



Qualified Conductivity Meters

Specification Reference:
Section 560, Coating New Structural Steel

Last Updated:
11/1/2012 1:01 PM

Hedon Soluble Salt Meter



Soluble Salt Meter (SSM)
(Model #RPCT-07-001)
ISO 8502-9 Equivalent

ARP Instruments, Inc. now offers a Soluble Salt Meter (SSM). The SSM (Model #RPCT-07-001) is a patented design providing a handheld, electronic replacement to the Bresle patch for surface conductivity measurements. The SSM is a patented design that provides a hand held, automated method for detection of soluble salts on both FLAT & CURVED surfaces. The SSM has been independently tested both in laboratory and Navy shipyard facilities and is approved by NAVSEA for use as a replacement to the Bresle patch method in NAVSEA Standard Item 009-32 (FY-10). The SSM is equivalent to the Bresle Method ISO 8502-9 as tested by independent laboratory in accordance with NACE SP0508-2008.

Up to a 1000 measurements can be stored in the SSM and the data can be incorporated into any Coating Technical File (CTF). Surface salt extraction and conductivity measurement combined in one tool allowing convenient, ergonomic operation. The hand held design provides a self-contained, easily transportable unit for soluble salt measurements. The SSM and supplied fluid dispenser allow for quick and accurate injection of deionized water, extraction of surface salts, and conductivity measurement. The SSM is complete with a backlit LCD display and easy to follow on screen instructions. All data is stored electronically, can be downloaded to any PC and exported in Microsoft® Excel file format using the supplied software.

For use by:

- Navy/Marine
- Department of Transportation
- Military Vehicles
- Oil Rigs
- Railcar
- Steel Structures
- Pipelines

FDOT Contact: For consideration of additional conductivity meters, please contact Sue Rose, Field Operations Services Specialist, at Sue.Rose@dot.state.fl.us or 352-955-6688.



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SaltSmart™ Salt Contamination Meter



Accurate Soluble Salt Contamination Measurements in a Portable Low Cost Device

Compliant to NACE SP0508, IMO PSPC, ISO 8502-9, SSPC, US Navy 009-32 FY12 and many other evolving standards

The SaltSmart™ Model 2000 Meter is a light, handheld device for accurately measuring soluble salt content that has been flushed from an accurately measured area on the substrate to be tested. The meter uses conductivity to determine the amount of soluble salts present in the sample. It requires no special calibration. The meter uses provided strips to verify the conductivity relationship. The meter employs easy-to-use menu-driven processes to guide the user through various tasks.

- Results can be displayed and stored in units of $\mu\text{S}/\text{cm}^2$, ug/cm^2 or mg/m^2
- Supports electronic capture of 250 measurements in the meter for later USB download. File formats compatible with Microsoft Excel
- One-time-use disposable device eliminates cross contamination, syringes, and measurements of liquids in the field
- Works on virtually all surface geometries including vertical, horizontal, curved, overhead, magnetic and non-magnetic surfaces
- Faster testing of large surfaces, leaving no residue or contamination after testing

Salt ions are an invisible threat to surface coatings and they are virtually everywhere and on every surface. There are many kinds of salts and the ionic compounds formed may be comprised of chlorides, sulfates, nitrates and other chemical compositions. The basic nature of salt is hygroscopic, meaning that when salts are exposed on a substrate they attract moisture that can lead to flash rusting.

All coatings permeable and in immersion surface generally contain 1% to 3% water. The build up of water between the substrate and the coating combined with soluble ions may create an electrolytic cell — leading to corrosion. Osmotic blistering exposes the substrate, accelerating corrosion and leading to possible premature failure and possible structural failure.

SaltSmart™ was developed over a 5 year program with funding from the US Navy to find a better solution than those that existed on the market. The goals were to find a technology where measurement results would be less operator skill dependent, better accuracy, less chance of contamination, something that would work on all surface geometries including small parts such as vents or gratings, and technology that would support a paperless QA environment where all records could be kept electronically in an electronic archive.

