Microsalinometer — Model MS-310

MS-310
Microsalinometer

The MS-310 provides oceanographers with a reliable shipboard and laboratory method to verify the performance of sophisticated modern CTD instruments. IAPSO standard seawater is stored in one of the dual cells to permit direct measurement of R_T at all times.

Using the mini-laptop PC and software supplied, the conductance of the sample is simultaneously compared with that of a reference. This dual cell innovation removes the need for a highly stable bath temperature. The cells are surrounded by a well-stirred oil bath to ensure thermal uniformity.

Low-power operation and an inductive measuring technique greatly increase the versatility of the MS-310. There are no measuring electrodes so a wide range of fluids can be measured.

Mechanical and electronic enhancements include: four layers of coil insulation for additional ruggedness; robust coil mounts; "floating" mounts for the glassware to avoid transit damage; a second enclosure for the circuit cards; external control of the unit via a USB relay interface as needed; a 600mm heat exchanger coil on the inflow of the sample to reduce the settling time; low-noise circuitry; and a medical grade peristaltic pump with simple service access.

Field service in remote stations is simple. The software permits an automated three-step standardisation process, which can be performed at any time.

- Small size & light weight - truly portable
- Rugged mechanical construction
- No thermal equalisation required
- Able to measure directly from sample bottle
- RS-232 or USB interface to laptop & GPS
- Standardisation interval - 24 hours recommended
- Simultaneous comparison between sample & standard

Technical

General

Power:	115/230 VAC; 12VDC, 10VA
Communications:	RS-232 or USB via adapter
Size:	305mm x 280mm x 200mm
Weight:	4.6kg (bath empty), 6.6kg (bath filled)
Cell Volume:	15ml; typical sample < 100ml
Bath Volume:	2.0 litres
Operating Temp.:	0˚C to +35˚C
Standardisation:	IAPSO Standard Seawater
Calibration:	NIST Traceable Standards (ISSW from OSIL)
Settling Time:	~ 2 minutes typical
Set Up Time:	~ 30 minutes typical

Temperature

Sensor:	Thermistor
Accuracy:	±0.002 ˚C
Resolution:	<0.00005 ˚C
Drift:	~0.002 ˚C/year - typical

Conductivity Ratio R_T

Sensor:	Inductive Conductivity
Range:	0.05 to 1.2
Linearity:	±0.00005
Repeatability:	±0.00005
Stability:	±0.00005 / 24hrs

Practical Salinity (defined by PSS-78)

Range:	2 to 42 PSU
Accuracy:	±0.002 PSU within ±4˚C of temp. at standardisation
Resolution:	<0.0002 PSU

Software

Integrated RBR software is available at no additional charge.