

Density Meter Catalogue



DIMF 2.0



DIMF 1.3



DIMF 2.1

These products are designed, manufactured and calibrated in the Bopp & Reuther Messtechnik GmbH factory in Speyer, Germany. Distributed throughout Australasia by Measurement Resources Pty Ltd a manufacturing, distribution and Service Company. Our in house Laboratory is accredited by N.A.T.A in the field of Measurement Science and Technology in accordance with ISO/IEC 17025:2005.

Features of DIMF Range

The DIMF range of liquid density meter introduced two wire 4 – 20 mA instrument measurements to the liquid density parameter in 1968.

Since then the range has been expanded now offering variants for many materials of construction with the highest accuracy and Smart integral electronics compliant with world-wide control and communication standards and protocols.

The growing use of density meters for continuous liquid measurement and control increases and assures the product quality while yielding great saving in eliminating sampling and testing procedures. Applications include; settling sludge's to highly corrosive chemical liquids in the petrochemical industries, concentrations of acids, alkaline solutions and the density of mineral oil products.

Measurement principle is based on an integral oscillating element formed as a single element, eliminating bellows or seals, (the mechanical and temperature weak point of other designs) within a gas charged, stainless steel reference chamber. This construction greatly improves the repeatability allowing measurement over wider flows, and temperatures significantly reducing viscosity changes and massively reducing vibration errors. Sensors measure independent of orientation and position, and have a fast response to liquid temperature change. The sensor is self-draining and meets CIP requirements.

The Smart electronics transmitter TR is fitted directly to the measurement chamber. (optional remote mounting).

The smart electronics hold International approvals that allow (subject to local regulation) use in hazardous areas.

The transmitters have data display and programming buttons to configure the transmitter and diagnostics checks. Alternatively a laptop, or communicator using HART® can access the transmitter for commissioning configuration and maintenance operation including a customized calibration matrix functions.

The transmitter also supports user friendly software tools, HART®, PACTware , AMS SensorPort and FDT 1.2 .

Frequency Output Options PV The sensors can be fitted with an alternative pre-amplifier PV in place of the smart TR. Providing a frequency output pulse ratio 1:1, approx 800-1400 Hz 24 volts DC.

DIMF 1.3.

The high accuracy model is designed to achieve high accuracy and long-term stability. Using a NiFeCr fork greatly reduces temperature errors. This model is used for custody transfer duties and is PTB certified as such. Standard connections are ¼" screwed or ½" flanged.

DIMF 2.0.

Offers extensive materials for corrosive and abrasive duties, this with the integrity of a continuous tube make this model suitable for a wide range of chemical, corrosive, and abrasives measurements. Standard connections are ½" screwed or ½" flanged alternatively milk thread or TRI-camp

DIMF 2.1.

The 2.1 shares most of the features of the 2.0 but for larger flow rates. Standard connections are DN 25 and DN 50 flanged connections.

The sensor can be connected directly into the process pipeline, or in bypass mode for larger pipelines.

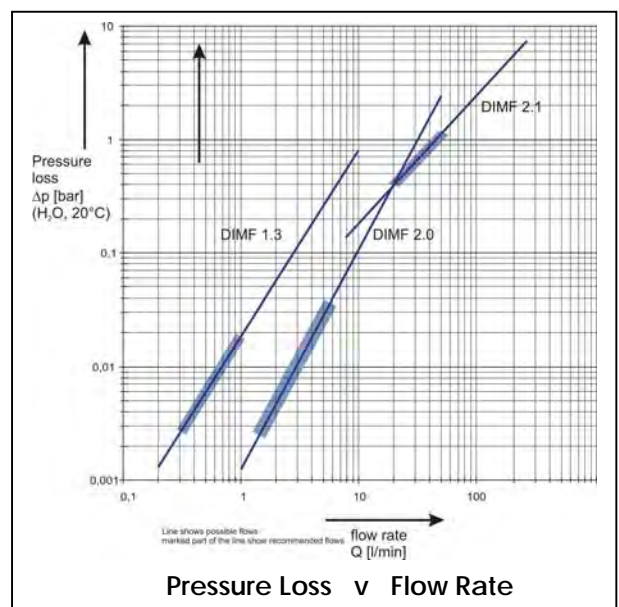
To ensure provide a fast response to density change.

