



D-2 Inc.

Precision Industrial Sensors

JF-1A-MR Multi-Range Conductivity Sensor

0 – 2,000 pS/M or 0 – 200,000 pS/M

The D-2 JF-1A-MR in-line conductivity sensor is a multi-range version of the well-proven JF-1A sensor. The JF-1A-MR provides high-accuracy, long-term monitoring of conductivity of process liquids, including, gasoline, solvents, toluene, acetone, thinners, etc. The sensor has two ranges, either 0 – 2000 or 0 – 200,000 pS/M (0 – 20 pS/cm or 0 – 2,000 ps/cm). Range changes can be programmed for automatic change or manual cross over. In-line measurements eliminate the requirement for manual sampling, reducing staff exposure to potential harmful fluids and vapors.

For the certification of electrical conductivity of aviation turbine fuels, please refer to the D-2 JF-1A sensor.



The JF-1A-MR conductivity sensor is constructed of two 316 S.S. coaxial electrode sensors ($k=.01$), suitable for long-term immersion. The sensor is fully retractable through a 1 inch full-port ball valve, for ease of maintenance. Designed for operation on a variety of pipe diameters, storage vessels, or process lines, the low-power JF-1A-MR operates on loop-provided DC power and provides 4-20 mA output. This output can be scale for any range from 0 to 200,000 pS/m. A second 4-20 mA output of temperature is available and the JF-1A-MR can also be operated in a 4-wire configuration for users requiring serial data output.

Features

- **Real-Time, Dual Range Continuous Conductivity & Temperature**
- **High-Accuracy ($\pm 2\%$ of reading)**
- **Low-Power, 4-20 mA Loop-powered Standard 2-wire Operation**
- **Suitable for Class I Div 2 Hazardous Locations (IEC/CENELEC Zone 1)**
- **User-Defined Temperature/Conductivity Compensation Curve**
- **Fully Removable Under Pressure for Ease of Maintenance**
- **Field re-programmable**

19 Commerce Park
Pocasset, MA 02559

www.d-2inc.com



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JF-1A-MR In-Line Fuel Conductivity Sensor Specifications

Sensors

Parameter	Conductivity Low Range	Temperature
Low Range	0 - 2,000 pS/m* (0 – 20 pS/cm)	-20-60°C*
High Range	0 – 200,000 pS/m (0 – 2,000 pS/cm)	
Accuracy	+/-2 pS/m (+/-2% of reading)	+/-0.5°C
Resolution	0.1 pS/m	0.1C
Sensor Type	316 S.S. Coaxial Electrode	Platinum
Calibration	NIST Traceable	NIST Traceable

*User Programmable Automatic, or Manual Range Change User settable output range, field adjustable.

System

Environmental	Service Pressure: 16 barg max pressure** Ambient Operating Temperature -20 – 60 °C Process Operating Temperature -20 – 40 °C Storage Temperature: -40 –80 °C
Power	2-wire, using 4-20 mA loop, 25-40 VDC External (RS-232 4-wire) 7-40 VDC
Outputs	2-wire 4-20 mA (conductivity and temperature) 4-wire isolated RS-232
Materials	Type 316 SS, Delrin, Cast Aluminum (Housing)
Mounting	To 1” NPT nipple, through 1” full-port ball valve
Certification	ATEX Ex II2G EExd [ia]IIC T4 Cert #KEMA 05ATEX1252 FM/FMc I.S. Probe for Class 1, Division 2, GP ABCD T3C @ Ta = 60C

**100 barg version available but does not include retraction mechanism

Drawing No.	Revision Date
A446-000R-	10-JUL-2008

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