JF-1A-ST Handheld Ex Conductivity Meter
“Stick Conductivity”

Conductivity Measurement of Distillate Fuels
As Per ASTM D2624; IP 274
DEF STAN 91-091; ASTM D1655; ISO 6297
NSN 6625-01-735-6696

- JF-1A-ST Is Specified in ASTM D2624 & IP 274
- Precise Measurement of Fuel Conductivity & Temperature
- Standard Range 0 - 2,000 pS/m
- FM, FMC, ATEX, IECEX Explosion Proof Hazardous Area Measurement
- Replaceable AAA Batteries. Note: Energizer LN92 Batteries MUST Be Used to Maintain Hazardous Zone Certification.

Stick Shown Mounted On Calibrator

Typical Specifications	
Measurement Range:	0-2,000 pS/m
Temperature:	-30°C to 50°C
Operational Temperature:	-30°C to 50°C
Storage Temperature:	-35°C to 60°C
Temperature Accuracy:	+/- 0.5°C
Resolution:	0.1 pS/m (under 10 pS/m) 1 pS/m (over 10 pS/m) and 0.1°C
Data Output:	IRD Data IN/OUT
Sensor Tip:	316 SS/PEEK/VITON Patented AC Technology
Dimensions:	0.87" (22 mm) BY 8.1" (206 mm)
Weight:	4.85 oz (137.5 grm)

Advantages of the JF-1A-ST Handheld Stick…

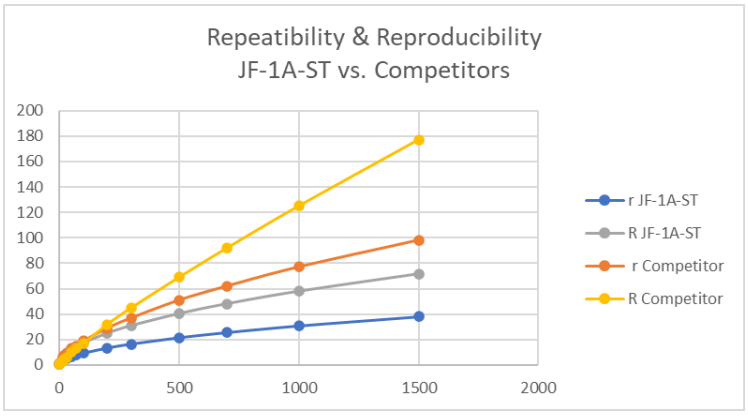
1. Ex Rated, FMc (NEC), ATEX, IECEx for use in Class 1 Div 2 Environments
2. ASTM D2624, with highest available accuracy due to AC Measurement Technology.
3. Provides digital reading of conductivity, and temperature of sample. Values toggle on display for 30 seconds after sample is taken.
4. AC Measurement technology allows for measurement of conductivity in any sample container, no need to relax fuel.
5. Long Battery life due to low power consumption and auto power off function. AAA Batteries can be bought locally and replaced easily. (Use Energizer LN92 Batteries Only)
6. Custom measurement ranges available consult D-2 for options.
7. Lifetime support from D-2 Inc, including a one-year limited warranty on the equipment. We are here to provide support and offer expertise for the readings you are getting in the field.
8. -30° C to 50°C range allowing a wide range of user measurement locations.
9. Field calibration obtained via IRD data link, no need to open the unit.
10. Full validation/calibration can be obtained via JF-1A-ST-VC-SEF standalone device. Users can avoid the need to send the unit back to D-2 for calibration with SEF Box Option.
11. Ergonomic and rugged design: Easy to use. One button operation and ideal for use in harsh environments even when wearing thick gloves. Fits into standard Jet1 Liter Retain Bottles.

