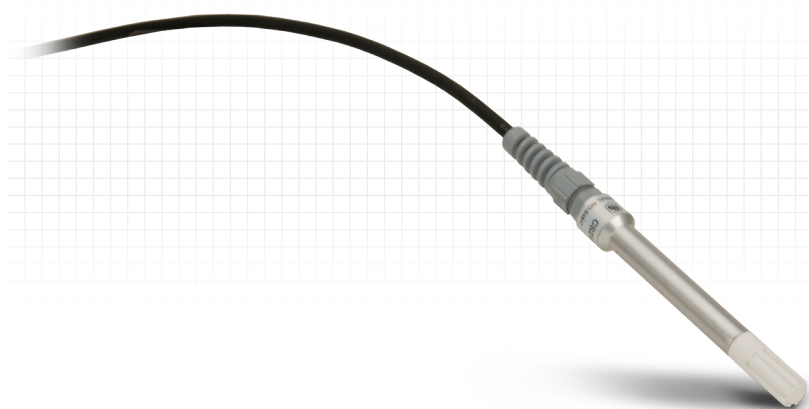


**CS215***Temperature and Relative Humidity Probe*

Competitively Priced; SDI-12 Output

General purpose
temperature and RH sensor



Overview

The CS215 uses the Sensirion SHT75, a combined relative humidity and temperature element, to provide accurate, stable measurements. The element is based on Sensirion's CMOSens technology, which has been tested for more than two years in

alpine conditions. The CS215 outputs an SDI-12 signal that is measurable by most Campbell Scientific dataloggers.

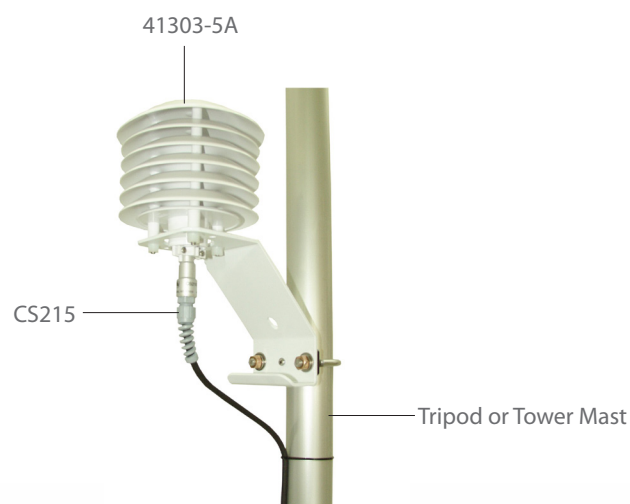
The Sensirion SHT75 element is field-replaceable, eliminating the downtime typically required for the recalibration process.

Benefits and Features

- Accurate and stable measurements
- Field changeable element allows on-site recalibration
- Each sensor element is individually calibrated so no further adjustment of the probe is required
- Low power consumption
- Digital SDI-12 output

Sensor Mounts

When exposed to sunlight, the CS215 must be housed in a 6-plate radiation shield. The 41303-5A attaches to a crossarm, mast, or user-supplied pipe with a 2.5 to 5.3 cm (1.0 to 2.1 in) outer diameter. The 41303-5B attaches to a CM500-series pole or a user-supplied pole with a 5.1 cm (2.4 in) outer diameter.



Above is a sensor housed in the 41303-5A radiation shield. The U-bolt is placed in the holes on the side of the bracket to allow the 41303-5A to be attached to a mast or vertical pole.



Recommended Cable Lengths

2-m Height		Atop a tripod or tower via a 2-ft crossarm such as the CM202								
Mast/Leg	CM202	CM6	CM106	CM10	CM110	CM115	CM120	UT10	UT20	UT30
2.7 m (9 ft)	3.3 m (11 ft)	3.3 m (11 ft)	4.3 m (14 ft)	4.3 m (14 ft)	4.3 m (14 ft)	5.8 m (19 ft)	7.3 m (24 ft)	4.3 m (14 ft)	7.3 m (24 ft)	11.3 m (37 ft)

Note: Add 1 m (2 ft) to the cable length if mounting the enclosure to the leg base of a CM106, CM110, CM115, or CM120 tripod.

