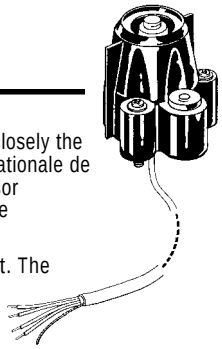
UV SENSOR, **Industrial**



7843

SENSORS

The UV Sensor measures the sunburning portion of the UV spectrum. Its spectral response matches very closely the Erythema Action Spectrum, defined by McKinlay and Diffey (1987) and adopted by the Commission Internationale de l'Eclairage (C.I.E.) as the standard representation of the human skin's sensitivity to UV radiation. The sensor measures global solar UV irradiance, the sum of the components of solar UV transmitted directly and those scattered by gases and particles in the atmosphere. Scattered UV is a major portion of global irradiance.

The transducer is a semiconductor photodiode which responds only to radiation in the region of interest. The diffuser provides an excellent cosine response. With multiple hard-oxide coatings, the interference filter provides the Erythema Action spectral response. It is stable in the presence of heat and humidity. The outer shell shields the sensor from thermal radiation and provides a path for convection cooling of the body, minimizing heating of the sensor interior. It provides a cutoff ring for cosine response, a level indicator, and fins to aid in aligning the sensor with the sun's rays. Spring-loaded mounting screws, in conjunction with the level indicator, enable rapid and accurate levelling of the sensor. Each sensor is calibrated against a secondary standard which is calibrated periodically against a Yankee Environmental Systems' Ultrviolet Pyranometer, model UVB-1, in natural daylight.

For maximum sensor response, you may want to tilt the sensor towards the sun. The Sensor Tilting Bracket provides a simple method for mounting the sensor at an angle.

SPECIFICATIONS

General

- **Operating Temperature** . . . . . -40° to 150° F (-40° to 65° C)
- **Sensor Type** . . . . . Semiconductor photodiode
- **Spectral Response** . . . . . 280 to 360 nm (EAS)
- **Cosine Response** . . . . . ±4% of reading (0° to 65° incident angle); ±9% of reading (65° to 85° incident angle)
- **Time Constant** . . . . . 5 seconds
- **Attached Cable Length** . . . . . 16' (5 m)
- **Cable Type** . . . . . 2-twisted pair, 24 AWG shielded cable with UV-resistant jacket, wires stripped and tinned
- **Recommended Maximum Cable Length** . . . . . 200' (61 m)
- **Housing Material** . . . . . UV-resistant plastic
- **Dimensions** . . . . . 2" x 2.75" x 2.25" (51 mm x 70 mm x 57 mm)
- **Weight** . . . . . 9 oz. (255 g)

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

Range

- UV Exposure Index . . . . . 0 to 16
- UV Dose Rate . . . . . 0 to 7 MEDs/hour
- UV Dose . . . . . 0 to 999.9 MEDs

Accuracy

- UV Exposure Index . . . . . ±8%
- UV Dose Rate . . . . . ±8%
- UV Dose . . . . . ±8%

- **Temperature Coefficient** (see Note 1) . . . . . ±0.02% per degree F (±0.036% per degree C); Reference temperature = 72°F (22°C)

Resolution

- UV Exposure Index 0.1
- UV Dose Rate . . . . . 0.1 MED/hour
- UV Dose . . . . . 0.1 MED

- **Sample and Display Update Interval** . . . . . 16 seconds (max)

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

- **UV Exposure Index** . . . . . Average over archive interval
- **UV Dose Rate** . . . . . Average over archive interval
- **UV Dose** . . . . . Sum over archive interval

Input/Output (These specifications apply to the sensor as a separately-sold item.)

Connections (Diagram on reverse)

- White . . . . . Output (0 to 2.5VDC); 0.364 Volt per MED/hour
- Black (2 wires) . . . . . Ground
- Red . . . . . +5V ±10%, 3.4 mA
- Bare . . . . . Shield Ground

- **Temperature Coefficient** (see Note 1) . . . . . ±0.12% per °F (±0.22% per degree C); Reference temperature = 72°F (22°C)

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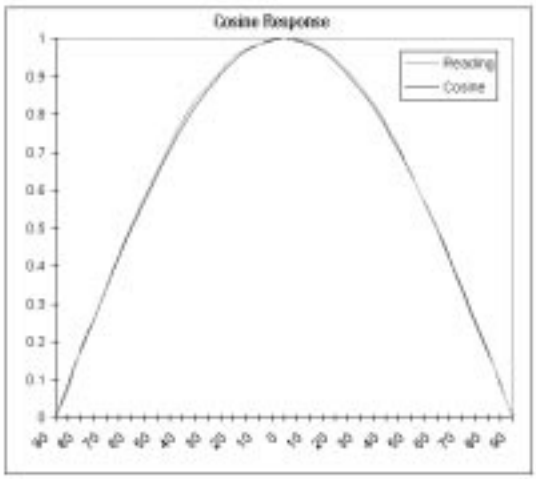
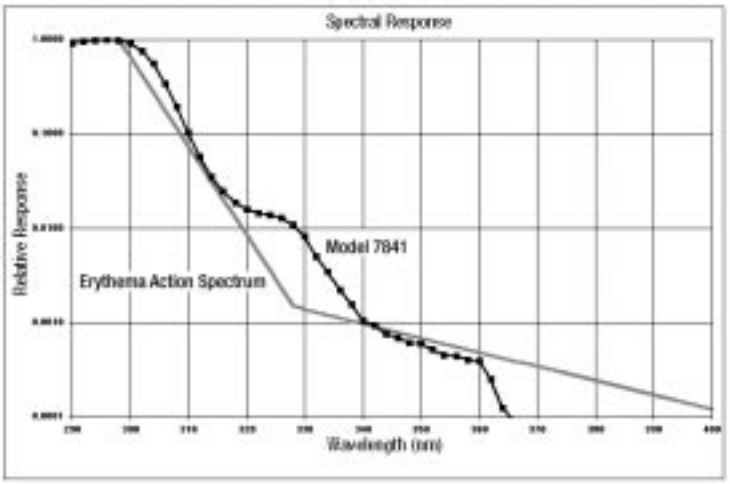
DS7843-00 (Rev. C, 7/14/99)

NOTES

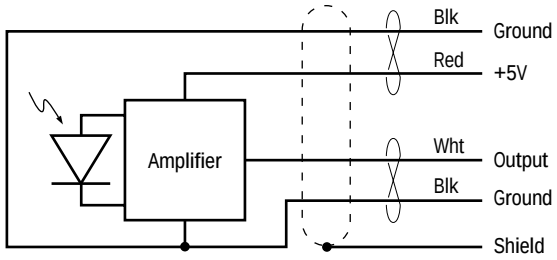
1. Temperature compensation is automatically performed in all Health EnviroMonitor systems which include an external temperature sensor.

COSINE AND SPECTRAL RESPONSES





CONNECTIONS



INSTALLATION OPTIONS