



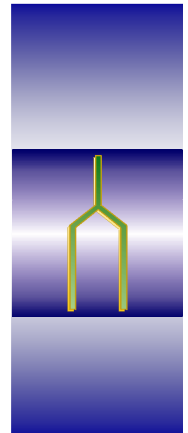
## Now density/concentration measurement is SMART

# Density Meter DIMF Series: Continuous Quality Assurance with HART® Communication

### Designed for the process:

- direct measurement of density, reference density, or concentration
- robust construction
- high accuracy
- 2-wire technique
- low installation costs
- status message for preventive maintenance

Sensors



### Measuring principle

The DIMF series density/concentration meter is based on the oscillating element principle. The fluid to be measured flows through the oscillating element (a tuning fork for Type 1.3, an oscillating tube for type 2.0) that is excited electromagnetically and will oscillate at its natural frequency. Changes in the density of the fluid lead to changes in the natural frequency. These frequency changes will be picked up by the electronic transducer and converted into a signal proportional to density or concentration. The measured variable is available as a 4-20 mA output signal and can be shown on the on-site display. Major applications are process control and quality monitoring of fluids in all areas of industry. The device can also be used for density mass flow conversion for custody transfer in connection with the

corresponding volumetric meters and flow computers.



### Technical data

<b>Measured value (*)</b>	<± 0.0002 g/cm <sup>3</sup> (Type DIMF 2.0) <± 0.0001 g/cm <sup>3</sup> (Type DIMF 1.3)
<b>Repeatability</b>	0.00005 g/cm <sup>3</sup>
<b>Fluid temperature</b>	-40°C to +150°C (-40°C to +210°C on request)
<b>Ambient temperature</b>	-10°C to +58°C (compact version) separate version on request
<b>Process connection</b>	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 DIMF 2.0: Swagelock 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.
<b>Electrical connection</b>	Power supply 14-30 V DC 2-wire technique, 4-20 mA, HART®
<b>Material</b>	Wetted parts: special alloy of NiFeCr (Type DIMF 1.3), stainless steel 1.4571, Hastelloy C4, Tantalum, Inconel 600, Monel 400, other materials on request (Type DIMF 2.0)
<b>Degree of protection</b>	IP 67 (electronics housing)
<b>Safety class</b>	II 1/2G EEx ia IIC T4 ZELM 99 ATEX 0008 X II 2G EEx d [ib] IIC T4 BVS 04 ATEX E020 X
<b>EU declaration of conformity</b>	In acc. with EMC directive 89/336/EWG, 92/3/EWG, 93/68 EWG, EN 50081-1, EN 50082-2 and NAMUR NE 21

### Measuring ranges

	DIMF	Type 1.3	Type 2.0
<b>Density range</b>		0 to 5 g/cm <sup>3</sup>	0 to 5 g/cm <sup>3</sup>
<b>Operating flow rate maximum value</b>		0 to 10 l/min	0 to 50 l/min
<b>Operating flow rate recommended value approx.</b>		0,5 to 1 l/min	2 to 5 l/min
<b>Especially suitable for</b>		Non-corrosive liquids	Non-corrosive and corrosive liquids
<b>Version for fiscal metering</b>		available (**)	Not available

