

# ARP

INSTRUMENTS, INC.

## SOLUBLE SALT METER (SSM)

MODEL NUMBER RPCT-07-001



[www.arpinstruments.biz](http://www.arpinstruments.biz)

*Technical Bulletin*

The SSM is a patented design that provides a hand held, automated method for detection of soluble salts on flat and curved surfaces. The model RPCT-07-001 meter has been performance tested by independent laboratories and approved by the United States Navy's Naval Sea Systems Command (NAVSEA) as an alternative method for conductivity measurements. Surface salt extraction combined with conductivity and chloride concentration measurement in one convenient and ergonomic tool.

### PRODUCT SUMMARY

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The SSM was developed as a replacement for the Bresle patch inspection method (ISO 8502-6). 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 and can be downloaded to any PC spreadsheet program (such as Microsoft<sup>®</sup> Excel), using the supplied SSMLink software. Electronic data can be exchanged into any Coating Technical File (CTF).

### PROCESS STEPS

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1. Attach meter to surface
2. Inject deionized water into SSM with one press of the dose bottle
3. Press "Start": SSM automatically agitates solution, takes measurement, displays the result on LCD screen and stores data in memory.
4. Remove SSM and wipe remaining water from surface.
5. Clean meter by flushing SSM with deionized water.

**5 Total Process Steps ≈1 minute**

### APPROVALS

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- ✓ United States Patent No. 6,946,844 was issued on 20 September 2005 covering this equipment. International patent pending.
- ✓ Approved by US Navy for soluble salt determination in accordance with the Preservation Process Instruction (Core PPI)
- ✓ Approved by the US Navy for Bresle patch alternative method in NAVSEA Standard Item 009-32
- ✓ Equivalent to ISO Standard 8502-6 *Extraction of soluble contaminants for analysis – The Bresle method*
- ✓ Can be used in lieu of the Bresle method with ISO Standard 8502-9 *Field method for the conductometric determination of water-soluble salts*

## METER DESCRIPTION

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1. *MENU* button
2. *ENTER* button
3. LCD screen
4. Green/Red LED status indicator
5. Piston
6. Magnets
7. Silicone seal

8. Plunger
9. Power/USB port with protective plug
10. Tube connector
11. Shock absorber
12. Protective cap

## THE SSM KIT

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Your basic SSM kit consists of:

1. Soluble Salt Meter with protective cap and rechargeable Li-ion battery with (Optional) additional measuring heads
2. 500 mL of deionized water
3. 250 mL of 84  $\mu\text{S}/\text{cm}$  standard solution
4. 3 mL fixed volume fluid dispenser
5. Stiff plastic feeder tube for dispenser
6. Flexible plastic tubing to connect the SSM and dispenser
7. Syringe for injection of calibration solution
8. Universal AC adaptor (with instructions)
9. Plugs for universal AC adaptor
10. USB connection cable
11. CD with SSMLink software (not pictured)
12. User's manual (not pictured)
13. Lanyard for hanging meter from neck to prevent damage if dropped (not pictured)

## SSM FEATURES

<b>Standards</b>	Equivalent to ISO Standard 8502-9 (Field method for the conductometric determination of water-soluble salts; The Bresle method) in accordance with NACE SP0508-2008
<b>Measurement Area</b>	1250 mm <sup>2</sup> (circular) fixed footprint
<b>Attachment Method</b>	Protective with silicone seal (no effect on surface quality; proven to seal over deep pits)
<b>Water Injection Method</b>	Automated, with simple press of 3 mL fixed volume dispenser
<b>Dose</b>	3 ± 0.05 mL
<b>Air Evacuation</b>	Automated (measurement chamber relaxes automatically; no time delays)
<b>Measurement Process Steps</b>	6
<b>Total Process Time (Reading to Reading)</b>	1 minute
<b>Working Temperature Range</b>	0 – 50 °C (32 – 122 °F)
<b>Temperature Accuracy</b>	± 0.3 °C (0.54°F)
<b>Conductivity Sensors</b>	4 probes (stainless steel)
<b>Measurement Range</b>	0-100 µS/cm
<b>Measurement Accuracy</b>	± 1% full scale
<b>Diameter of Curvature</b>	Standard measuring head >= 44 inch / 1100mm Head 1- 24 <=> 42 inch / 650 <=> 1050mm Head 2- 14 <=> 24 inch / 350 <=> 600 mm Head 3- 8 <=> 12 inch / 200 <=> 300 mm
<b>Readout/Indicators</b>	µS/cm or mg/m <sup>2</sup> (Red/Green LED)
<b>Memory</b>	Holds up to 1000 measurements (10 batches of up to 100 measurements each)
<b>Power Supply</b>	Lithium-ion rechargeable battery 3.7 V @ 1880mAh
<b>Calibration</b>	Not required; meter is calibrated by manufacturer. Daily validation method provided. Contact manufacturer for calibration services.
<b>SSMLink Software &amp; SSMFirmware Updates</b>	Visit <a href="http://www.arpinstruments.biz">www.arpinstruments.biz</a> for periodic updates or to receive email updates or contact arp.instruments@gmail.com

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