



# citadel<sup>®</sup>

## CITADEL CTD-ES/ER

# 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/ER 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*



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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	± 0.0009 S/m (±0.009 mS/cm)*	± 0.002°C*	+/- 0.02% full scale*
Stability	±0.01 mS/cm/month	± 0.0005°C/month	+/- 0.01% full scale/month
Resolution	0.00001 S/m (0.0001 mS/cm)	0.0001°C	0.001% full scale

\*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

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

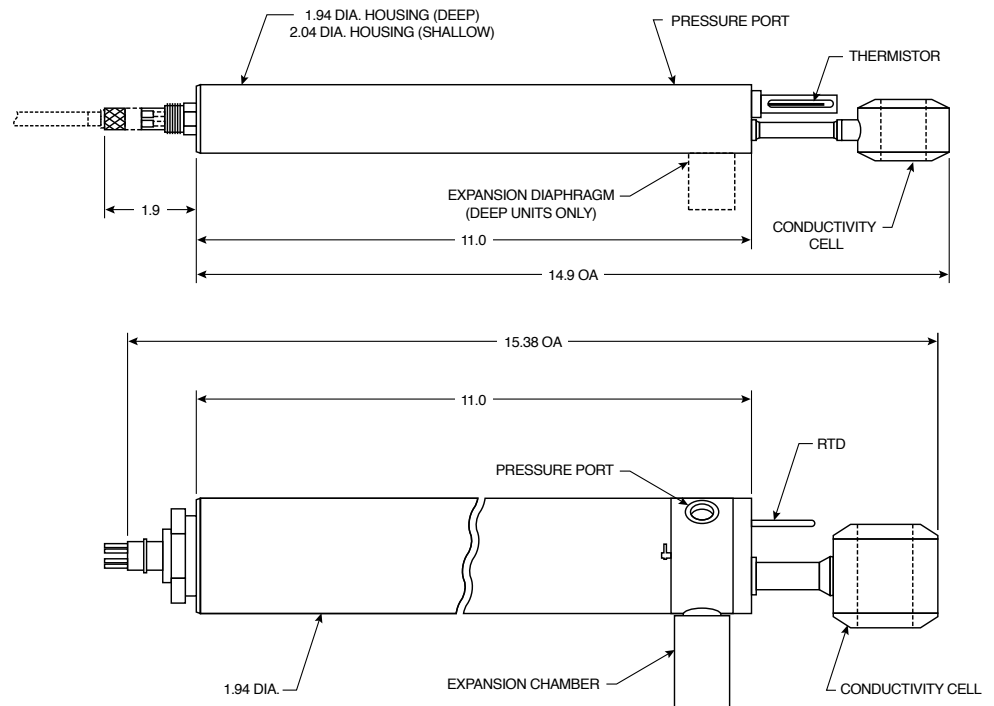
## Baud Rate

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.