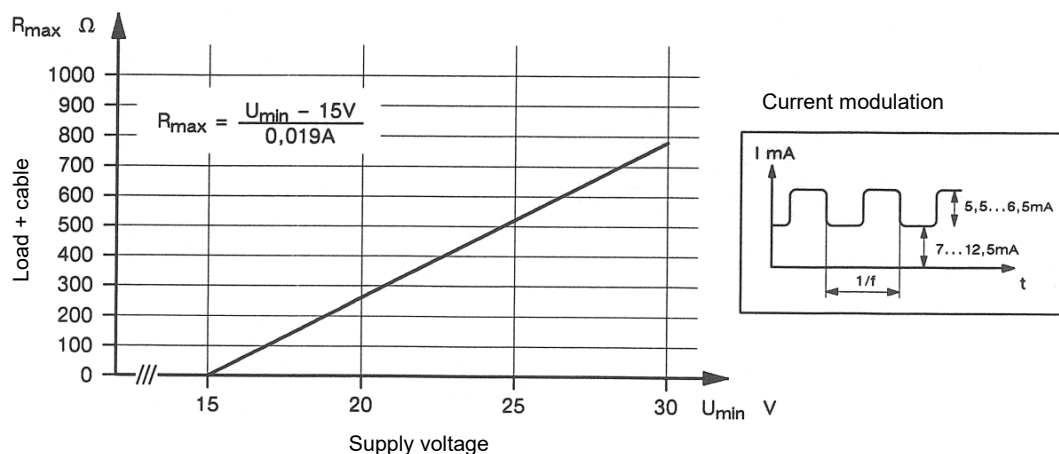


Note: Temperature class T4 and T3 are not listed separately in the Ex-Certificate of Conformity but are automatically included because they are less critical cases. The medium temperatures exceeds 85°C are adjusted to the ambient temperature so that the pre-amplifier PV does not exceed 85°C.

