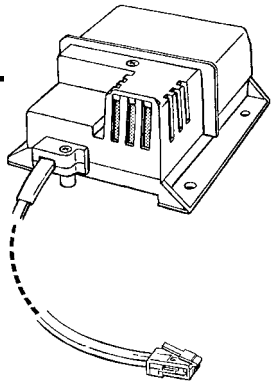
EXTERNAL TEMPERATURE/HUMIDITY SENSOR

7859

SENSORS



Standard

The External Temperature/Humidity Sensor measures relative humidity and air temperature. The sensor enclosure protects the sensor from mechanical damage, and the membrane filter protects the sensor elements from dust, dirt, and water spray.

The housing includes a cable strain relief. The humidity sensor is a thin film capacitor element. A dielectric polymer layer absorbs water molecules from the air through a thin metal electrode, which causes a change in capacitance proportional to relative humidity. The temperature sensor is a precision platinum wire thermistor which produces a resistance change proportional to temperature. The sensors are mounted next to one another within the sensor housing to ensure a close correlation between relative humidity and temperature readings. The relative humidity and temperature readings are used to calculate dew point.

To ensure accurate readings when measuring outdoor air temperature and humidity, one should shield the External Temperature/Humidity Sensor from direct sunlight and other sources of reflected or radiated heat. We recommend the use of a Davis Radiation Shield (#7714) or the equivalent for this purpose.

SPECIFICATIONS

General

Sensor Type

Temperature . . . . . Platinum wire thermistor
Relative Humidity . . . . . Film capacitor element

Attached Cable Length . . . . . 40’ (12 m)

Cable Type . . . . . 6-conductor, 26 AWG

Connector . . . . . Modular connector (RJ-11)

Recommended Maximum Cable Length . . . . . 200’ (60 m) Sensor to SIM, or Sensor to Console w/o SIM

Housing Material . . . . . White ABS with UV Inhibitor added

Dimensions . . . . . 3.5" wide x 3.25" long x 1.5" high (89 mm x 83 mm x 38 mm)

Weight . . . . . 15 oz. (425 g)

Console Data (These specifications apply to sensor output as converted by Davis Instruments weather station consoles.)

Range

Temperature . . . . . -50° to 140° F (-45° to 60° C)
Relative Humidity 0-100%
Dew Point . . . . . -99° to 140° F (-73° to 60° C)

Accuracy

Temperature . . . . . ±1°F (±0.5°C)
Relative Humidity . . . . . ±3%
Dew Point . . . . . ±4°F (±2°C)

Resolution

Temperature . . . . . 1.0° or 0.1°, selectable, F or C
Relative Humidity 1%
Dew Point . . . . . 1°F (1°C)

Sample and Display Update Interval

Temperature . . . . . 16 seconds (max)
Relative Humidity . . . . . 16 seconds (max)

WeatherLink® Data (These specifications apply to sensor output as logged and displayed by the WeatherLink.)

Temperature . . . . . Average during archive interval

High and Low Temperature . . . . . Maximum and minimum values during archive interval

Relative Humidity . . . . . Value at end of archive interval

High and Low Humidity . . . . . Maximum and minimum values during archive interval

Dew Point . . . . . Calculated using temperature and humidity data for each archive interval

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Input/Output Connections

This sensor uses a proprietary signal format and will work only with Davis weather stations. We do not support the use of this sensor in 3rd party installations.

Yellow	Temperature
Green	Relative Humidity Output
Blue	Control
White	+2.5VDC
Black & Red	Ground

INSTALLATION OPTIONS

For greater accuracy when installing the sensor against a wall (as shown on left), use a wall that faces away from the equator.