Minimum flow rate of:

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

Maximum flow rate of :

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



Specifications

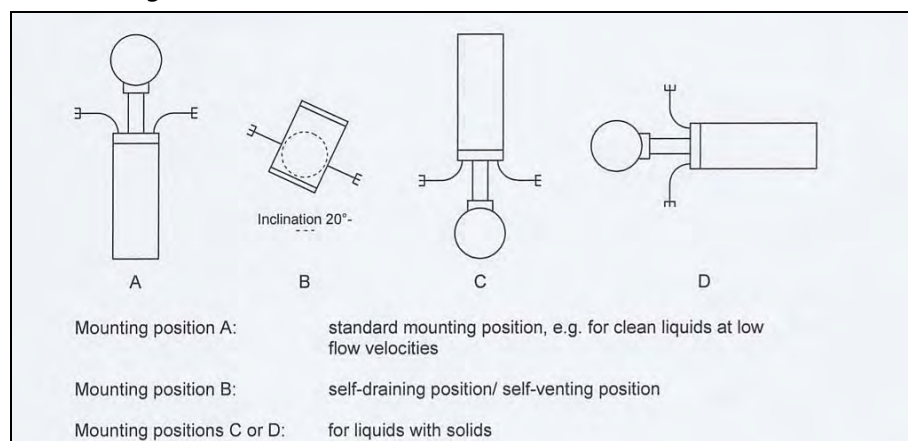
DIMF 2.0 and 1.3

Accuracy (*)	< ±0.2 kg/m ³ (Type DIMF 2.0) < ±0.1 kg/m ³ (Type DIMF 1.3)
Repeatability	DIMF 2.0 - 0.05 % DIMF 1.3 - 0.02 %
Operating Temperature	-40 °C to +150 °C -40 °C to 210 °C upon request
Ambient Temperature	-10 °C to + 85 °C (compact version) Separate version upon request
Process Connection	For type DIMF 1.3: female thread G1/4" ISO 228 or flanges DN 10 /PN 40 (or 1/2" 150/300 RF) For type 2.0 Swagelok fittings, flanges DN 15 or DN 25 acc. To pressure rating PN 40 (or class 150/300 RF) in acc. With DIN 2501 (or ANSI B 16.5) Other pressure ratings and various food connections are available on request.
Electrical Connection	Power supply 14 – 30 VDC 2 wire technology, 4-20mA, HART
Material	Wetted parts, special alloy of NiFeCr (Type DIMF 1.3), stainless steel, Hastelloy, Tantalum, Inconel 600, Monel 400, other materials on request (type DIMF 2.0)
Degree of protection	IP 67 (electronics housing)
Safety class	ZELM 99 ATEX 0008 X II 2G EEx ia IIC T4 (TR) ZELM 00 ATEX 092 X II 2G Eex ib IIC T5/6 (PV) BVS 04 ATEX E 020 X II 2G Eex d[ib] IIC T4 (TR)
EG – declaration of conformity	In accordance with EMV directive 89/336/EWG92/3/EWG. EN 61000-6-3, EN 61000-6-2 and NAMUR NE 21.

