



CITADEL CT-EK

# Robust, Reliable, and Rugged CT

## Conductivity and Temperature Sensors with Digital Output for Integration into User Systems

Teledyne RD Instruments Citadel CT-EK Sensor provides high-accuracy conductivity and temperature measurements in a package that can be readily adapted to various user platforms. The instrument relies on an innovative, inductively coupled conductivity sensor, which provides high-accuracy, stable readings. The sensor is self-flushing, so no pumps are required. A high-grade Platinum Resistance Thermometer (PRT) provides stable temperature readings for calculation of high-accuracy salinity and sound velocity.

Separate models are available with the following options:

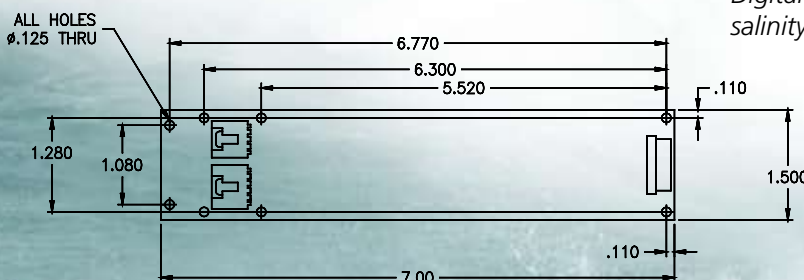
- Shallow- (500-meter) or deep-water (7000-meter) construction
- Internal or external temperature sensor (faster response)
- Regular or short stem (shallow versions only)

A large ceramic conductivity cell is also available for improved accuracy and faster response.



### The Citadel CT-EK offers:

- Self-flushing sensor, with no pump or other moving mechanical parts to fail
- High-stability inductive conductivity sensor can be cleaned without affecting calibration
- High-grade Platinum Resistance Thermometer (PRT) provides high-accuracy temperature
- Low-power operation (<65 mW)
- Fast Power-on to Sample-time provides useful data fast
- Internal references enable continuous self-calibration of electronics
- Digital output includes calculated salinity and sound velocity



Citadel CT-EK sensor board  
mechanical outline



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ROBUST, RELIABLE, AND RUGGED CITADEL CTDS



## Technical Specifications

### Sensors

Parameter	Small CT CellConductivity	Large CT CellConductivity	Temperature
Range	0 to 70 mS/cm	0 to 70 mS/cm	-2 to 35°C
Accuracy	±0.020 mS/cm	±0.010 mS/cm	±0.050°C
Stability	±0.005 mS/cm/mo	±0.003 mS/cm	±0.005°C/mo
Response	20 cm @ 1 m/sec	15 cm @ 1 m/sec	20 seconds Internal 1 second External

## Instrument

**Power:** 50 mW @ 6 VDC, voltage range 6-14 VDC;  
(2) 0-5 VDC control lines;  
RS-232, RS-485 or CMOS  
customer-specified

**Output Format:** Scaled or floating point

**Baud Rate:** 300, 1200, 9600, 19200

**Channels:** 4, plus user-programmable pressure

**Dimensions:** Sensors—contact factory, PC Card—  
1.5" x 7" (3.8 x 17.8 cm)

**Connector:** Molex 8 pin housing with lock, #7478

## Ordering (specify RS-232 or RS-485)

**Shallow Long Stem (500dBar)**  
Internal Temperature CT-EK-0-010003-500-0-I  
External Temperature CT-EK-0-010003-500-0-E

**Shallow Short Stem (500dBar)**  
Internal Temperature CT-EK-0-010103-500-0-I  
External Temperature CT-EK-0-010103-500-0-E

**Shallow Sensor w/Housing (500dBar)** CT-EK-0-020102-500-0-I

**Deep Sensor (7000dBar)**  
External Temperature CT-EK-0-010104-7000-0-E

## Dimensions

