



citadel

CITADEL CTD-ES

Robust, Reliable, and Rugged CTD

Compact Conductivity, Temperature, and Depth Meter with Direct Digital Output

The Citadel CTD-ES incorporates proven inductively coupled conductivity sensor technology with a platinum resistance thermometer and micromachined silicon pressure sensor to provide highly accurate and stable readings.

Data is output continuously via RS-232 or RS-485. All Citadel CTD-ES sensors are mounted in the flow, with no pumps or other artificial flushing devices required. Precise internal fixed references provide continuous calibration for increased long-term reliability. The Citadel CTD-ES's 12-bit digitizer also supports up to six optional external sensors (e.g., pH, DO, turbidity).



The Citadel CTD-ES offers:

- *Non-electrode ceramic inductive conductivity sensor immune to calibration drift caused by electric field changes*
- *Cost-savings with longer calibration schedule*
- *High measurement accuracy without the need for pumps*
- *Lightweight yet durable construction*

**TELEDYNE
RD INSTRUMENTS**

A Teledyne Technologies Company



ROBUST, RELIABLE, AND RUGGED CITADEL CTD'S



Technical Specifications

Sensors

Parameter	Conductivity	Temperature	Pressure
Sensor type	Inductive Cell	Platinum Thermometer	Micro-Machined Silicon
Range	0 - 7.0 S/m (0 - 70 mS/cm)	-2° to 32°C	Customer specified
Accuracy	± 0.0002 S/m (±0.002 m S/cm)*	± 0.002°C*	+/- 0.02% full scale*
Stability	±0.005 mS/cm/month	± 0.0005°C/month	+/- 0.01% full scale/month
Resolution	0.00001 S/m (0.0001 m S/cm)	0.0001°C	0.001% full scale
Response	5.0 cm at 1 m/sec flow	150 msec	25 msec

*Calibrated accuracy

System

Power	6 to 14 VDC at 120 mA, 770 mW maximum (input connector jumper wake-up capability)
Depth Rating	500 meter Delrin housing or 7000 meter titanium housing
Weight	Air: 1.8kg (4lb) Water: 1.2kg (2.7lb)
Sample Rate	User selectable, 1.83 to 4.5 frames per second
Resolution	18 bits at 2 frames per second; 16 bits at 5 frames per second

Spare Channels

6 unipolar channels,
0 to 5 VDC 1.22 mV resolution

Data Format

Conductivity: mS/cm
Temperature: °C (ITS-90)
Pressure: decibars, (SNNNNN.NN)
Sound Velocity: meter/sec (UNESCO 44)
Salinity: PSU (PSS-78)
Time: Date
Spare Channels: count (0 to 4096)

All data in ASCII, 8 data bits, one stop bit,
no parity RS-232 or RS-485

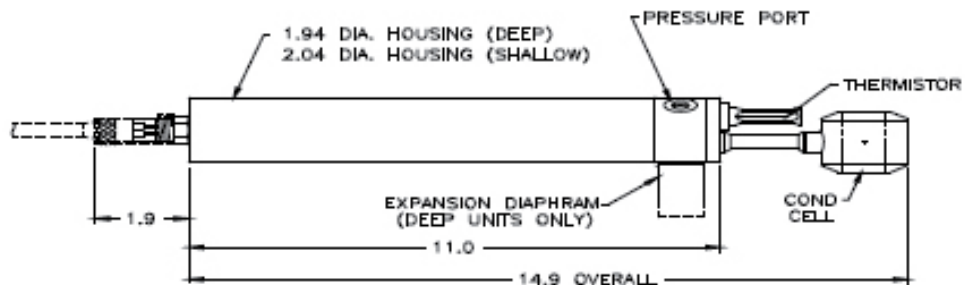
Baud Rate

User selectable: 9600, 19200, 38400

Internal Clock

± 5 ppm initial accuracy
 ± 12 ppm per year
 Programmable alarm and sleep functions

Dimensions



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