



# citadel™

## CITADEL TS-N THERMOSALINOGRAPH

# Robust, Reliable, and Rugged Thermosalinograph

### Surface Salinity with In-Line Sensors

The Teledyne RD Instruments Citadel TS-N 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-N Thermosalinograph uses Teledyne RDI's patented NXIC (Nonexternal-Field 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.



#### The Citadel TS-N offers:

- Salinity accuracy to  $\pm 0.015$  PSU
- Easy in-line, flow-through installation
- Sensors can be cleaned without affecting calibration
- Internal reference and self-calibrating electronics provide long-term measurement stability
- Compact design is easily incorporated into larger ferry box systems
- Standard RS-232 interface for direct computer connection, with RS-485 or CMOS interface optional
- Optional battery operation and additional sensor inputs, including water inlet temperature
- Ideal for any size vessel: small boats and large commercial vessels

**TELEDYNE  
RD INSTRUMENTS**

A Teledyne Technologies Company



ROBUST, RELIABLE, AND RUGGED CITADEL CTDS



## CITADEL TS-N THERMOSALINOGRAPH



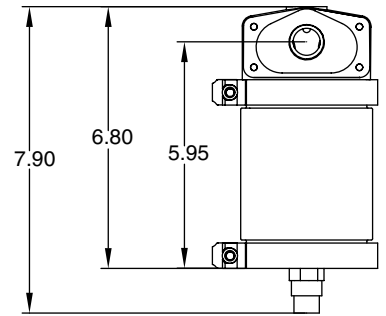
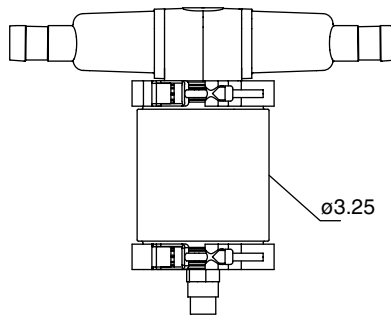
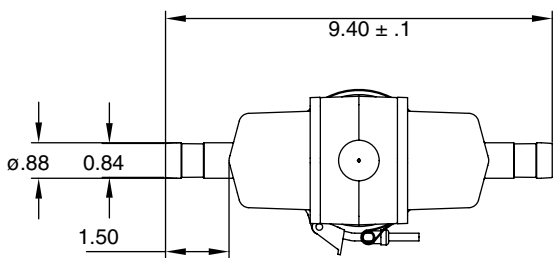
### Technical Specifications

Sensors			
Parameter	Conductivity	Temperature	Salinity (PSU)
Sensor	Internal Field Inductive Cell (NXIC)	Aged Thermistor	Calculated
Range	0 - 9.0 S/m (0 - 90 mS/cm)	-5° to 45°C	2 to 42 PSU
Accuracy	±0.001 S/m (±0.01 mS/cm)	±0.005°C	±0.015 PSU
Stability	±0.0005 mS/cm/month	±0.0005°C/month	±0.001 PSU/month
Resolution	0.00001 S/m (0.0001 mS/cm)	0.0001°C	0.0002 PSU

### Instrument

- Power:** 8 to 35 VDC @ 50 mA
- Warmup:** 3.0 seconds from power-up
- Depth Rating:** 500-meter operating pressure
- Material:** Delrin®
- Real-Time Clock:** Programmable Alarm/Sleep Functions, ±8 ppm/MAX, (±21 sec/month MAX)
- 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 / 115200
  - Format: 8 data bits, 1 stop bit, no parity
- Internal Memory:** 256 MB Standard
- Serial Comms:** RS-232, RS-485, CMOS
- Weight: Air:** 2.2 kg (4.8 lbs)

### Dimensions



All dimensions are in inches. All dimensions are subject to change.

**TELEDYNE RD INSTRUMENTS**  
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