

DENSITY-AND CONCENTRATION METER

SERIES DIMF

CHARACTERISTICS

Designed for use in medical technology, machine and plant construction, as well as for laboratory applications

- Derivation of a concentration in Vol% or Ma% for 2-substance mixtures
- innovative concept
- robust construction
- high measuring accuracy / reproducibility
- direct measurement of the operating density, the reference density or the concentration of liquid media such as ethanol, propanol, oils, acetone, sugar solutions, glycol, ink, colours etc....
- very compact design
- long service life and reliability

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 electro-magnetically 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 type 1.3 can also be used for density mass flow conversion for custody transfer in connection with the corresponding volumetric meters and flow computers

TECHNICAL DATA

| | |
|------------------------------|--|
| Measured value (*) | <± 0.0002 g/cm ³ (Type DIMF 2.0) <± 0.0001 g/cm ³ (Type DIMF 1.3) |
| Repeatability | 0.00005 g/cm ³ |
| Fluid temperature | -40°C to +150°C (-40°C to +210°C on request) |
| Ambient temperature | -10°C to +58°C (compact version) separate version on 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 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. |
| Electrical connection | Power supply 14-30 V DC 2-wire technique, 4-20 mA, HART® |
| Material | 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) |
| Degree of protection | IP 67 (electronics housing) |

MEASURING RANGE

| DIMF | Type 1.3 | Type 2.0 |
|---|---|---|
| Density Range | 0 to 5 g/cm ³ | 0 to 5 g/cm ³ |
| In order to ensure a sufficiently fast sample updating, experience has shown that an operating flow rate of | 0.3 - 1 l/min recommended (max. possible flow approx. 10 l/min) | 1.5 - 6 l/min recommended (max. possible flow approx. 50 l/min) |
| Especially suitable for | all hydrocarbons | very corrosive media |
| custodian version | available (**) | not available |

(*) at reference conditions

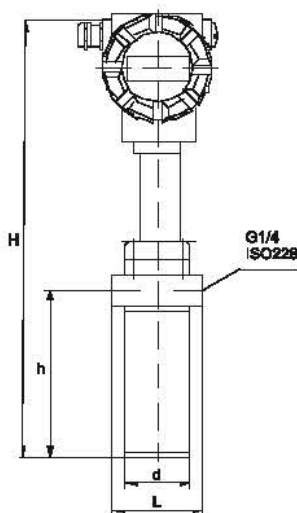
(**) with preamplifier type PV24



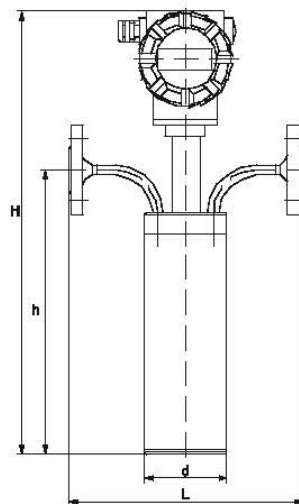
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DIMENSIONS



DIMF 1.3



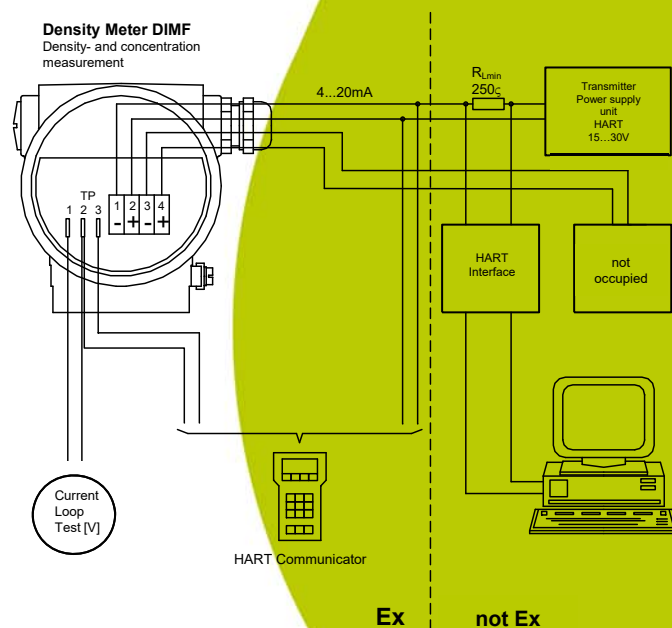
DIMF 2.0

CONNECTION

... combined with modern electronics suitable for communication

Examples for Type „TR“:

- 2-wire technique
- 4-20 mA output
- Local display
- Various units such as kg/m³, 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)
- Operation via HART® Communicator possible



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