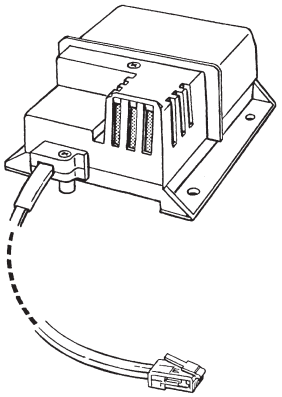
External Temperature/Humidity

7859



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.

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

Note: 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%, from 0 to 90% RH, ±4% from 90% to 100% RH
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)

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DS7859-00 (Rev. D, 1/9/06)

WeatherLink® Data

Note: 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

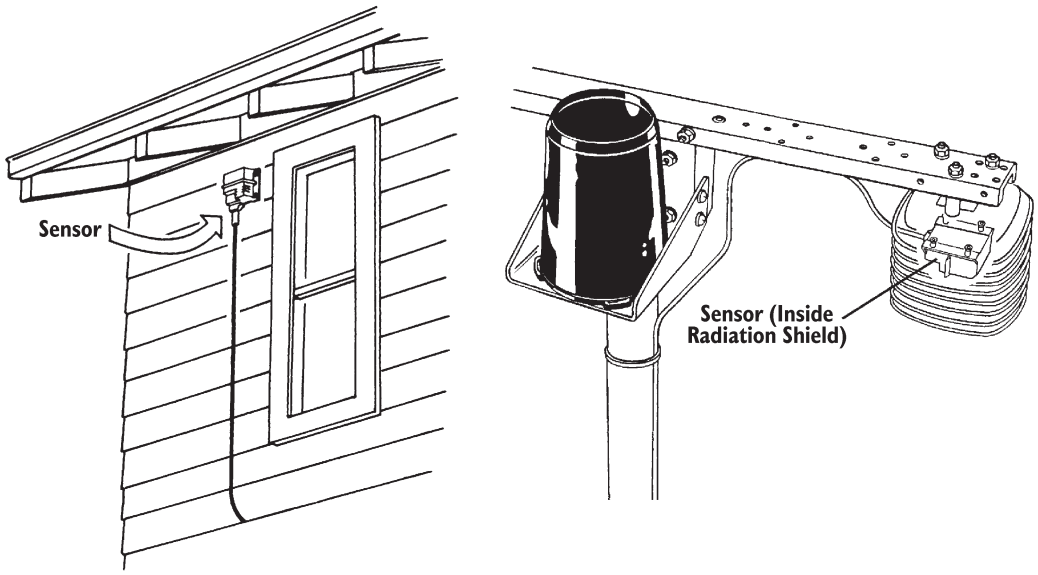
Input/Output Connections

Note: 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.



Package Dimensions

Product #	Package Dimensions (Length x Width x Height)	Package Weight	UPC Codes
7859	9.00" x 4.38" x 2.25" (229 mm x 112 mm x 58 mm)	15.5 oz. (.44 kg)	011698 78563 6