## 6. Electrical connection

### 6.1 Supply voltage

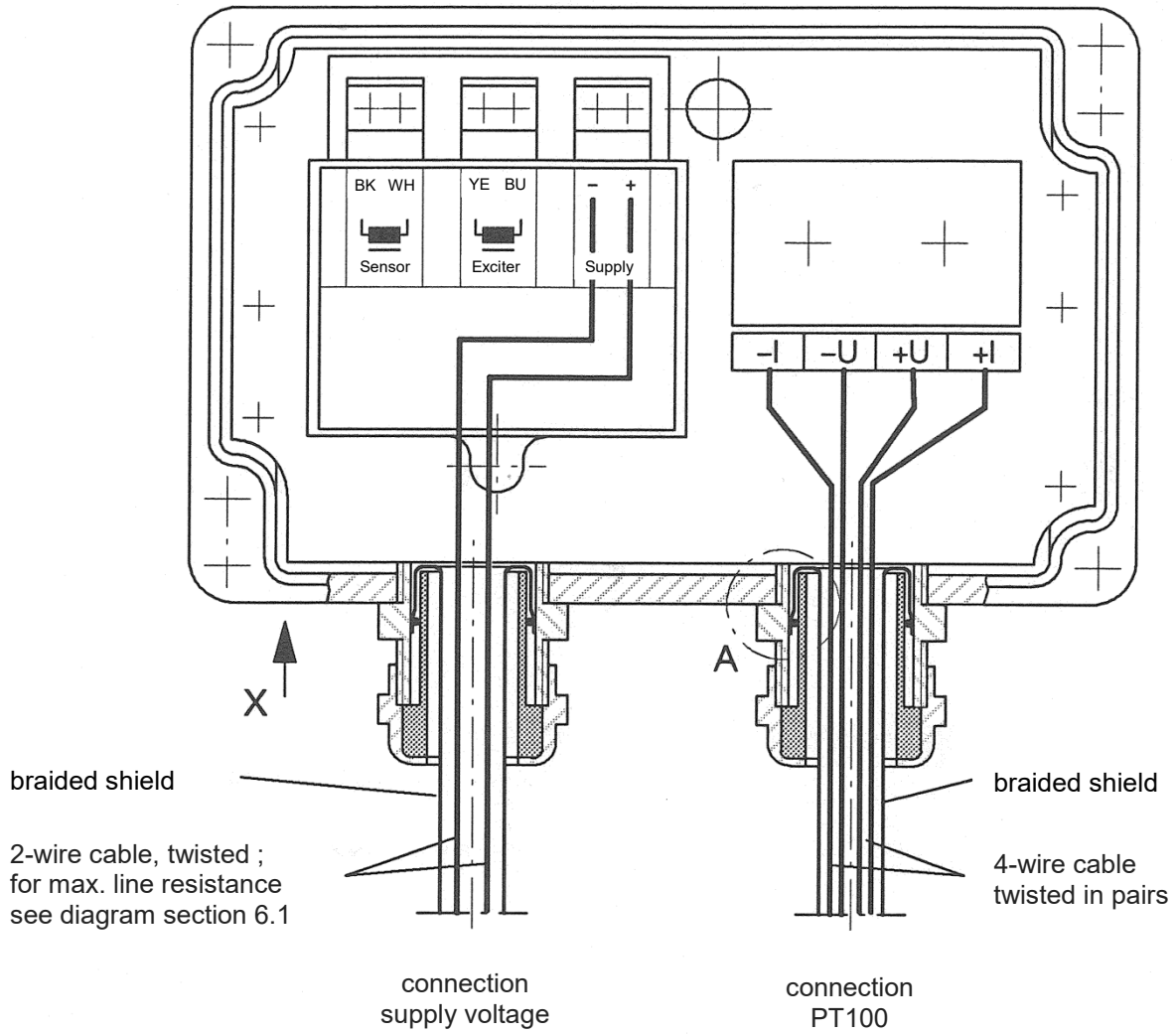
- the pre-amplifier type PV is supplied with 24 V DC, 2-wire technology
- terminal voltage (terminal + and -) 15 ...30 V DC
- current modulation
- 2-wire cables, twisted and shielded, are recommended (cable diameter 6 – 12 mm)
- current modulation  $I_{Low} = 7 \dots 12,5 \text{ mA}$        $I_{Mod} = 5,5 \dots 6,5 \text{ mA}$        $I_{High} = I_{Low} + I_{Mod}$
- cable shielding according to wiring diagram in chapter 6.3
- the maximum sum of cable and load resistance as a function of supply voltage, see diagram below



### 6.2 Connection PT100

- 4-wire cables, twisted in pairs and shielded, are recommended (cable diameter 6 – 12 mm)
- cable shielding according to wiring diagram in chapter 6.3

