

LUWATECH DR-400 series

Viscosity, density, dielectric constant and temperature

4-in-1 Oil Sensor

Product Description

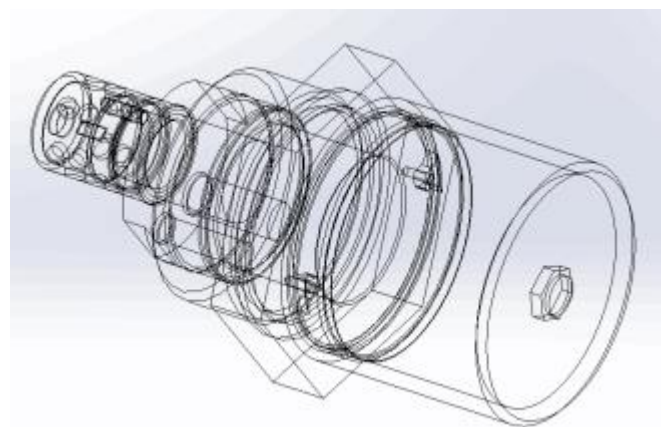
DR-400 four-in-one oil properties sensor is our original core technology products, highly integrated oil viscosity, density, dielectric constant and temperature of the four physical and chemical parameters and a body. DR-400 is simple and easy to use, intelligent monitoring process without the involvement of personnel, all tests are automatically completed by the sensor. Users only need to install it on the oil circuit to achieve real-time measurement of oil viscosity, density, dielectric constant and temperature during the operation of machinery and equipment, users can also use the offline kit to achieve the laboratory analysis of oil.

The appearance of DR-400 greatly increases the user's return on investment, so that the user has a reliable basis for quality control in the production process, but also to provide real-time monitoring data on the stable operation of the user's major equipment, is a compact, intelligent, reliable, feature-rich online monitoring sensor.



Key Features

- Imported probe, high precision measurement
- Four parameters in one: Viscosity, Density, Dielectric Constant & Temperature
- Density accuracy up to $\pm 5\text{kg.m}^{-3}$
- Viscosity range 1~400cP, accuracy up to 5%.
- Wide range of permissible fluid temperatures from 0° C to 100° C
- Fast response, data refresh per second
- Measurement unaffected by external vibration
- All stainless steel for on-line monitoring robustness requirements
- Excellent chemical and pressure resistance
- No moving parts, no consumables, 10 year life span
- Multiple approvals and test reports
- Compact size for easy system integration
- Convenient integrated module for on-site calibration



Intelligent, robust, precise

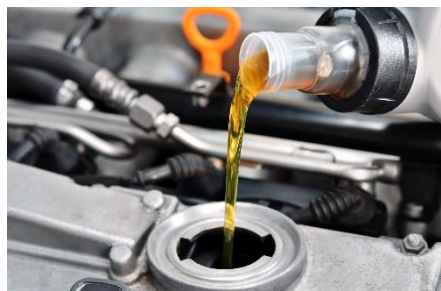
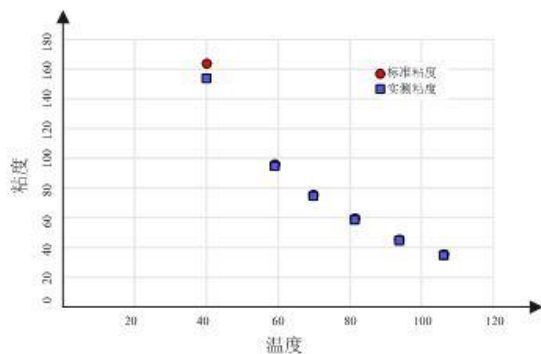
Applicable samples

- lubricants
- Hydraulic oil
- Gearbox oil
- Petrol, diesel
- Aviation fuel
- Paraffin
- Biodiesel
- Ethanol
- Chemical Reagents
- Coatings and Inks
- Food Processing
- Laboratory Analysis

Applications

- Fuel Storage and Transportation Segment
- Refining, Oil Industry
- Wind power
- Thermal power generation and other power generation industries
- Aviation, marine, railway and other transport industries
- Offshore engineering such as drilling rigs
- Large engineering machinery and equipment
- Transport vehicles
- Seawater treatment and testing equipment
- Oil treatment equipment
- Chemical laboratory analysis
- Production Process Quality Management
- Oil Treatment and Filtration Systems
- Coatings, Inks & Printing
- Medical equipment

Accurate detection

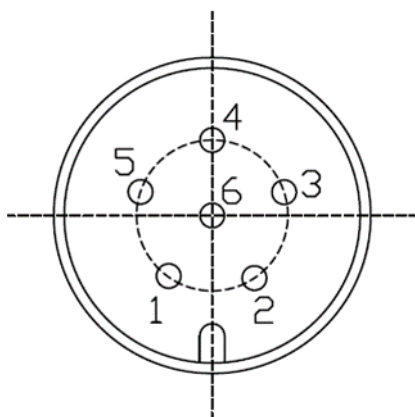


The BDIPPER laboratory uses National Institute of Standards and Technology (NIST) accredited standard solutions for calibration.

