



**EMCEE**

**DIGITAL**

**CONDUCTIVITY**

**METER**

convenient  
reliable  
accurate  
measurement  
of  
electrical  
conductivity

**Emcee Model 1153 DIGITAL CONDUCTIVITY METER**

(ASTM Standard Test Method D 2624)

- Continuous standard electrical conductivity range from 0 to 2,000 picosiemens per meter (pS/m)
- Available in other conductivity ranges (from 2000 - 2M Ps/m)
- LED illuminates during automatic test cycle (3 seconds)
- Temperature measured and displayrd 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
- Approved intrinsically safe design for use in hazardous environments by Underwriters Laboratories (UL) U.S., (UL) Canada and LCIE (Europe)

**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 use in many 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.



Model 1153  
Meter



1153 w/ Outer  
Electrode  
Detached

**Specifications:**

<u>Range:</u>	0 – 2000 pS/m
<u>Resolution:</u>	+/- 1 (0-2k pS/m)
<u>Accuracy:</u>	2% of reading
<u>Calibration:</u>	Internal source, field adj.
<u>Controls:</u>	2 Pushbutton, dual function
<u>Display:</u>	Liquid crystal, 5 digits
<u>Safety</u>	
<u>Ground:</u>	Banana jack on electronics assy.
<u>Power:</u>	Battery, 3 each, 3 volt lithium
<u>Op Temp</u>	
<u>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</u>	
<u>Case:</u>	Hard, solvent resistant, molded plastic

**Theory of Operation** – The EMCEE Model 1153 meter consists of an electronics assembly and an aluminum probe. The probe, which is similar to a capacitor having concentric electrodes, is immersed into the fluid, up to the set of holes closet to the electronics assembly. During the rear 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.