



Anton Paar

L-Dens 427

Online Density Sensors

::: Unique Density & Concentration Meters



Continuous, Cost-efficient, Compact

The L-Dens 427 series of density sensors combines an accuracy of $1 \times 10^{-4} \text{ g/cm}^3$ in a compact design. Continuous measurement of density, concentration and API gravity optimizes production processes and ensures a consistently high quality of product. The small and compact design allows for easy integration into measuring stations, for example for mass flow rate measurement.

Over 40 years of experience

Anton Paar is an Austrian company specialized in measuring instruments for industry and research. It all started in 1967: Anton Paar launched the first digital density meter with an oscillating U-tube sensor, marking a turning point for density measurement by replacing old-fashioned hydrometers and pycnometers. Hans Stabinger and Hans Leopold, two renowned Austrian scientists, invented the principle and developed the prototypes, and Ulrich Santner, then head of Anton Paar, took over production. Building on this longstanding experience, Anton Paar invests strongly in research and development, and attaches great importance to the production of high-quality products. With its global network of partners you can rely on local service and support wherever you are.





High Accuracy for Every Application

▶ **High accuracy at a low price**

The L-Dens 427 density sensors score with an outstanding price-performance ratio.

▶ **Easy to integrate**

The compact design allows for easy integration into measuring stations and skids.

▶ **For fiscal measurements**

With its high accuracy and stability, L-Dens 427 is the first choice for fiscal measurements.

▶ **Flexible**

The L-Dens 427 series provides a hazardous area rating, process connection and communication signal to suit your plant.

Applications

L-Dens 427 is used at refineries, ethanol production plants, and in the storage, transport and delivery of petroleum and ethanol products. It measures all low-viscosity, non-corrosive fluids such as the intermediate and end products of refineries, LPG, lubricants, ethanol, biodiesel and chemicals.

Use an L-Dens 427 for:

- ▶ Online density measurement
- ▶ Online API measurement
- ▶ Online concentration measurement
- ▶ Mass flow rate determination in combination with a volumetric flow meter
- ▶ Product differentiation and/or phase separation
- ▶ Product blending
- ▶ Quality control
- ▶ Fiscal measurements

A Combination to Suit Your Plant



Communication

L-Dens 427 uses a communication signal compatible to your plant.

Straight to the flow computer: L-Dens 427F I and L-Dens 427F Ex

A signal proportional to the density as well as the measuring temperature are directly transferred to a flow computer via a frequency output and a Pt 100 interface. The density is calculated using sensor constants in the flow computer.

Straight to the Anton Paar Evaluation Unit: L-Dens 427E and L-Dens 427E Ex

The mPDS evaluation unit calculates the temperature-compensated density, concentration values or further deduced properties and makes them available at standard interfaces for monitoring and controlling purposes.

Straight to the PLC: L-Dens 427T Ex

L-Dens 427T Ex completes the series. It measures density and temperature and calculates the compensated density, API gravity and concentrations. The interfaces Modbus, HART and the 4 – 20 mA analog signal enable simple connection to your measuring and control center.

Connection

L-Dens 427 has a process connection to suit every plant. Swagelok, DIN 2633 and ANSI connections are available as standard. Ask about custom-made connections to exactly fit your installation.

Protection

L-Dens 427 suits your safety requirements. The models include an intrinsically safe version, and flame-proof and explosion-proof versions according to ATEX and FM.

Specifications

	L-Dens 427E	L-Dens 427F I	L-Dens 427E Ex	L-Dens 427F Ex	L-Dens 427T Ex
Interfaces	Connection to Anton Paar Evaluation Unit	Frequency signal for flow computer	Connection to Anton Paar Evaluation Unit	Frequency signal for flow computer	HART, Modbus, analog output (4-20mA)
ATEX		Ex II 1/2G Ex ia IIC T4/5		Ex II 2 G Ex d IIC T4/5	
FM			Class I, DIV 1, Groups A, B, C, D (US) Class I, DIV 1, Groups B, C, D (CA)		
Measuring range			0 to 3 g/cm ³		
Pressure range			0 to 125 bar, depending on the flange		
Recommended flow range			100 to 500 L/h		
Accuracy			1 x 10 ⁻⁴ g/cm ³		
Repeatability			2 x 10 ⁻⁵ g/cm ³		
Ambient temperature range			-40 °C to +70 °C		
Sample temperature range			-40 °C to +125 °C		
Wetted materials			Hastelloy, Stainless steel, MFG and silver solder		
Connections			Swagelok, DIN 2633, ANSI, Tri-Clamp		
Dimensions and weight			226 mm x 112 mm x 97.6 mm (L x W x H) / 3500 g incl. connection kit 12 mm for Swagelok		



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**EASTERN ENERGY
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