



MAIN FEATURES

Product type:	Density meter based on the oscillating U-tube principle with new 2-wire transmitter type TR24 (order code TVS)
Application:	Density and concentration measurement of liquids
Measuring accuracy:	up to $\pm 0.015\%$ ($\pm 0.15\text{ kg/m}^3$, $\pm 0.00015\text{ g/cm}^3$) of the measured value up to $\pm 0.01\%$ ($\pm 0.1\text{ kg/m}^3$, $\pm 0.0001\text{ g/cm}^3$) of the measured value (with special calibration)
Process temperature:	-40°C to 150°C (210°C on request)
Process pressure:	up to 100 bar (160 bar on request)
Housing material:	stainless steel (1.4571), electronics: painted aluminium
wetted parts:	stainless steel, Hastelloy, Tantalum, Inconel, Monel, others on request
Supply:	24 VDC (min. 14 / max. 30 VDC)
Output / display:	4-20 mA and frequency output according to NAMUR or switching output / LCD graphic display, permanent backlighting, plain text menu navigation
Process connection:	compression fittings or flange according to DIN or ANSI (others on request)
Special features:	Instrument version without seals, illustration of complex or confidential media via interpolation point table (in preparation), diagnostic functions (temperature, sensor, medium, supply voltage)

MEASUREMENT RANGE

Recommended Flow range	1.5 - 50 l/min
Density range	400 to 3000 kg/m ³
Calibration range	400 to 1450 kg/m ³
Reproducibility	$\pm 0.003\%$ ($\pm 0.03\text{ kg/m}^3$)

PROCESS CONNECTIONS

- Swagelok® for tube outer diameter 12 mm
- Flange DN 15, DN 25
- ANSI 150 (½", 1"), ANSI 300 (½", 1"), ANSI 600 (½", 1")
- TRI-Clamp DN 15

OUTPUT SIGNALS

Connection: in 2-wire technology

4-20 mA for operating density, reference density (temperature-corrected to reference temperature 15°C or 20°C) or concentration (% mass, % volume, Brix, Bé)

Frequency output according to NAMUR (standard) or as switching output (in preparation, e.g. error, limit value)

APPLICATION EXAMPLES

- Direct operating density or reference density measurement of liquids such as acids, alkalis, hydrocarbons, liquefied gases (propane, butane), glycol, sugar solutions, salt solutions, clear juices, oil, suspensions, solvents, alcohol mixtures, etc.
- Concentration measurement of 2-substance mixtures, product detection, quality control, control and monitoring of mixing processes, gas bubble detection, etc.

Further information and product variants are available on request.