



# D-2 Incorporated

Precision Industrial Sensors

## Real-Cond In-Line Conductivity Sensor JF-1A

Precision Real Time Measurement & Control

ASTM-D2624 Listed 0-2,000 pS/M



The Real-Cond JF-1A In-Line Conductivity Sensor provides real time, high-accuracy, and long-term measurement of liquid chemical conductivity directly in the product line. In-line conductivity measurement, rather than hand sampling, provides significant benefit to operators by offering the ability to measure conductivity at the conditions (especially temperature) in the pipeline. Conductivity is greatly affected by thermal changes, which causes spot testing to be inaccurate because of the thermal change. The JF-1A can be connected to automated refinery/terminal management system to provide a continuous record of product conductivity levels, for reporting purposes, eliminating the requirement for labor-intensive sampling and manual record keeping. In-line conductivity measurement also allows automated polymer addition, eliminating the requirement for manual addition and batch sampling. The JF-1A conductivity sensor is constructed of two 316 S.S. coaxial electrode sensors, suitable for long-term immersion in fuels. The sensor is easily retracted from the fuel line through a 1" full-port SS ball valve, for ease of maintenance. The retractable fitting allows an adjustable insertion depth to optimize positioning of the sensor for the line. Sensor electronics are contained in an ATEX or FM-, CSA-, CENELEC- and UL-certified explosion-proof housing, ensuring safe operation in hazardous locations. Designed for operation on a variety of pipe diameters, the low-power JF-1A operates on industry standard 2-Wire Instrument Loop providing a 4-20 mA output scaled from 0 to 500 pS/m\* (multiple ranges available). A second 4-20 mA output of temperature is standard. JF-1A can also be operated in a 4-wire configuration for users requiring serial data output.

### Exclusive Features for our JF-1A Sensors

- ✦ ASTM D-2624 Listed
- ✦ AC Measurement Technology provides highest accuracy available
- ✦ ATEX, FM, FMc Certified for Zone 1, Class 1 Division 1 Hazardous Areas
- ✦ Real-Time, continuous conductivity measurement
- ✦ Alerts DCS for un-safe low conductivity conditions
- ✦ Alerts DCS for un-deliverable high conductivity fuels
- ✦ Eliminate hand recording the daily conductivity value
- ✦ Labor saving – no periodic hand sampling required
- ✦ Control system input capability
- ✦ Conductivity and temperature output capability

**23 Edgerton Drive, Suite A**  
**North Falmouth, MA 02556**  
**(508) 329-2046**  
**www.D-2inc.com**



# D-2 Incorporated

## Precision Industrial Sensors

- ✦ Stainless Steel construction for durability in corrosive environments
- ✦ Fully removable under full line pressure for ease of maintenance
- ✦ Field re-programmable

### System Specifications

#### Sensors/ Control

Parameter	Conductivity	Temperature
Range	0-500 pS/M, 0-2,000 pS/M	-20° / 60° C -4° / 140° F
Accuracy	+/- 2 pS/M, +/- 2% of Reading	+/- 0.5° C
Resolution	0.1 pS/M	0.1° C
Sensor Type	316 SS Coaxial Electrode	Platinum
Calibration	Internal Source Zero and Scale	NIST Traceable

\* Other Ranges Available, Consult [dfougere@d-2inc.com](mailto:dfougere@d-2inc.com) for information

\*\* ATEX certification max product temperature is 40° C

#### System Specifications

Environmental	Service Pressure: 16 barg max pressure** Storage Temperature: -40° C to 80° C
Power	2 Wire, using 4-20 mA loop, 24- 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 FM/FMc I.S. Probe for Class 1, Division 2 GP ABCD, T3C @ Ta = 60C

\*\* 100 barg max pressure available see JF-1A-HP Data Sheet

\*\*\*ANSI & DIN Flange Mounts Available, Consult [dfougere@d-2inc.com](mailto:dfougere@d-2inc.com)



Drawing No.	Revision Date
A440-000R11	13-OCT-2009

**23 Edgerton Drive, Suite A**  
**North Falmouth, MA 02556**  
**(508) 329-2046**  
**[www.D-2inc.com](http://www.D-2inc.com)**