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WHEN MEASUREMENTS MATTER

BlackGlobe

Temperature Sensor for Heat Stress



Manage Heat Stress

Overview

Loss of physical and mental efficiency occurs under definable degrees of heat stress. Severe heat stress can lead to fatigue, exhaustion and possibly even disability or death. The Wet Bulb Globe Temperature Index (WBGT) combines the effects of temperature, humidity, radiant heat, and wind into one single index employed to express environmental heat stress.

The BlackGlobe Temperature Sensor for Heat Stress measures radiant temperature using a thermistor inside a 15.2 cm (6 in) hollow copper sphere that is painted black. This measurement, along with the measurement of ambient air and wet bulb temperatures, is used to calculate the WBGT index.

Heat stress can be reduced by decreasing the lengths of exposure and decreasing the workload of individuals under heat stress. Factors such as the type of clothing worn, the type of work performed, the psychological effects of stress, and availability of fluids can affect the assessment of heat stress, but these factors are not easily quantified. Environmental factors such as temperature, humidity, and wind are more easily measured to assess heat stress.

Ordering Information

Temperature Sensor for Heat Stress

BlackGlobe-L Temperature Sensor (-5° to +95°C) with mounting bracket. Enter the 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.

Common Accessories

TempCal Single Point Calibration

TempCal2 Two Point Calibration

Specifications

- Temperature Measurement Range: -5° to +95°C
- Temperature Survival Range: -50° to +100°C
- Thermistor Interchangeability Error: Typically <±0.2°C over 0° to 70°C, and ±0.3 at 95°C
- Polynomial Linearization Error: < ±0.5°C over -7°C to +90°C
- Near Normal Emittance: 0.957
- Maximum Cable Length: 305 m (1000 ft)

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July 30, 2014