

SIX-PARAMETER OIL/FUEL QUALITY SENSOR

moisture, viscosity, density, dielectric constant, water activity, temperature

MODEL: ZH-600



SINCE 1999

Manufacturer with 25+ years of experience

1.Description

The ZH-600 Six-in-One Oil Property Sensor is a proprietary patented product developed by our company. It integrates six key physico-chemical parameters of oil—viscosity, density, moisture content, water activity, dielectric constant, and temperature—into a single device.

The ZH-600 is simple and easy to use. During intelligent monitoring, no manual intervention is required, as all measurements are automatically performed by the sensor. Users only need to install it on the pipeline to achieve real-time monitoring of oil viscosity, density, trace moisture, water activity, and temperature during machinery operation. Additionally, laboratory analysis of oil samples can be carried out using an offline kit.

The ZH-600 significantly enhances users' return on investment by providing a reliable basis for quality control during production. It also delivers real-time monitoring data to support the stable and reliable operation of critical equipment. Compact, intelligent, reliable, and feature-rich, it is an ideal online monitoring sensor for modern industrial applications.

2.Important Features

- Up to six oil parameters—moisture, density, viscosity, water activity, dielectric constant and temperature.
- The precision is up to 5 kg m⁻³.
- The viscosity ranges from 1 to 1~400cp, and the accuracy reaches 5%.
- Wide allowable fluid temperature, quick response from 0℃ to 100℃, data refresh every second.
- Measurement is not affected by external vibration.
- Full stainless steel, suitable for online monitoring robustness requirements has excellent chemical corrosion resistance and pressure resistance.
- No moving parts, no consumable parts, 10-year-life multiple certification and testing reports.
- Compact structure, easy system integration convenient field calibration integration

3.Applicable medium

- Lubricating Oil
- Gear Box Oil
- Gasoline
- Diesel Aviation Fuel
- Kerosene
- Biodiesel
- Ethanol
- Chemical
- Reagent
- Paint, Ink



4.Application Occasion

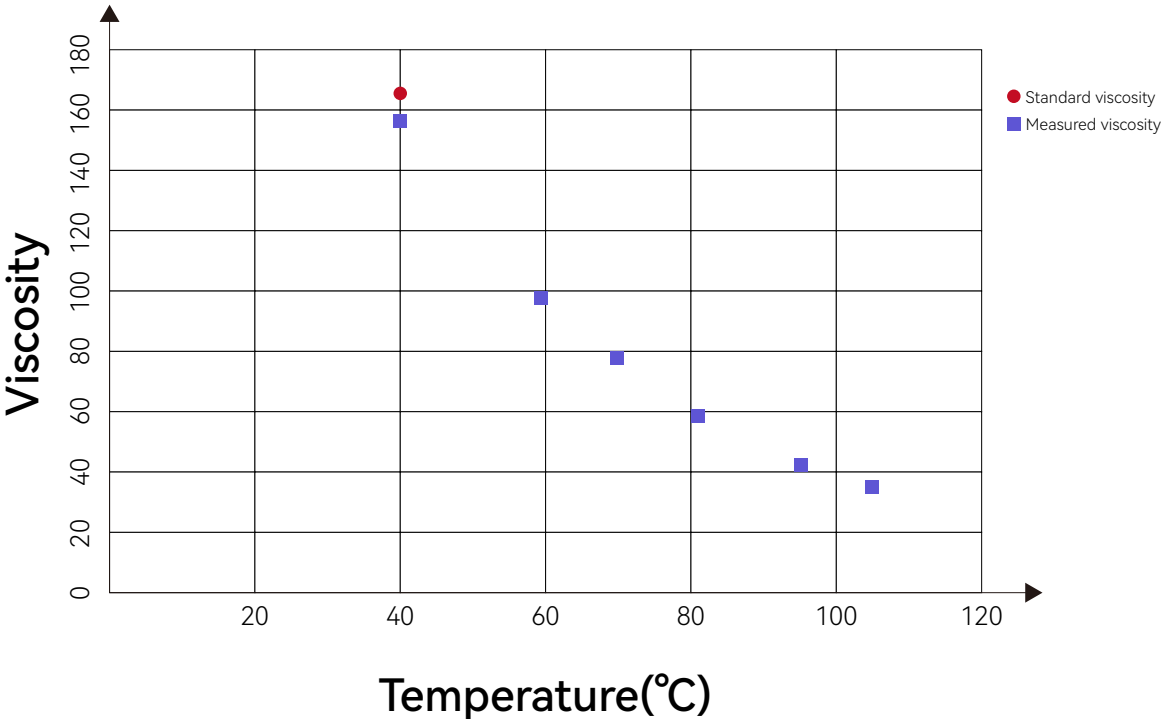
- Oil storage and transportation
- Refining, oil industry
- Wind power generation
- Thermal power generation and other power generation industries
- Aviation, marine, railway and other transportation industries
- Offshore projects such as drilling rigs
- Equipment for large construction machinery



- Transportation vehicles
- Seawater treatment and testing equipment
- Oil treatment equipment
- Chemical laboratory analysis
- Production process quality management
- Oil treatment and filtration system
- Paint, ink and printing industry
- Medical equipment



