

HWR-580MAcid Resistivity Sensor

Overview

The HWR-580M Acid Resistivity Sensor uses EIS (Electrochemical Impedance Spectroscopy) impedance spectroscopy technology to continuously monitor, measure, and report on the acid value of the oil, as well as the resistivity and temperature of the oil. Compared to traditional commercially available dielectric constant measurement technology, EIS impedance spectroscopy technology improves data detection accuracy by two orders of magnitude. HWR-580M is also capable of real-time, on-line measurement of all types of lubricating oils, hydraulic oils, compressor oils, gasoline, diesel fuel, paraffin and other petroleum product changes.



The HWR-580M is easy to install, with a simple plug-and-play data interface to connect to on-site display and monitoring systems.

Through simple installation and use, the HWR-580M provides real-time insight into the condition of your equipment, helping to avoid potential malfunctions, eliminate unnecessary maintenance, and reduce your operating costs.

Specificities

- **EIS impedance spectroscopy**

Capturing changes in the acid value of fluids

- **Resistivity monitoring**

Rapidly understand the electrostatic safety, electrical insulation, purity and other properties of the oil through real-time monitoring.

- **Upgraded Accuracy and Sensitivity Guarantee**

10⁻¹⁵ resolution, 0.001% subtle changes reliably identified, 100 times more accurate than common dielectric constant sensors

- **Reliable and robust**

New grounding technology for use in the most extreme industrial environments

- **Global Business and Technology Standards Certification**

EN61326-1, EN61000-6-4 EMC certification

Benefit

- 7×24h monitoring of oil conditions provides insight into the true state of equipment
- Enables effective equipment management, improving reliability, efficiency and profitability
- Reduces maintenance costs by accurately identifying oil service life
- Reliably predicts optimal maintenance schedules, eliminating unnecessary maintenance and downtime
- Ensure optimal oil condition and early warning of wear particles and damage before they occur, reducing breakdowns and damage, improving efficiency and extending equipment life
- Reduce oil sampling and consumption, reducing laboratory analyses
- Reduce carbon emissions and help protect the environment



Appliance

Power, Energy
Mining, steel, metallurgy
Shipbuilding, railway
Manufacturing industry hydraulic, lubrication equipment
Petroleum, chemical industry

Applicable oils:

Lubricants, Hydraulic Fluids
Gearbox oil
Engine oils, fuels
Turbine oil
Transformer oil

Parameters

Acid value indicator:

Acid value measuring range	0.000...1.000 mgKOH/g
Acid value resolution	0.001 mgKOH/g
Acid value accuracy (typical)	10% or 0.05 mgKOH/g, whichever is greater.

Resistivity indicators:

Resistivity Measuring Range	$6 \times 10^9 \sim 6000 \times 10^9 \Omega \cdot \text{cm}$
Resistivity Resolution	$0.1 \times 10^9 \Omega \cdot \text{cm}$
Resistivity accuracy (typical)	10% or $1 \times 10^9 \Omega \cdot \text{cm}$, whichever is greater

Temperature indicators:

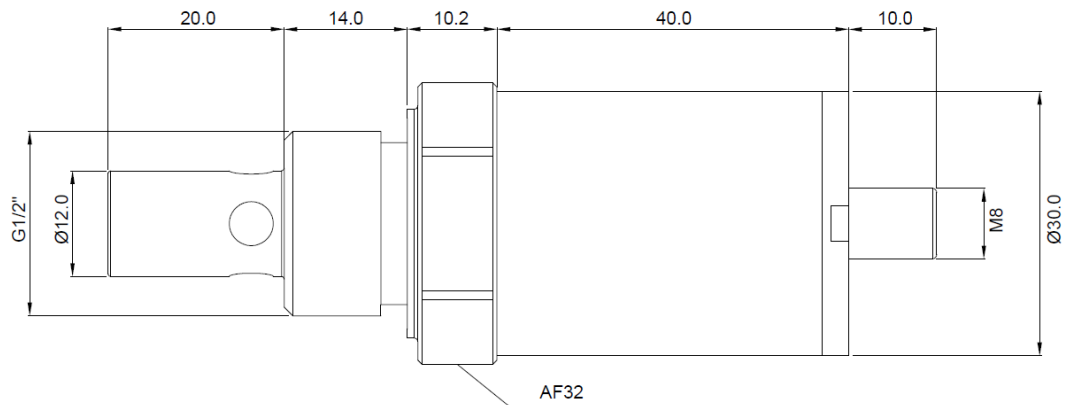
Temperature measuring range	-40...85℃
Temperature resolution	0.1℃
Temperature accuracy (typical)	0.5℃

Other parameters

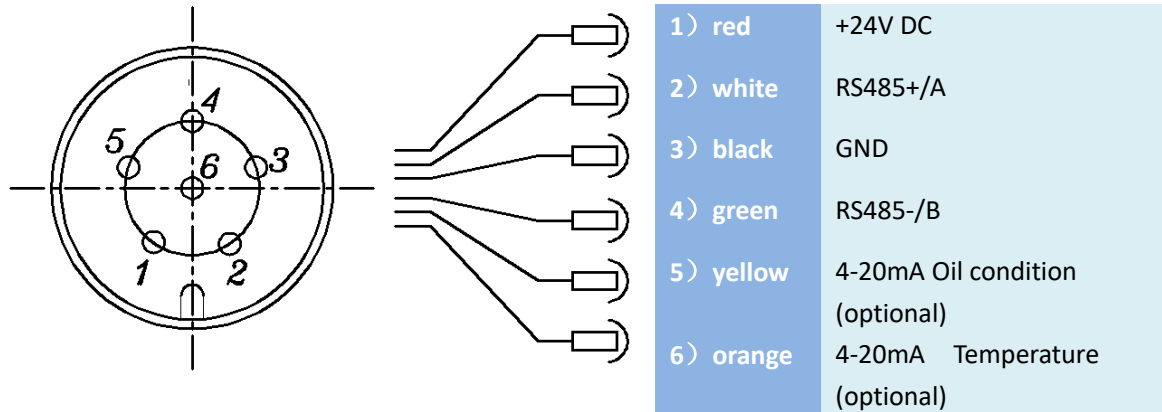
Applicable oils	Suitable for most mineral, synthetic and semi-synthetic oils
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Feedback	Oxidants, water, impurities, acid value, alkali value, wear particles, viscosity change, oil temperature
Export	RS485 digital output, optional (4-20mA analogue output, 4G cloud)
Operating power	DC9V-30V (minimum DC20V if 4-20mA output is selected)
Operating current	<20mA+ Load current
Allowance for work stress	<10bar(Please enquire for more pressure)
Operating temperature	-40...85℃
Probe oil temperature	-40...120℃
Mechanical interface	G1/2" BSP
Sealing material	ED fluoroelastomer sealing ring 23.9*18.5*1.5mm
Torsion	25...30N·m
Electrical interface	M8*1 6 core
Connection cable	6 pole 2m UL20866 6*22AWG (elbow, straight optional)
Shell material	316 stainless steels
Protection class	IP65
Weight	Approx. 260 g
Electromagnetic compatibility standards	EN 61000-6-4 EN 61000-6-2

Overall Dimension (mm)



Wiring (M8 male)



Note: The sensor default signal interface RS485, optional 4-20mA three-wire output + RS485 interface (analogue + digital output at the same time).

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