### 6.3 Wiring diagram pre-amplifier type PV



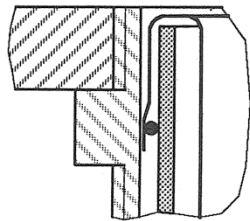
braided shield

2-wire cable, twisted ;  
for max. line resistance  
see diagram section 6.1

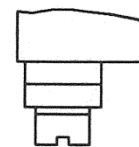
braided shield

4-wire cable  
twisted in pairs

Detail A



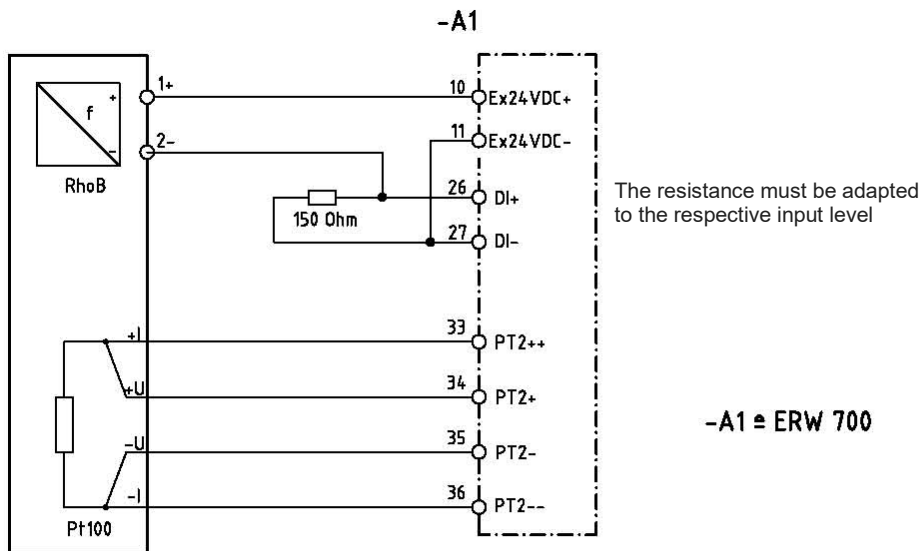
View X



potential  
equalization

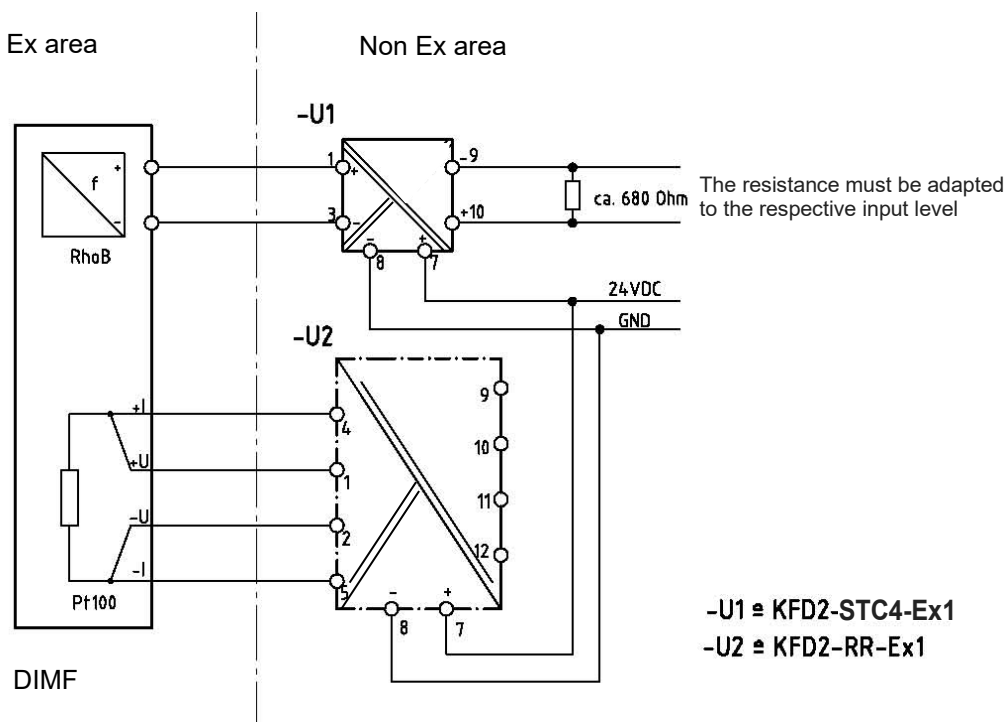
## 6.4 Wiring examples pre-amplifier type PV

### 6.4.1 Non Ex-variant



DIMF

### 6.4.2 Ex-variant



DIMF

Note: The specified terminal designations refer to the isolation blocks listed here by way of example. If other isolators are used, the connection must be made according to the documentation supplied by the manufacturer.



## 6.5 Additional requirements in hazardous area for intrinsically safe operation

- observe installation regulations in accordance with DIN EN 60079-14 / VDE 0165 Part 1
- Power input for frequency terminals

$$\begin{array}{lll} U_i = 30 \text{ V} & I_i = 93 \text{ mA} & P_i = 0.653 \text{ W} \\ C_i = 0 & L_i = 0.2 \text{ mH} & \end{array}$$

- Power input for PT100 terminals

$$\begin{array}{lll} U_i = 30 \text{ V} & I_i = 500 \text{ mA} & P_i = 0.27 \text{ W} \\ C_i = 0 & L_i = 0 & \end{array}$$

- The supply of power must be provided via a certified, intrinsically safe power supply unit or via safety barriers
- Grounding via the external terminals
- If barriers are part of the supply circuit, they also must be connected to the common ground connector

## 7. Maintenance

Cleaning and zero-point adjustment must be carried out as maintenance work.

