

**CS125***Present Weather and Visibility Sensor*

Unrivalled Performance

Ideal For Transport Applications

Overview

The CS125 is an infrared forward scatter visibility and present weather sensor for stand-alone use or with automatic weather stations including those for road, marine and airport applications. It uses the 42° scatter angle which gives accurate estimates of Meteorological Observable Range (M.O.R.) for fog and snow.

The CS125 identifies precipitation particles from their scattering properties and fall speeds, and combines this with a temperature measurement to identify the weather type. It has downward pointing optics that reduce the risk of contamination of the optics and blockage with snow. Interference to the sample volume from the sensor by flow distortion or heat is minimized.

Benefits and Features

- › High-performance sensor at an economical price
- › FAA-recommended 42° scatter angle for good Meteorological Observable Range (MOR) readings in all precipitation types
- › Incorporates automatic dew and hood heaters for all-weather operation
- › Simple field calibration using optional calibration kit
- › Low power—suitable for remote application
- › Automatic fault/contamination detection
- › Sample volume clear of disturbance from mounting and electronics enclosure
- › Two user configurable alarm outputs can drive audio or visual alarms using solid state relays

Technical Description

The CS125 uses continuous high-speed sampling, which improves the accuracy of the measurements taken during mixed weather such as rain and hail, while providing reliable readings during more stable events such as fog and mist. High speed sampling also allows the sensor to better respond to suddenly changing conditions.

The CS125 has several design features that keep its optics clean. Downward facing optics minimizes dirt and snow build up. Low powered heaters prevent the formation of dew, and a higher-powered heater prevents the formation of ice.

questions & quotes: 435.227.9030

www.campbellsci.com/cs125



Specifications

Operational

- Maximum Reported Visibility: 32 km (~20 miles)
- Minimum Reported Visibility: 10 m (~32 ft)
- Output: 32 SYNOP present weather codes and associated METAR present weather codes
- Operating Temperature Range: -25° to +60°C
- Operating Humidity Range: 0 to 100%
- Wind Speed: Up to 60 ms⁻¹
- Sensor Sealing: rated to IP66

Accuracy

- 0 to 10,000 m: ±10%
- 10,000 to 20,000 m: ±20%

Mechanical

- Weight: ~3 kg (~7 lb)
- Height: 44.7 cm (17.6 in)
- Width: 64 cm (25.2 in)
- Depth: 24.6 cm (9.7 in)
- Mounting: Stainless-steel V-bolt bracket that attaches to a pole with a 32 to 52.5 mm (1.25 to 2 in) outer diameter

Electrical

Supply Voltage*

- Electronics: 8 to 30 Vdc
- Hood Heater: 24 Vdc or Vac

Power**

- Hood Heater: 2 x 30 W, total of 60 W
- Dew Heater: 2 x 0.6 W, total of 1.2 W

Interface

- Serial Interface: RS-232 or RS-485
- Serial Data Rates: 1200 to 115,200 bps (38,400 bps default rate)
- Alarm Outputs: two 0 to 5 V outputs, 32 mA (maximum)

Optical

- Emitter Light Frequency: 850 nm
- Lens Contamination Circuitry: Monitors both the source and detector lenses for contamination/blockage at 1 s intervals; sensor adjusts its calibration for low to moderate window contamination
- Light Source Stability Control: Ensures stable operation through variations in temperature and with sensor aging; corrected at 1 s intervals.

* A low-voltage shutdown level can be set to prevent back-up batteries being damaged.

**Lower power states can be achieved by less frequent sampling and remote control of heaters.



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