(\*) at reference conditions

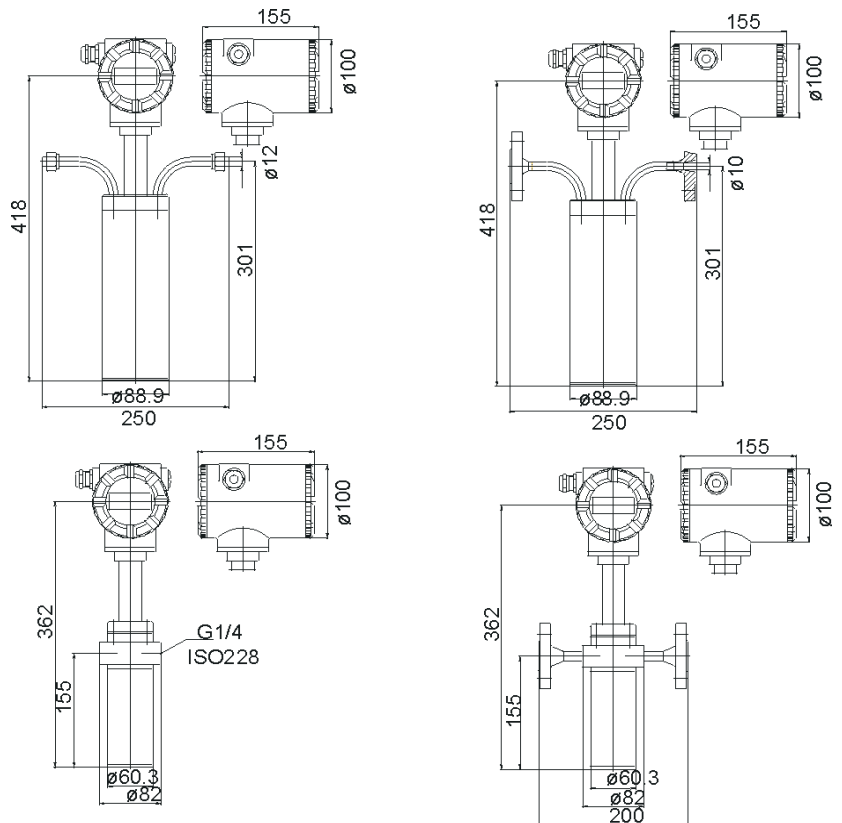
(\*\*) with pre-amplifier type PV24

# Advantages of the DIMF Density Meter

## ... based on the proven oscillating element principle

- Direct measurement of density, reference density, or concentration
- Long service life and high reliability due to the very robust construction
- Very high long-term stability
- Highest accuracy/repeatability
- Maintenance-free
- Measuring element suitable for CIP and SIP, self-draining (Type 2.0)
- Simple installation
- Independent of mounting position
- Resistant to vibration, pressure changes, pulsations, flow-rate changes and product viscosity
- No dead zones, no gaskets

## Main dimensions

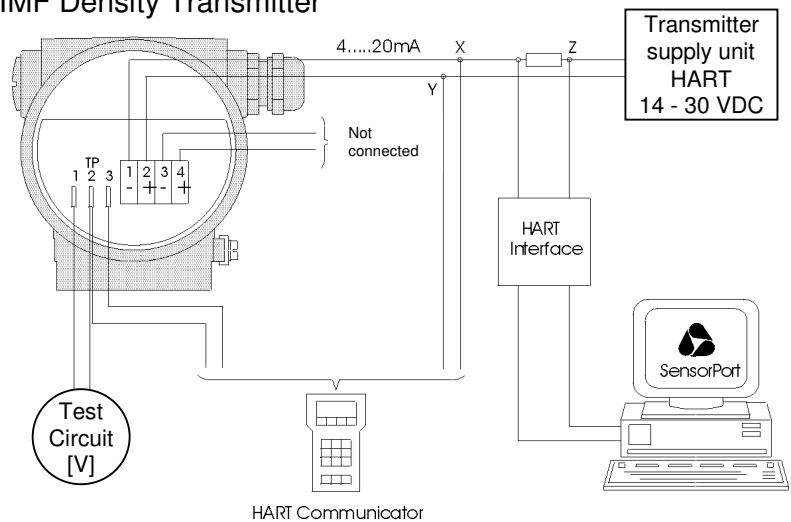


## ... combined with modern electronics suitable for communication

- 2-wire technique
- 4-20 mA output
- Local display
- Various units such as kg/m<sup>3</sup>, Ma%, Vol%, °Brix, Bé or °API
- User-friendly and easy to handle due to the SensorPort display and user interface
- HART protocol (Profibus PA in preparation)
- Hand-held terminal available
- Status messages for preventive maintenance

## Connection diagram

DIMF Density Transmitter



Subject to changes without notice