### Cleaning

Depending on the tendency of the medium to deposit, the density transducer must be cleaned. In the simplest case, the flow rate through the density transducer is increased to the maximum flow rate for a few minutes so that deposits are flushed away. If cleaning cannot be achieved by increasing the flow rate, the density transducer can also be flushed with cleaning fluid if flushing connections are provided in accordance with point 5.2.4 Attention must be paid to the corrosion resistance of the density transducer material.

### Zero point adjustment

The zero point of the density transducer may shift due to abrasion, deposits or corrosion. A zero point shift can be determined by a comparison measurement and corrected by an on-site adjustment. For corrective action, the factor  $K_0$  must be corrected in the computer. For custody transfer systems, this can be done as part of a recalibration.

## 8. Fault detection / troubleshooting

Regular checks of the density transducer facilitate fault detection and can provide information about possible sources of error.

As a rule, the check can be limited to a comparison between the value measured by the density transducer and a reference measurement (e.g. sampling with laboratory measurement or a comparative density meter connected in series).

As requirement the reference measurement is sufficiently reliable and accurate (calibratable if necessary) to ensure correct results. When making this comparison, it must be ensured that the reference conditions are comparable with the actual operating conditions (the temperature coefficient of the liquid used must be taken into account if necessary).

If the value measured by the density transducer does not match the result of the reference measurement, carry out the following measures:

- Check electronics (pre-amplifier PV)  
(electrical connection and power supply as well as cabling up to the density transducer)
- ensure that the data in the configuration log or service list and the programmed parameters of the flow computer are identical
- Inspect the density transducer for gross damage

(annealing colours on the housing due to high temperatures and obvious mechanical damage, e.g. damaged electronics housing, seal, connection terminal, etc.)

- Search for process-related malfunctions (e.g. empty product line, gas bubbles)

A severely damaged density transducer must be dismantled and sent to Bopp & Reuther Messtechnik GmbH (see point 11).

Otherwise, troubleshooting should be carried out as described below. There are three general sources of error:

- Errors caused by the medium (see point 8.1)
- Errors caused by the pre-amplifier PV (see point 8.2)
- Errors caused by the transducer system of the density meter (see point 8.3)

## 8.1 Errors caused by the medium

Error	Possible reason	Remedy
Negative measuring error unstable display	Air locks or gas bubbles in the liquid or inside the transducer	Increase pressure in the product line
		De-aerate the product line
		Increase the flow velocity in the transducer
Positive measuring error long-term drift	Sedimentation in the transducer	Increase the flow velocity in the transducer (recommended value, e.g. 5 m/s)
		Remove any sediments in the transducer with appropriate solvent (observe the corrosion resistance of the transducer)
		Clean the transducer pipe more than once using a scraper with the appropriate pressure (only for DIMF 2.0 and DIMF 2.1. Not for DIMF 1.3!)
Negative measuring error long-term drift	Corrosion	Inspect the material resistance of the transducer
	Abrasion	Reduce the flow velocity in the transducer (recommended value, e.g. 1 m/s)
The displayed value does not change or is too slow Temperature value is too low	Flow in the transducer is too low or zero	Open all shut-off valves
		Increase the flow velocity in the transducer

Errors caused by sedimentation, corrosion and abrasion can often be detected once the density transducer has been disassembled.

If necessary, the density transducer should be returned to Bopp & Reuther Messtechnik GmbH (see section 11) for recalibration.

### 8.2 Errors caused by the pre-amplifier or PT100

Error	Possible reason	Remedy
No frequency signal or absurd frequency	Instantaneous value of the supply voltage is not always between 15 ... 30 V (Measurement with oscilloscope)	Ensure supply voltage, load and line resistance in accordance with chapter 6
	Signal amplitude (tapped on load) is too big or too small	Ensure supply voltage, load and line resistance in accordance with chapter 6
	External computer does not recognize frequency signal because of its DC voltage component	Retrofit capacitor in the input of the external computer
	Cable capacity too high	Reduce cable length or provide low-capacity cable (see section 6)
	Shielding or potential equalization not attached	Place the cable shield or potential equalization line in the cable gland
	Connection of the excitation or transducer coil reversed	Check wiring (see connection diagram, section 6.3)
	Transducer defective	Check excitation and transducer coil (see section 6.3)
	Pre-amplifier defective or terminal defective	Replace the pre-amplifier or send the complete device back to Bopp & Reuther Messtechnik GmbH
Displayed temperature is incorrect	Terminal defective	Replace terminals
	PT100 defective	Send the complete device back to Bopp & Reuther Messtechnik GmbH

