



## LIQUID DENSITY & VISCOSITY METER

The innovative DEVIL<sup>®</sup> technology continuously measures these important fundamental properties of liquids: density, viscosity and temperature. With a compact design and approval for use in hazardous areas, DEVIL<sup>®</sup> is ideal for embedding in OEM applications or for large scale deployments in industrial and field environments.

DEVIL<sup>®</sup> is a fully integrated package of sensor and electronics. The MesoScale design relies on precision machining of stainless steel for application flexibility along with flexible communications to integrate measured values easily with data systems. The modular low volume fluidic interface allows DEVIL<sup>®</sup> to be installed in flow-through, tank and sanitary applications.

### DEVIL<sup>®</sup> REAL-TIME OUTPUTS



DENSITY



VISCOSITY (DYNAMIC)



TEMPERATURE

▶ DEVIL<sup>®</sup> can embed derived measurements such as :

- ▶ Kinematic viscosity
- ▶ Specific gravity
- ▶ Temperature compensated density...

### DEVIL<sup>®</sup> BENEFITS



EASY TO INTEGRATE  
COMPACT (< 10 cm)



DURABLE  
WETTED PARTS IN 316L STAINLESS STEEL



COST EFFECTIVE



SAFETY IN HAZARDOUS AREAS  
ATEX / IECEx CERTIFIED (ZONE 0)



### TYPICAL APPLICATIONS



FUEL MANAGEMENT:  
QUALITY, IDENTIFICATION AND INVENTORY



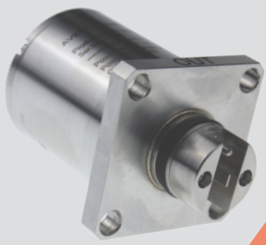
OIL CONDITION:  
ROTATING MACHINERIES



ENHANCED FLOW METERING:  
VOLUME TO MASS CONVERSION



PROCESS AUTOMATION:  
CHEMICAL PLANTS



# LIQUID DENSITY & VISCOSITY METER

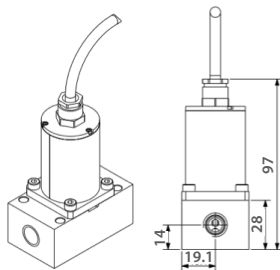
## PERFORMANCES

<b>Calibration ranges</b> (other ranges on request)	Density 650 - 950 / 650 - 1350 kg/m <sup>3</sup> Dynamic viscosity 0.3 - 10 / 1 - 100 cP Temperature 0 ... 85 / -20 ... 65°C
<b>Accuracy</b>	Density From +/- 4.5 to +/-6.75 kg/m <sup>3</sup> * Dynamic viscosity From +/- 0.2 to +/- 2 cP Temperature +/- 0.5°C <small>* Performances can be improved regarding the application</small>
<b>Repeatability</b>	Density 1.5 kg/m <sup>3</sup> Dynamic viscosity From 0.05 to 0.5 cP Temperature 0.1°C
<b>Operating conditions</b>	Temperature -40 ... +105°C (-40 ... +95°C in Ex areas) Pressure 0 ... 25 bar Burst pressure 100 bar
<b>Communication protocols</b> (other outputs on request)	ModBus RTU (RS485), UART (via USB) 4-20 mA, Frequency
<b>Certifications</b>	CE, EMC (EN61326-1:2013, Namur NE21:2011) ATEX II 1G Ex ia IIC T4, IECEx Ex ia IIC T4 Ga, TP TC 012/2011: 0Ex ia IIC T4 Ga X

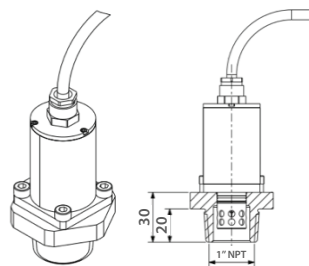


## MECHANICAL INTEGRATION

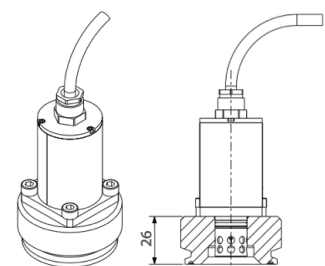
Dimensions in mm.



DEVIL® installation on flowthru baseplate, with fittings from 1/8 to 1/2"



DEVIL® installation on 1" threaded NPT adapter



DEVIL® installation on sanitary tri-clamp adapters (1.5" or 2")

▶ approximate total weight 500gr