



B-R Controls Pty Ltd



Anton Paar

L-Dens 313

Density Transmitter

::: Unique Density & Concentration Meters



Technical Specifications

Measuring range	
Density	0.5 to 2 g/cm ³
Sample temperature	5 to 75 °C
Standard calibration	10 to 40 °C (other temperature ranges optionally available)
Pressure range	0 to 10 bar
Sample flow range	10 to 100 L/h
Measuring accuracy	
Density	±0.001 g/cm ³ at ±15 °C
Temperature	±0.1 °C
Integrated tables and application programs	
True density, density at reference temperature, °Brix, °Plato, % alcohol, API, customer-specific polynomial	
Environmental conditions	
Temperature	10 to 40 °C
Degree of protection	IP 65
Process connection	
Thread G 1/8" (Whitworth thread, DIN 259)	
Oscillating U-tube	
Diameter ID/OD	2.8 mm/3.2 mm (1/8")
Pipe length	approx. 400 mm
Material	Stainless Steel 1.4571
Assembly	Bypass or inline
Housing dimensions (L x W x H)	220 x 120 x 80 mm
Mounting dimensions (L x W)	204 x 82 mm
Weight	approx. 2 kg
Interfaces	
4-20 mA passive analog output	
RS 232 or RS 485	
Error relay and limit relay	
Profibus DP (optional)	
Power supply	DC 24 V; 0.5 A



Extremely Versatile

Ease-of-use Guaranteed

Wide range of applications

The L-Dens 313 density transmitter is a powerful and flexible measuring instrument for the continuous determination of liquid density and concentration - from the milliliter to the hectoliter scale. The wide range of application programs makes the instrument extremely versatile.

The L-Dens 313 is ideal for applications requiring a density measuring accuracy of $1 \times 10^{-3} \text{ g/cm}^3$.

Easily integrated

The L-Dens 313 density transmitter can be quickly and easily built into measuring systems and plants.

Installation and cleaning are simple: The L-Dens 313 is connected to the production line via a standard flange (G 1/8"). The density sensor consists of one smooth tube. This design simplifies the cleaning process. All wetted parts are made of stainless steel.

The settings can be defined quickly via the intuitive user interface or RS 232.

Practical

The L-Dens 313 density transmitter automatically calculates temperature-compensated density, °Brix, °Plato, % alcohol, API index or customer-specific concentration values. The measurement values are given directly on a 4-line display and sent as a 4-20-mA analog signal, via RS 232/RS 485 or a Profibus DP (optional) for further data processing.

Proven technology

Anton Paar has been producing digital density meters working to the oscillating U-tube principle since the 1960s. The L-Dens 313 density transmitter measures the density of the liquid according to this reliable U-tube method. The resonance frequency of the U-shaped measuring tube and the measured temperature are analyzed by the processor card. The result: automatic calculation of the density, temperature-compensated density or liquid concentration.

Small and compact

The sensor and user interface of the L-Dens 313 density transmitter make up a compact unit which requires a minimum of space.

Attractively priced

The L-Dens 313 density transmitter is practical and user-friendly and also reasonably priced. It provides an affordable way of continuously monitoring the density and concentration of liquids in applications ranging from large production plants to small-scale measurements.

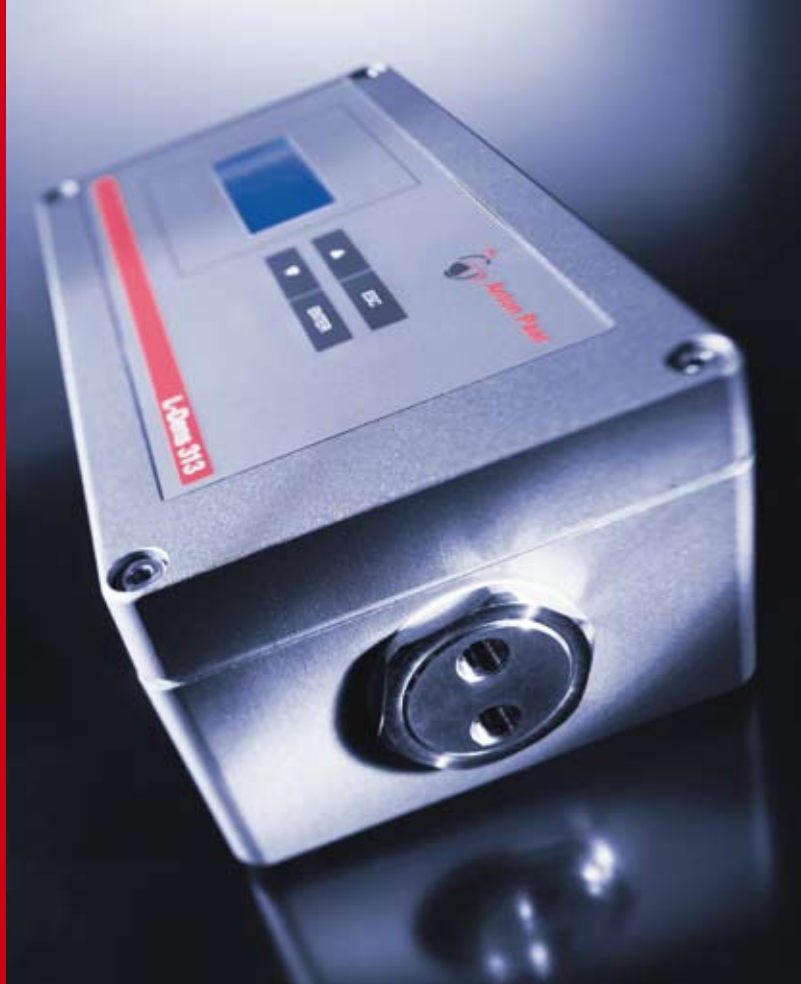
The L-Dens 313 density transmitter reduces your production costs: The online measurement ensures that you always have the specifications under control, enabling efficient and cost-saving production.

Application programs

- ▶ Density at measuring temperature
- ▶ Density with temperature compensation
- ▶ Concentration calculated using a polynomial
- ▶ Sugar concentration in °Brix
- ▶ Extract concentration in °Plato
- ▶ Alcohol concentration in %w/w or %vol
- ▶ Density, API index or SG for petroleum products

Applications

- ▶ Pilot plants
- ▶ Research reactors
- ▶ Chemical industry
- ▶ Cosmetic industry
- ▶ Pharmaceutical industry
- ▶ Petroleum industry



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Instruments for:

Density and concentration measurement

Rheometry and viscometry

Sample preparation

Microwave synthesis

Colloid science

X-ray structure analysis

CO₂ measurement

High-precision temperature measurement



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