### 8.3 Errors caused by the transducer

At first, disconnect the supply voltage and then open the housing. Disconnect all coil and temperature sensor cables from the transducer in order to measure the resistances according to the following data.

	DIMF 1.3	DIMF 2.0	DIMF 2.1
Resistance of the transducer coil (at 20°C) between blue (BU) and yellow (YE)	60 Ω	60 Ω	408 Ω
Resistance of the excitation coil (at 20°C) between black (BK) and white (WH)	60 Ω	125 Ω	408 Ω
Resistance to earth	≥ 100MΩ		

The wires of the temperature transducer are marked with a black shrinkdown sleeve. Resistance values PT 100 between blue (BU) and yellow (YE)

Temperature (°C)	-20	0	20	40	60	80	100	120	140
Resistance (Ω)	92,2	100	108	116	123	131	139	146	154

<b>Error</b>	<b>Possible reason</b>	<b>Remedy</b>
Coil resistance is zero or infinite	Defective coil	Return transducer with additional electronics to Bopp & Reuther Messtechnik
Temperature sensor resistance is zero or infinite	Temperature sensor defective	Return transducer with additional electronics to Bopp & Reuther Messtechnik
Short circuit between a cable and the housing	Ground contact	Return transducer with additional electronics to Bopp & Reuther Messtechnik

## 9. Service

Please contact our service department in the event of faults with density and concentration measuring devices.

Bopp & Reuther Messtechnik GmbH  
 Service  
 Am Neuen Rheinhafen 4  
 67346 Speyer / Germany  
 Phone: +49 6232 657-420  
 Fax: +49 6232 657-561  
 E-Mail: [service@bopp-reuther.com](mailto:service@bopp-reuther.com)


If you receive deviating measured values that you cannot rectify using the options listed in point 9, please also contact the Service department.

Having the following information ready when you first contact us simplifies and speeds up problem solving:

Information on	Where can you find this data	Field for your notes
Serial number of the device	Type plate	
Current vibration frequency	Computer	
Current temperature	Computer	
Current operating density	Computer	
What measured value do you expect?	Laboratory measurement e.g. .... kg/m <sup>3</sup> , .... % at .... °C	
Which medium do you measure?	Operator	
Contact person on site? Phone number?	Operator	

Appendix

A. Example of a calibration certificate

<b>Calibration certificate DIMF</b>			<b>BOPP &amp; REUTHER MESSTECHNIK</b>			
Customer: Chemlepark Medium: Naphta Device serial number: 10012345 Model: DIMF 1.3 Calibration date: 02.04.2024 Inspector: Müller						
	Period (us)	Frequency DIMF (Hz)	Density device (kg/m3)	Density reference (kg/m3)	Error %	Sinker (gr.)
Medium 1	713,03078	1402,464	644,433	644,431	0,000254	46,0031
Medium 2	717,16102	1394,387	789,846	789,877	-0,003863	42,0018
Medium 3	717,89519	1392,961	815,785	815,747	0,004765	41,2901
Medium 4	719,49382	1389,866	872,363	872,372	-0,001030	39,7323

Temperature correction with medium 4:

Temperature (°C)	Frequency DIMF (Hz)	Density device (kg/m3)	Density reference (kg/m3)
39,67	1390,749	856,182	855,226

Device coefficient:

K0: -11381,1165  
 K1: -137,0607  
 K2: 255,7534

Temperature correction coefficient:

KT0: -0,0299  
 KT1: -22,2  
 KT2: 0  
 T<sub>ref</sub>: 20,11 °C

Sinker adjustment:

sinker material:	Quarzglas
date adjustment:	01.04.2024
weight in water:	36,2733 gr.
weight in air:	63,6988 gr.
coefficient of expansion:	0,00000051
sinker constant:	36,34957