D-2 Conductivity Sensors use Patented AC Measurement technology rather than typical DC Measurement technology, here is why:

AC measurement technology eliminates DC measurement errors resulting in more accurate and repeatable results. A DC sensor never reaches measurement equilibrium resulting in the user having to estimate a result based on a time interval of measure. The application of DC voltage forms a battery between the two electrodes of the sensor. At first a large “in-rush” current occurs. The current then slows as polarization voltage builds on the inner and outer measurement electrodes resulting in zero current flow as the charge on the electrodes form an infinite impedance. The users of a DC handheld sensor must guess when the current flow is representative of the fluids’ ability to conduct. Any flow or change in temperature dramatically affects this time dependent measurement. In the Patented AC Conductivity Stick, the voltage is continuously varying from one electrode to the other, no polarization occurs and the measure is flow insensitive, as we can make many measures over any number of cycles, we can obtain very high precision.

The unique and innovative design of the handheld Conductivity Stick, combined with its simplicity, accuracy and repeatability, make it a must for any field or laboratory test kit. Its small diameter and extended reach allow the sensor to be inserted directly into the neck of a standard one liter fuel sampling containers avoiding the need transfer the sample to a separate beaker, minimizing the possibility of contaminating the measurement.

To see how a DC Meter compares to our AC Handheld, please see Graph from ASTM Research Report RR-D02-1680 below:



Stick Verification and Calibration

JF-1A-ST-VC-SEF

Full verification and/or calibration can be performed using the standalone box (-SEF). The SEF box allows for field verification and calibration for multiple Sticks. Each Stick MUST be calibrated a minimum of every 12 months. Verification can be carried out daily, weekly or monthly depending on the end user's quality control procedures, The SEF Box calibration period is set for 5 years. Both the Stick and SEF Box are supplied with a hard copy calibration certificate.

Digital Output in pS/m for Conductivity

The handheld conductivity stick automatically displays the measurement reading in pS/m on the internal high contrast OLED screen, which can be easily read in low and bright light conditions.

Digital Output in Celsius for Temperature

An advance feature of the Stick is the built-in temperature sensor. Reporting in degrees Celsius, and as required by the test method, the sample temperature is also displayed at the end of the test, toggling between the two reports every few seconds. Conductivity is a function of temperature, and both must be recorded.

CE 2809

Ex II 1G

FM C US APPROVED

JF-1A-ST Hazardous Area Certifications

Type	Certificate #	Allowances
FM	FM25US0364X	CL 1, DIV 1, GRP A, B, C, & D, T4 Ta=-30 °C to +50°C
FMC	FM25CA0122X	CL 1, ZN 0, Aex/Ex ia IIC T4 GA Ta =-30 °C to +50°C
ATEX	FM25ATEX0043X	EX ia IIC T4 Ga Ta= -30 °C to +50°C
IECEx	IECEx FMG 25.0048X	EX ia IIC T4 Ga Ta= -30 °C to +50°C

Part Numbers (Partial Consult Factory)

Part Number	Description	Certifications
JF-1A-ST	Standard Handheld Conductivity Stick Meter 0-2,000 pS/m (With Case)	ASTM D2624
JF-1A-ST-VC-SEF	Stick Conductivity Calibrator, Validation Unit Self-Contained, Univ. Power Supply	
JF-1A-ST-RB	Stick Conductivity Replacement Batteries - Energizer LN92 batteries	
JF-1A-ST-CA	JF-1A-ST In-House Calibration	ASTM D2624
JF-1A-ST-SF-CA	JF-1A-ST-VC-SEF In-House Calibration	ASTM D2624
JF-1A-ST-CC2	Stick Conductivity Heavy Duty Carry Case (Holds Sensor & SEF Calibrator, Power Supply)	
JF-1A-ST-1	Handheld Stick Conductivity Meter for Oils, 0-2,000 pS/cm	
JF-1A-ST-2	Handheld Stick Conductivity Meter for Solvents, 0-20,000 pS/m	
JF-1A-ST-3	Handheld Stick Conductivity Meter for Inks, 0-10,000 pS/m	
JF-1A-ST-SP-OR	JF-1A-ST Replacement O-rings (2) - lubricated	
JF-1A-ST-SP-RH	JF-1A-ST Replacement Housing	
JF-1A-ST-SP-RB	JF-1A-ST Replacement Button	
JF-1A-ST-SP-VC-PS	Power Supply for the JF-1A-ST-VC-SEF	

All D-2 Inc. Products are made in the USA.

For more details, please contact D-2 Inc or visit www.d-2.com