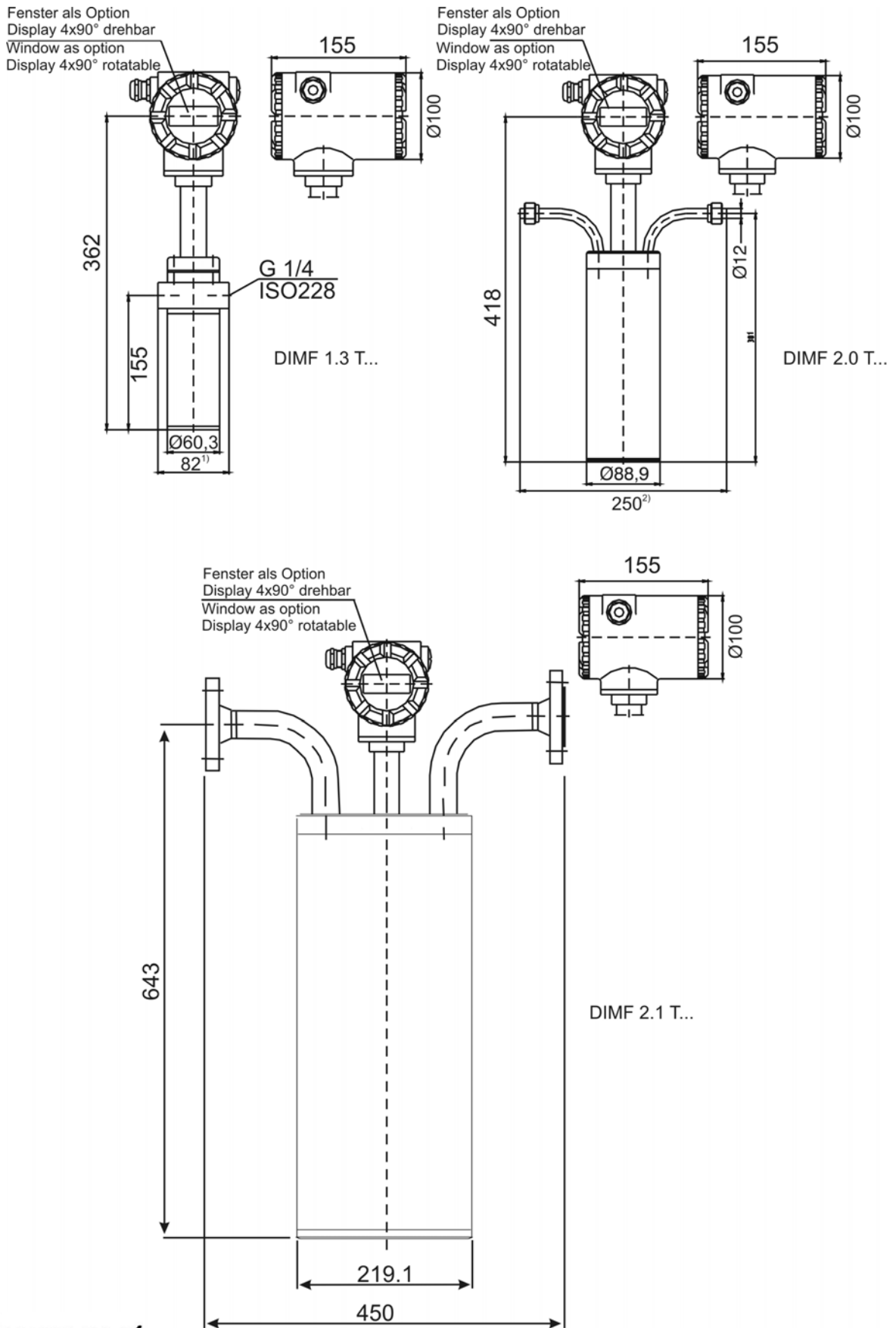
DIMF 2.1

Accuracy (*)	< ±0.2 kg/m ³ (Type DIMF 2.1)
Repeatability	0.05 %
Operating Temperature	-40 °C to +150 °C
Ambient Temperature	-10 °C to + 85 °C (compact version) Separate version upon request
Process Connection	Flanges DN25 or DN50acc. Pressure rating PN40 (resp class 150/300 RF) acc DIN 2501 (resp ANSI B 16.5) other pressure rating and various food connections are available upon request
Electrical Connection	Power supply 14 – 30 VDC 2 wire technology, 4-20mA, HART
Material	Wetted parts, stainless steel, Hastelloy, Tantalum, other materials on request
Degree of protection	IP 67 (electronics housing)
Safety class	ZELM 99 ATEX 0008 X II 1/2G EEx ia IIC T4 (TR) ZELM 00 ATEX 092 X II 2G Eex ib IIC T5/6 (PV) BVS 04 ATEX E 020 X II 2G Eex d[ib] IIC T4 (TR)
EG – declaration of conformity	In accordance with EMV directive 89/336/EWG92/3/EWG., 93/68 EWG, EN 61000-6-2, EN 61000-6-3 and NAMUR NE 21.

Installation of the Density Sensor



Dimensions



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