Speyer,                      02.04.2024

This protocol was created automatically and is valid without signature

### B. Declaration on Decontamination

**Bopp & Reuther Messtechnik GmbH**  
Am Neuen Rheinhafen 4  
67346 Speyer  
Germany



Telephone: +49 (0) 6232 / 657 420  
Fax: +49 (0) 6232 / 657 561  
Mail: [service@bopp-reuther.com](mailto:service@bopp-reuther.com)  
Web: [www.bopp-reuther.com](http://www.bopp-reuther.com)









ERA number:

#### DECLARATION ON DECONTAMINATION OF METERS AND COMPONENTS

Please complete this form and return in advance by email or by Fax to +49(0)6232 / 657 561 in order to receive an Equipment Return Authorisation (ERA) number (not necessarily required). No action to repair or examine the meter will be done, until a valid declaration of decontamination has been received.

<b>Contact information</b>	
Company Name:	Contact Person:
Company Address:	Name:
	Phone:
	Email:
<b>Meter information</b>	
Type:	Serial no.:
Id. no.:	

Reason for return (e.g. calibration, repair). Please describe in detail.

<b>Contamination information</b>		
The meter was contaminated with: <input type="text"/>		
<input type="checkbox"/> poisonous 	<input type="checkbox"/> corrosive, irritant 	<input type="checkbox"/> flammable 
<input type="checkbox"/> hazardous 	<input type="checkbox"/> oxidizing 	<input type="checkbox"/> cancer-causing, harmful 
<input type="checkbox"/> explosive 	<input type="checkbox"/> environmental hazardous 	<input type="checkbox"/> other: <input type="text"/>
The meter was cleaned with: <input type="text"/>		

#### Packaging and shipping Instructions

- Remove all cables, connectors, separate filters and mounting materials
- Please pack each item in two suitable sealed protective foil bags
- Transport in suitable shipping package (e.g. original Bopp & Reuther Messtechnik shipping package)
- Include a copy of this declaration form along with the shipping documents on the outside

By signing this form, you are accepting the full responsibility for its contents and confirming that appropriate decontamination has taken place in accordance with legal regulations.

Print name:  Date:

Legally valid signature:

## C. Certificates

### C.1 Explosions protection certificates

#### C.1.1 EC-Type-Examination Certificate DM 00 ATEX E 092 X

see Homepage: <https://www.bopp-reuther.com/en/download/> EC Type Examination Approvals Bopp & Reuther Messtechnik



## D. EU- Declaration of conformity

### EU - Konformitätserklärung EU - Declaration of conformity UE - Déclaration de conformité

Hiermit erklärt der Hersteller in alleiniger Verantwortung, dass die nachfolgend bezeichnete Baueinheit den Anforderungen der zutreffenden EU-Richtlinien entspricht. Bei nicht mit uns abgestimmten Änderungen verliert diese Erklärung ihre Gültigkeit.

*The manufacturer herewith declares under sole responsibility that the unit mentioned below complies with the requirements of the relevant EU directives. This declaration is no longer valid if the unit is modified without our agreement.*

Par la présente, le fabricant déclare sous sa seule responsabilité que les appareils décrits ci-dessous, correspondent aux exigences de la réglementation UE qui les concerne. Toute modification des appareils sans notre accord entraîne la perte de validité de cette déclaration de conformité.

<b>Hersteller</b> Manufacturer Fabricant	Bopp & Reuther Messtechnik GmbH Am Neuen Rheinhafen 4 67346 Speyer / Germany
<b>Bezeichnung</b> Description Description	Dichtemesser Density meter Capteur de masse volumique
<b>Typ, Modell</b> Type, model Type, modèle	DIMF1.3 / DIMF2.0 / DIMF2.1 mit with avec TR, PV24

<b>Richtlinie</b> Directive Directive	2014/30/EU /UE Elektromagnetische Verträglichkeit Electromagnetic interference Compatibilité électromagnétique	L 96/79
<b>Normen und normative Dokumente</b> Standards and normative documents Normes et documents normatifs	EN IEC 61000-6-2:2019 EN IEC 61000-6-3:2021	