Ordering Information

Air Temperature and Relative Humidity Probe

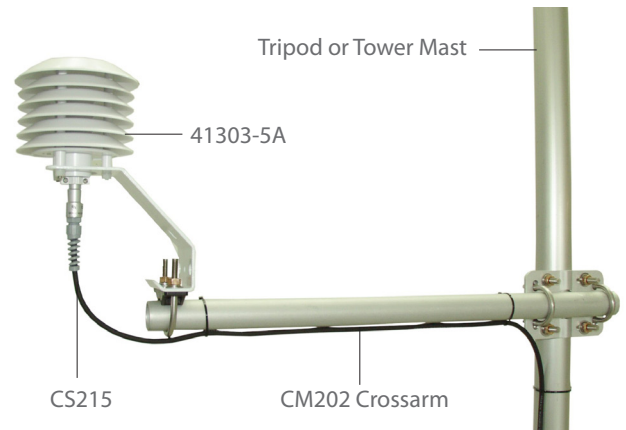
CS215-L CSL Temperature/RH Probe with user-specified cable length. Enter cable length, in feet, after the -L. Must choose a cable termination option (see below).

Cable Termination Options (choose one)

- PT** Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.
- PW** Cable terminates in connector for attachment to a prewired enclosure.

Radiation Shields

- 41303-5A** 6-Plate Radiation Shield with U bolts for attachment to a Campbell Scientific crossarm or mast.
- 41303-5B** 6-Plate Radiation Shield with Band Clamp for attachment to a CM500-series or similar pole.



To attach the 41303-5A to a CM202, CM202SS, CM204, CM204SS, or CM206 crossarm, place the 41303-5A's U bolt in the bottom holes.

Specifications

- › Sensing Element: Sensirion SHT75
- › Communication Standard: SDI-12 V1.3 (responds to a subset of commands)
- › Power Supply Voltage Range: 7 to 28 Vdc* (typically powered by the datalogger's 12 Vdc supply)
- › Typical Current Drain
Quiescent: 120 μ A
During Measurement: 1.7 mA (takes 0.7 s)
- › EMC Compliance: Tested and conforms to IEC61326:2002
- › Operating Temperature Range: -40° to +70°C
- › Housing Material: Anodized aluminum
- › Housing Classification: IP65 (NEMA 4)
- › Sensor Protection: Outer glass-filled polypropylene cap. Inner expanded PTFE filter. Filter material has a porosity of 64% and a pore size of <3 μ m.
- › Length Including Strain Relief: 18.0 cm (7.1 in)
- › Diameter at Sensor Tip: 1.2 cm (0.5 in)
- › Diameter at Cable End: 1.8 cm (0.7 in)
- › Weight with 10 ft cable 150 g (5.3 oz)

Air Temperature

- › Measurement Range: -40° to +70°C
- › Output Resolution: 0.01°C
- › Accuracy
25°C: $\pm 0.3^\circ\text{C}$
+5° to +40°C: $\pm 0.4^\circ\text{C}$
-40° to +70°C: $\pm 0.9^\circ\text{C}$
- › Response Time with Filter: < 120 s (63% response time in air moving at 1 m s⁻¹)

Relative Humidity (RH)

- › Measurement Range: 0 to 100% RH (-20° to +60°C)
- › Output Resolution: 0.03% RH
- › Accuracy at 25°C
10% to 90% range: $\pm 2\%$ RH
0% to 100% range: $\pm 4\%$ RH
- › Short Term Hysteresis: < 1% RH
- › Temperature Dependence: better than $\pm 2\%$ (-20° to 60°C)
- › Stability (Typical): $\pm 1.0\%$ per year
- › Response Time with Filter: < 20 s (63% response time in still air)
- › Calibration Traceability: NIST and NPL standards

*Older sensors (serial numbers less than E13405) had a power supply voltage range of 6 to 18 Vdc.



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