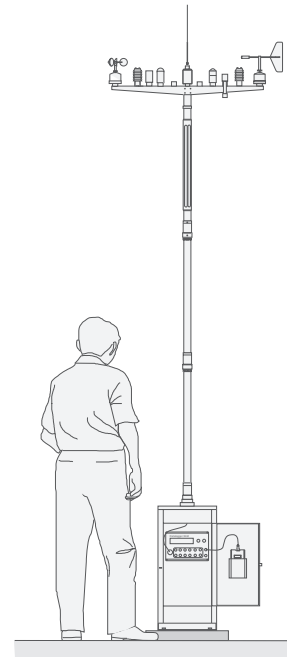




SOLAR RADIATION SENSOR 2770

A sensor for incoming solar and sky radiation, specially designed for use with Aanderaa Automatic Weather Station 2700 and SmartGuard



Incoming solar and sky radiation is one of the basic meteorological parameters. It enables meteorologists to prepare more accurate weather forecasts.

For climatological studies and studies of plant growth, knowledge of radiation is also of great importance.

Solar Radiation Sensor 2770 has been developed to measure solar and sky radiation under all weather conditions.

The sensor employs a high sensitivity thermistor bridge which measures the temperature rise of a black surface under a glass dome.

To obtain full reading, only a temperature rise of about 2.2°C is needed due to the high sensitivity of the thermistor bridge. This eliminates the need for double domes, frequently used for radiation sensors. The reading of the sensor is, because of the symmetrical design, only affected by radiation and not by changes

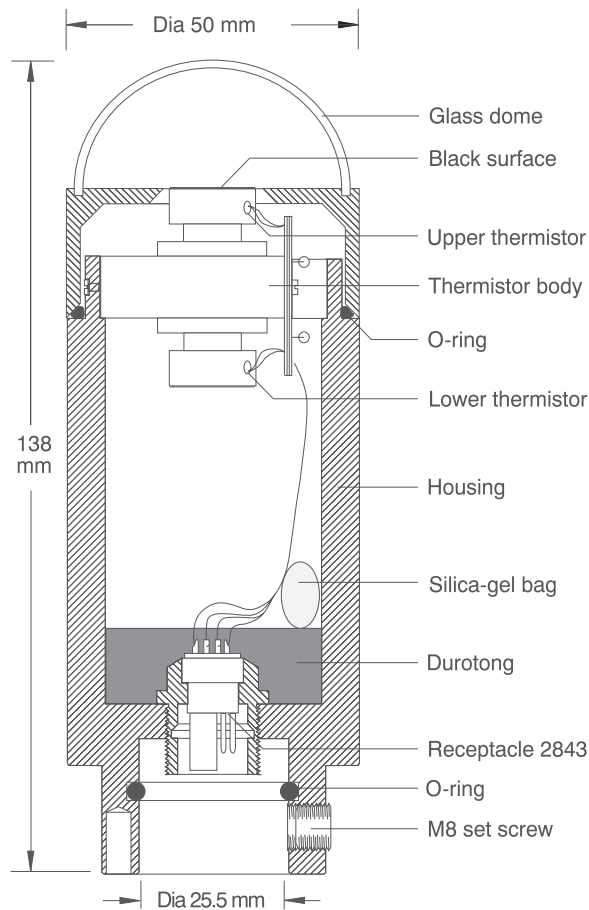
in the ambient temperature. Therefore no radiation screen is needed around the sensor.

The Solar Radiation Sensor 2770 is designed to be placed on the sensor arm of the Aanderaa Automatic Weather Station 2700. Although it gives momentary readings, it will give a sensible average of incoming radiation during each 10 minute period of operation.

Solar Radiation Sensor 2770 can also be used with Datalogger 3660 together with other sensors to build an Environmental Monitoring Station. In that case, a watertight cable is available for connecting the sensor to the Datalogger. All sensors will fit a 25 mm aluminum tube.

A special version of the sensor, Net Radiation Sensor 2811 (Pyrradiometer) is available. This sensor is equipped with a teflon dome and is sensitive in the range 0.3 to 60 microns.

Specifications 2770



- Range: 0 - 2000 W/m²
- Accuracy: Better than ± 20 W/m²
- Wavelength: 0.3 to 2.5 micron
- Resolution: 4 W/m²
- Output: VR-22, halfbridge
- Output Impedance: 2.5 k Ω at 20°C
- Linearity: $> \pm 1\%$
- Response Time: 60 seconds
- Glass Dome: Borosilicate
- Material and Finish: Aluminum 6061T, anodized 15 μ
- Weight: 400 grams
- Electrical Connection: AWS Sensor Arm 3415/3435 or Connecting Cable 2842
- Warranty: Two years against faulty materials and workmanship
- Approvals: CE certified

Specifications subject to change without prior notice.

CALIBRATION

Serial No:

Radiation

W/m ²	Reading N
0	

Radiation (W/m²) = A + BN + CN² + DN³, (N = Raw data) which gives the following coefficients:

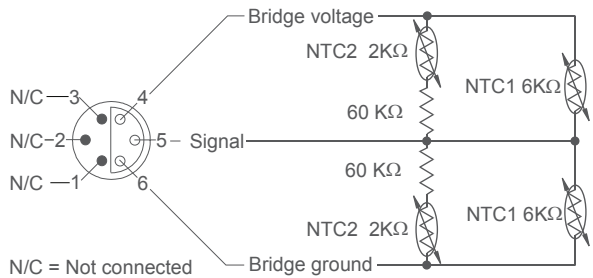
A		C	0
B		D	0

Date:

Sign:

ELECTRONIC CIRCUIT

Receptacle, exterior view; bushing = \circ ; pin = \bullet



NTC1: Thermistor Unicurve 6 k Ω at 20°C
 NTC 2: Thermistor Unicurve 2 k Ω at 20°C



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