<b>Richtlinie</b> Directive Directive	2014/34/EU /UE Explosionsschutz Explosion protection Protection contre les explosions	L 96/309
<b>Baumusterprüfbescheinigung</b> Type examination certificate Certificat d'approbation de type	ZELM 99 ATEX 0008 X	DIMF-I
	BVS 04 ATEX E 020 X	DIMF-X
	DMT 00 ATEX E 092 X	DIMF*. * (PV24)
	DMT 00 ATEX E 092 X N1	DIMF*. * (PV24-X)
<b>Notifizierte Stelle</b> Notified Body Organisme Notifié	ZELM	0820
	BVS, DMT (DEKRA EXAM)	0158
<b>Normen und normative Dokumente</b> Standards and normative documents Normes et documents normatifs	EN IEC 60079-0:2018	DIMF-I, DIMF-X, PV24, PV24-X
	EN 60079-1:2014	DIMF-X, PV24-X
	EN 60079-11:2012	DIMF-I, DIMF-X, PV24, PV24-X
	EN 60079-26:2015	DIMF-I

Bopp & Reuther Messtechnik GmbH, Am Neuen Rheinhafen 4, 67346 Speyer / Germany  
Telefon: +49(0)6232 657-0, Telefax: +49(0)6232 657-505, Email: [info@bopp-reuther.com](mailto:info@bopp-reuther.com), Internet: [www.bopp-reuther.com](http://www.bopp-reuther.com)

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<b>Richtlinie</b> <i>Directive</i> Directive	2011/65/EU /UE Beschränkung gefährlicher Stoffe <i>Restriction of hazardous substances</i> Limitation de substances dangereuses	L 174/88
<b>Delegierte Richtlinie</b> <i>Delegated Directive</i> Directive Déléguée	(EU /UE) 2015/863 Änderung Anhang II der Richtlinie 2011/65/EU <i>Amending Annex II to Directive 2011/65/EU</i> Modifiant l'annexe II de la directive 2011/65/UE	L 137/10
<b>Normen und normative Dokumente</b> <i>Standards and normative documents</i> Normes et documents normatifs	EN IEC 63000:2018	

Ort, Datum / Place, Date / Lieu, Date:

Speyer, 2023-01-23

  
**Dr. J. Ph. Herzog**  
**Geschäftsführer**  
*Managing director / Gérant*
  
**i. V. J. Riedl**  
**stv. QM Beauftragter**  
*Deputy QM Officer / Adjoint chargé de la qualité*

Bopp & Reuther Messtechnik GmbH, Am Neuen Rheinhafen 4, 67346 Speyer / Germany  
 Telefon: +49(0)6232 657-0, Telefax: +49(0)6232 657-505, Email: [info@bopp-reuther.com](mailto:info@bopp-reuther.com), Internet: [www.bopp-reuther.com](http://www.bopp-reuther.com)

Z-ML-KE DIMF-V11 2023-013-23

**Notes:**

## **Our product portfolio:**

### **Volume flowmeter:**

- Oval wheel meter
- Turbine meter
- Electromagnetic flowmeter

### **Mass flowmeter:**

- Vortex meter
- Compact orifice
- Coriolis mass flowmeter

### **Density and concentration meter (Measuring and testing equipment)**

### **Dosing measurement technology**

- Electromagnetic flowmeter
- Coriolis mass flowmeter
- Oval wheel meter
- Dosing control system

### **Measurement Accessories**

- Processing electronics
- Mechanical indicator
- Pulse pick-ups
- Components

### **Measuring and testing equipment**

### **Conformity assessment according to MID Directive 2014/32/EU**

### **After Sales Service**

Bopp & Reuther Messtechnik GmbH  
Am Neuen Rheinhafen 4  
67346 Speyer  
Germany  
Phone: +49 6232 657-0  
Fax: +49 6232 657- 505  
Email: [info@bopp-reuther.com](mailto:info@bopp-reuther.com)  
<https://www.bopp-reuther.com>

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MESSTECHNIK**