Technical parameters

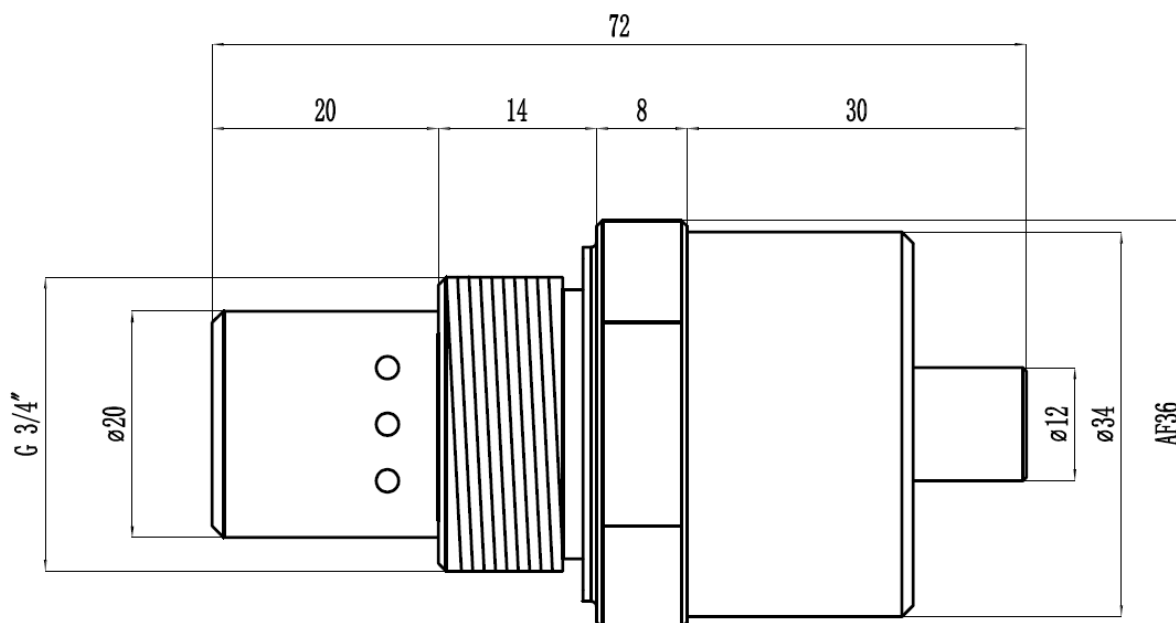
Measurement indicators	Dynamic viscosity (cP), density (kg.m-3), dielectric constant, temperature (°C)	
Measurement range	Viscosity	1cP...400cP(500cSt)
	Density	600 kg.m ⁻³ ...1250 kg.m ⁻³
	Dielectric constant	1...6
	Temperature	0°C...100°C
Accuracy @ 25°C typical	Viscosity	5% or 1cP whichever is the greater
	Density	0.5% or 5kg.m-3 whichever is the greater
	Dielectric constant	3%
	Temperature	0.5°C
Resolution	Viscosity	0.1cP
	Density	0.1 kg.m ⁻³
	Dielectric constant	0.001
	Temperature	0.1°C
Response time	Less than 30 seconds (first time), data refresh 1 time/second	
Digital output	RS485 MODBUS RTU	
Supply Voltage	DC 9-32V	
Power Consumption	< 20mA@24Vdc RS485	
Probe pressure resistance	max 10bar	
Fluid temperature	0°C... 100°C	
Environmental temperature	-40°C... 85°C	
Storage temperature	-40°C... 100°C	
Shell material	316/304 Stainless steel Hastelloy	
Mechanical interface	G3/4"	
Weight	280g	
Protection class	IP65	
Seal Material	FKM fluoroelastomer	
Connection cable	2 m M8 6 core	
Maximum flow rate	<0.1 m/s	
Standards-compliant	CE, ASTM1657, National Metrology and Testing Agency report	
Explosion proof grade	EXia IIB T6 Ga (optional)	
Electromagnetic ompatibility	EN 61326-1 EN 61326-2-3 ICES-003 Class B	

Interface definition (M8 male)



1) RED	DC 9-32V +
2) WHITE	RS485+/A
3) BLACK	GND
4) GREEN	RS485-/B

Structural dimensions (mm)



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