SaltSmart™ is a patented breakthrough in the measurement of soluble surface salt contamination.
Disposable Sensor

Everything is premeasured and comes in a sealed contamination free pouch. In the field, just place the sensor on the substrate, wait the time for the sensor to develop and place in the meter for the reading. Readings are available in any one of three user selectable units.

Faster Test Times

Since no manual manipulation of the sensor is required during test, multiple tests can be run in parallel saving time and labor.

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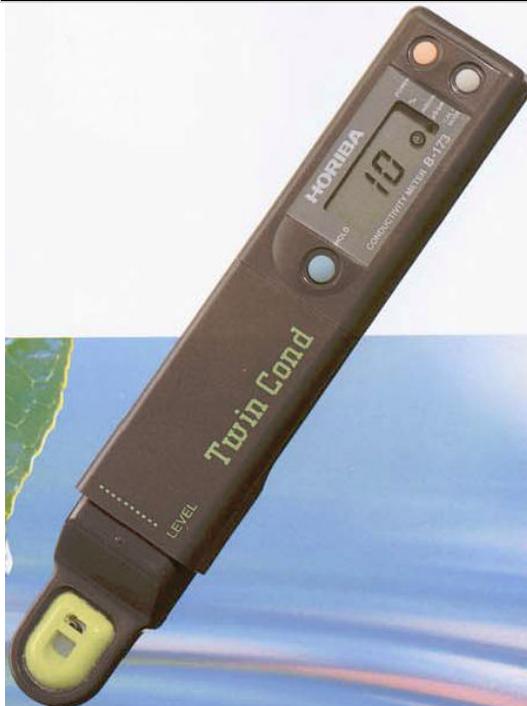
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User Calibration Validation

Meter kits include a validation strip that can be used to validate proper meter calibration.

- The contact area of the sensor is approximately 1.5 cm by 2.0 cm and does not require sealing to the substrate. This allows for testing of curved or irregular surfaces, including very localized testing of objects such as gratings
- The solvent (de-ionized water) is in pre-measured ampoules and requires no measuring or handling and since a fresh one is used per test, virtually eliminates any chance of cross contamination
- No residue is left on the surface after testing - no cleanup required
- Sensor requires no manual manipulation while developing, allowing multiple sensors to be affixed for testing enabling faster testing of large areas saving time and labor
- Measurements may be stored in the meter for later USB download. Allows archiving of accurate measurement data for maintenance or build history and supports paperless QA systems
- Patented Continuous Flow Extraction Method supports high extraction efficiencies to remove salt samples from the test substrate

Horiba B-173 Twin Conductivity Meter



Manufacturer: Horiba
SKU: B-173

Small pocket sized meter that measures conductivity as well as salinity of water samples. A couple of drops of sample can be measured or the sensor may be immersed in larger samples.

Measure the conductivity (0-19.9 mS/cm) of surface sample extractions or extractions from abrasive cleanliness tests using the Horiba digital conductivity meter. A specially designed sample surface only requires 2 mL of test solution to activate the meter, but the meter can also accommodate larger samples. Meter displays results in %, Ms and μ S. Complete with small bottle of pure rinsing water, buffer solution for accuracy verification and operating instructions. A soft pouch for storage is also provided.

Features

- Conductivity Measurement Range: 0 - 19.9 mS/cm
- Measurement Ranges:
 - 0 - 199 μ S/cm (1 μ S/cm step)
 - 0.20 - 1.99 mS/cm (0.01 mS/cm step)
 - 2.0 - 19.9 mS/cm (0.1 mS/cm step)
- Accuracy:
 - $\pm 2\%$ full scale ± 1 digit
 - $\pm 3\%$ full scale ± 1 digit (over 10 mS/cm)
- Salinity Conversion Display Range: 0 - 1.1%
- Display Range:
 - 0.00 - 99% (0.01% step)
 - 1.0 - 9.9% (0.1% step)
 - 10% - 15% (1% step)
- Repeatability: $\pm 1\%$ full scale
- Temperature Measurement Range: 5°C - 35°C
- Temperature Compensation:
 - Automatic, 2%/°C (fixed)
 - Compensation temperature 25°C
 - Single Point Calibration: 1.41 mS/cm

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