

# Temperature, Humidity, and CO<sub>2</sub> Smart-Sensor™

## For Cobalt X™

### Integrated triple T°, RH%, and CO<sub>2</sub>% sensor

#### *The smallest triple sensor designed for incubators*

Dickson's triple Smart-Sensor is an innovative and convenient solution for monitoring CO<sub>2</sub> incubators with Cobalt X1/X2 data loggers. This compact device continually measures carbon dioxide concentration, temperature, and relative humidity inside incubators to help provide optimal control of the culture environment and notify you in case a problem arises.

#### Measurement ranges

- Temperature: 0°C to +50°C (+32°F to +122°F)
- Relative humidity: 0% to 99.9% RH
- CO<sub>2</sub>: 0 to 20%

#### Applications

- In vitro fertilization (IVF) and sensitive cell cultures
- Biomedical and pharmaceutical research
- Biotechnology and life science laboratories
- Monitoring critical environmental conditions

Smart-Sensor electronics



l: 83 mm • Ø 12 mm  
(l: 3.26 in. • Ø 0.46 in.)

Flat cable:  
1 meter (39 in.)

### Key features

- For use with OCEAView monitoring solution
- Single device measures temperature, relative humidity, and CO<sub>2</sub>
- Small footprint fits into small incubators
- Adjustable reading frequency
- Plugs into Cobalt X1/X2 data loggers, no external power required
- Flat cable passes via incubator access port or behind door joint

### Smart-Sensor benefits

- Calibration parameters stored directly in sensor memory
- Enables plug-and-play operation without requiring configuration
- At recalibration time, hot-swap with a freshly calibrated, ready-to-use sensor without any data gaps or down-time
- All-digital technology for maximum consistency and reliability


#### On-board intelligence

- Dickson's Smart-Sensor technology stores all calibration information directly in on-board memory, including calibration correction coefficients (a, a/b, or a/b/c), expanded uncertainty after calibration, drift after 1 year, sensor serial number, and calibration certificate number

# Specifications

## Temperature, relative humidity, and CO<sub>2</sub> Smart-Sensor



General	Measurement range	Expanded uncertainty	Resolution
Temperature	0°C to +50°C (+32°F to +122°F)	±0.3°C at 37°C	0.01°C
Relative humidity	0% to 99.9% RH (non-cond.)	±4%RH at 90% RH	0.05% RH
CO <sub>2</sub>	0 to 20% CO <sub>2</sub>	±0.4% at 5% CO <sub>2</sub> , 37°C (+98.6°F), and 90% RH	0.1% CO <sub>2</sub>
Compatibility	 Cobalt X2, Cobalt X1 (when used with Cobalt X1, only 2 sensors can be active simultaneously)		
Measurement environment	This sensor is only designed for incubators operating with CO <sub>2</sub> injection. Multi-gas incubators (such as those with O <sub>2</sub> or N <sub>2</sub> injection) cannot be monitored with this sensor due to the sensor type and the presence of gases other than CO <sub>2</sub> .		
Product reference	SON.CO2.0012		
Metrology			
Calibration	Calibration from 3% to 7% CO <sub>2</sub> , 35°C to 39°C (98.6°F to 102.2°F), and at 90% RH For other options, please contact us • Europe and Asia: in-house laboratory certified • North America: NIST, ISO 17025 certified • <i>Recalibration by sensor exchange</i>		
Details			
Sensor type	Smart-Sensor		
Material	PVC overmold and PTFE filter		
Dimensions	Sensor: length 83 mm x Ø 12 mm ( <i>length 3.26 in. x Ø 0.46 in.</i> ) Cable with Binder connector: 1 meter ( <i>39 in.</i> )		
Electrical	Power supplied directly by Cobalt X data logger		
Protection class	IP65 ( <i>sensor unit</i> )		

# DICKSON

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