Teledyne RD Instruments

citadel® TS-NH

Robust and Rugged Thermosalinograph

Surface Salinity with In-Line SensorsH

The Teledyne RD Instruments CITADEL TS-NH THERMOSALINOGRAPH is a compact, low-maintenance system with exceptional stability for monitoring sea surface salinity, as well as sound velocity and water density.

The Citadel TS-NH Thermosalinograph uses Teledyne RDI's patented NXIC (Non-eXternal Inductive Conductivity) sensor and an aged thermistor to provide precise conductivity and temperature measurement, resulting in high-accuracy calculated salinity, sound velocity, and density.

The system is cast in a urethane mold, and the electronics are housed in an integral sealed (moistureproof) housing. The unit is easy to install and remove on in-line piping using either 3/4" hose pipe barbs or optional threaded fittings, and is easily integrated into larger ferry box systems providing additional biological and chemical measurements.

PRODUCT FEATURES

- Salinity accuracy to ±0.015 PSU
- Easy in-line, flow-through installation
- Sensors can be cleaned without affecting calibration
- Compact design is easily incorporated into larger ferry box systems
- Standard RS-232 interface for direct computer connection, with RS-485 interface optional
- Optional battery operation and additional sensor inputs, including water inlet temperature
- Ideal for any size vessel: small boats and large commercial vessels

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TECHNICAL SPECIFICATIONS

Sensors	**Parameter**	**Conductivity**	**Temperature**
	Operational Range	0-70mS/cm[1]	-5 to 35°C
	Accuracy	±0.003mS/cm[2,3]	±0.005°C
	Stability	±0.001mS/cm/month[2,4]	0.0005°C/month
	Thermal Sensitivity	±0.003mS/cm/°C[5]	n/a
	Resolution	0.0001mS/cm	0.0001°C
Power	8 to 35VDC @ 50mA		
Depth Rating	Intended for on-board vessel; Delrin® housing		
Warm-Up	3.0 seconds from power-up		
Sample Rate	User-programmable from 1-15Hz		
Data Output Rate	Up to 8Hz over serial		
Real-Time Clock	Programmable Alarm/Sleep Functions ±8ppm/MAX, (±21sec/month MAX)		
Internal Memory	256MB standard		
Serial Communications	RS-232 or RS-485		
Format	ASCII Protocol		
Data	Conductivity in mS/cm Temperature in Celsius, per ITS-90 Salinity in PSU, per PSS-78 Sound Velocity in m/sec Baud Rates: 1200/9600/19200/38400/57600/11520 Format: 8 data bits, 1 stop bit, no parity		
Dimensions	Line drawings available upon request		

1 Full operational range is 0 to 90mS/cm
2 Specified at 22°C and 35PSU
3 Defines as root sum of the squares (RSS) of endpoint non-linearity, repeatability error, and calibration uncertainty.
4 Measured over a typical one-year period.
5 Relative to 22°C.

TELEDYNE
RD INSTRUMENTS
Everywhereyoulook™
www.rdinstruments.com

Teledyne RD Instruments
14020 Stowe Drive, Poway, CA 92064 USA
Tel. +1-858-842-2600 • Fax +1-858-842-2822 • Email: rdisales@teledyne.com
Les Nertieres 5 Avenue Hector Pintus 06610 La Gaude France
Tel. +33-49-211-0930 • Fax +33-49-211-0931 • Email: rdie@teledyne.com