5.Accurate Detection



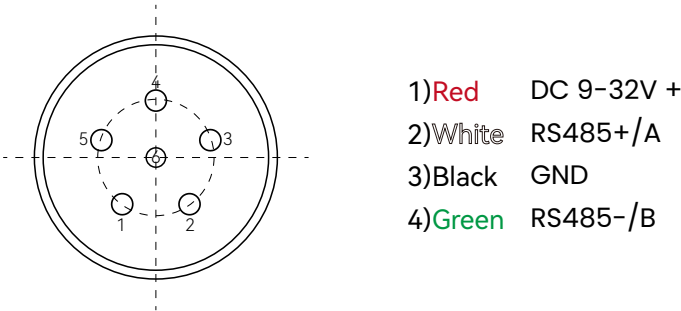
Use the standard solution authorized by NIST to complete the calibration

6.Technical Parameter

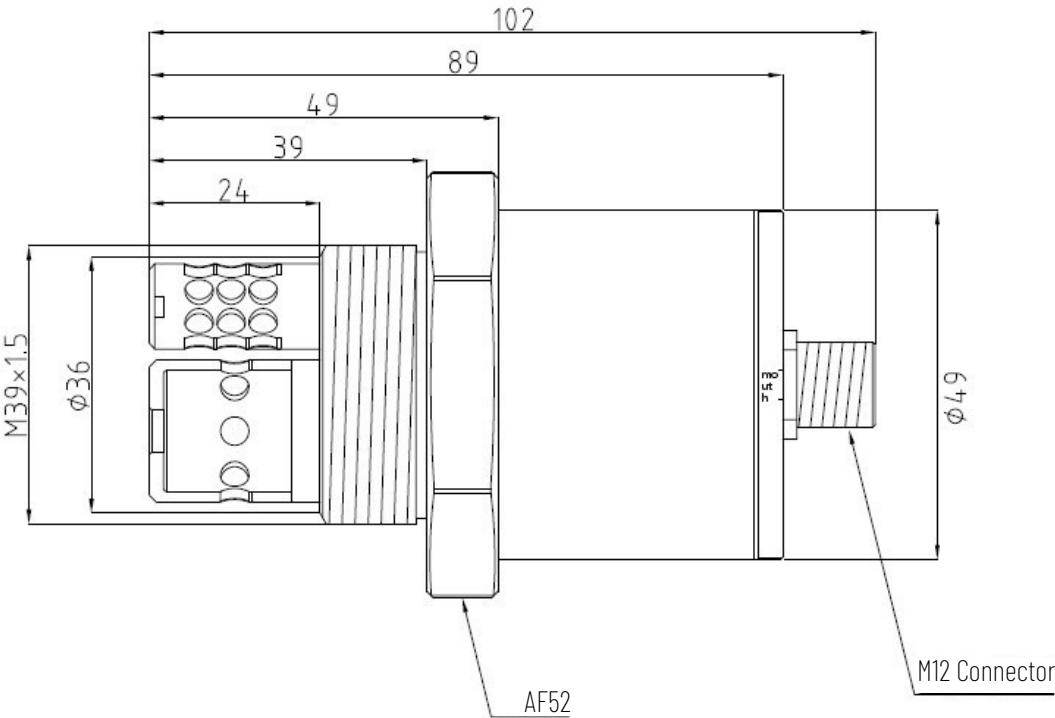
Measurement parameters	moisture (PPM), density (kg. M (M27)), dynamic viscosity (CP), dielectric constant, water activity, temperature (°C)	
Measuring range	viscosity	1cP~400cP(500cSt)
	density	600~1250 kg.m3
	moisture	0~30000ppm(calibrated according to different oil products)
	water activity	0~1aw
	dielectric constant	1~6
	temperature	0°C~100°C
Accuracy at 25 °C typical	viscosity	5% or 1cP (Take the larger value of the two)
	density	0.5% or 5kg.m3
	moisture	10% or 10ppm (Take the larger value of the two)
	water activity	0.03
	dielectric constant	0.05
	temperature	0.5°C
Resolution	viscosity	0.1cP
	density	0.1 kg.m3
	moisture	1ppm
	water activity	0.001aw
	dielectric constant	0.01
	temperature	0.1°C

Response time	less than 30 seconds (the first time), the data is refreshed once per second
Digital output	RS485 MODBUS RTU
Supply voltage	DC 9~32V
Overall power consumption	< 20mA@24Vdc RS485
Probe pressure resistance	max 10bar (If you want larger range, please consult our engineer)
Fluid temperature	0°C~100°C
Ambient temperature	-40°C~85°C
Storage temperature	-40°C~120°C
Housing material	SS316/304 ; Hastelloy
Mechanical interface	G3/4"
Weight	280g
The protection grades	IP65
Sealing material	FKM fluorine glue
Cable jumper	2m M8 6-core cable
Peak flow rate	<0.1m/s
Meet a criterion	CE, ASTM1657, Report of National Metrology and Testing Institute
Explosive-proof grade	EXia IIB T6 Ga (optional)
Electromagnetic compatibility	EN 61326-1 EN 61326-2-3 ICES-003 B grade

7.Interface Definition (M8 male)



8.Structure Size (mm)



Focus on sensor & control since 1999

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