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**Features of the EMCEE Model 1153
 DIGITAL CONDUCTIVITY METER
 (ASTM Standard Test Method D 2624)**

**EMCEE
 DIGITAL
 CONDUCTIVITY
 METER**
 convenient reliable
 accurate measurement
 of electrical
 conductivity

- Continuous standard electrical conductivity range from 0 to 2000 picosiemen per meter (pS/m)
- Available in other conductivity ranges
- LED illuminates during automatic test cycle (3 seconds)
- Temperature measured and displayed in Celsius and Fahrenheit
- Data stored (non volatile) until next test cycle is performed
- Hermetically sealed
- Text presentation of operational status
- Automatic over range and low battery indications
- Single pushbutton operation
- Digital, liquid crystal display
- Powered by 3 standard lithium cells
- Applicable intrinsic safety approvals will be obtained



Model 1153
 Meter



1153 w/ Outer
 Electrode
 Detached

APPLICATIONS

The Model 1153 Digital Conductivity meter provides a measurement of electrical conductivity of fluids in conductivity units (CU), which are defined as picosiemens per meter in ASTM D 2624. The rugged Electro/mechanical design of the Model 1153 meter facilitates ease of use for both laboratory and field applications. Initially the meter was designed and developed for safety reasons to measure the electrical conductivity of hydrocarbon fuels, particularly jet fuels. Additional pre-amp versions are available to accommodate measurement of a variety of fluids for different applications.

Safety - Hydrocarbon fuels typically have low electrical conductivity and consequently, are susceptible to retaining a static charge. Static charges are induced, especially, when the fuel is pumped at high rates through filters. Due to the relatively low conductivity, the static charge does not readily dissipate and is retained for a considerable period of time. This condition can result in an explosion and/or fire. Since conductivity is a function of temperature, it is very important to record the fuel temperature at which the measurement was performed.

Process Controls - In addition to safety reasons, electrical conductivity of fluids can be monitored for process control. Proper addition and mixing of various ingredients can be monitored at different stages of production. These applications are not limited to hydrocarbons, but have been expanded to other products; such as paints, solvents, inks, and other non-organic items.

Specifications:

<u>Range:</u>	0 - 2000 pS/m
<u>Resolution:</u>	+/- 1 (0-2k pS/m)
<u>Accuracy:</u>	2% of reading
<u>Controls:</u>	1 Pushbutton, dual function
<u>Display:</u>	Liquid crystal, 5 digits
<u>Safety Ground:</u>	Banana jack on electronics assy.
<u>Power:</u>	Battery, 3 each, 3 volt lithium
<u>Op Temp Range:</u>	32° to 165° F (0° to 75° C)
<u>Dimensions:</u>	Length: 7.5 inches Width: 2.25 inches Depth: 1.7 inches Probe Diameter: 0.75 inches Weight: 8.2 ounces
<u>Carrying Case:</u>	Hard, solvent resistant, molded plastic

Theory of Operation - The EMCEE Model 1153 meter consists of an electronics assembly and a stainless steel probe. The probe, which is similar to a capacitor having concentric electrodes, is immersed into the fluid, up to the set of holes. During the read cycle a relatively small direct current flows through the fluid between the electrodes. The current is amplified in the electronics assembly and is displayed on the liquid crystal display in picosiemens per meter (pS/m). This data is then stored in non-volatile memory and can be retrieved until the next read.

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