Environdata
WEATHER STATION SPECIALISTS

Air Temperature Sensor

(TA40 Series)

Features

- Microprocessor accuracy
- Frequency output
- Robust signal (250m distance with no loss)
- Sensors fully interchangeable with no software adjustment
- Semi-conductor sensing element
- Waterproof, aluminium sheathed tip
- Robust housing
- Fully weatherproof
- Australian Made

Applications

- General meteorology
- Irrigation scheduling
- Scientific research
- Process control & automation
- Pest control

Figure 1: TA40 Air Temperature Sensor

The TA40 Series air temperature sensors are high quality electronic sensors designed to measure ambient air temperature.

Improved design using high stability components provides faster and more accurate temperature sensing. The temperature stability of the new design allows realistic temperature measurement accuracies of better than ±0.2°C over the entire measurement range.

The sensing element consists of a semi-conductor integrated circuit that provides a linear output voltage proportional to the ambient temperature.

The microprocessor reads the voltage and provides a very stable square-wave frequency proportional to the air temperature.

For ambient air temperature readings we recommend that the sensors are located inside a louvred radiation screen, to protect from direct and reflected solar radiation and precipitation.

This sensor screen should preferably be located at a height of 1.2 to 1.5 metres above ground level.

The ideal screen to use is Environdata's SS11 Sensor Shelter. This modern version of the Stephenson Screen is constructed from aluminium and then powdercoated so it is robust enough for any environment.

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AUSTRALIAN MADE

Specifications

Sensing Element:

- Semiconductor Integrated Circuit

Resolution:

- 0.025°C

Accuracy:

- ±0.2°C over operating range

Drift:

- <0.1°C per year

Calibration Accuracy:

- < ±0.2°C at 0°C and 25°C

Response time:

- <5 minutes in air; 30 seconds in liquid

Calibration Method:

- Two point calibration in ice-water and warm water baths, using certified standard.

Reliability:

- Typically five (5) years operation before factory recalibration recommended.

Housing:

- Fully sealed grey ABS with neoprene gasket

Operating Conditions:

- Temperature: -20°C to +60°C
- Humidity: 0% to 100%

Weather Exposure:

- Constant water pressure should be avoided on the housing (do not submerge).
- The sensing tip is fully sealed.

Supply Voltage:

- 5.5 to 15 Volts DC

Current Drain:

- < 2.5mA at 6V DC

Output:

- +5 Volt square wave frequency (pulse) proportional to the temperature.
- -20°C = 0 Hz
- +60°C = 40 Hz
- 100% linear progression
- Frequency = °C/2 + 10

Cable Specification:

- Custom wound 3-core
- Shielded
- UV stabilised
- 2m Length
- Extension cable to 250m with no signal loss

Dimensions (65mm x 64mm x 38mm)

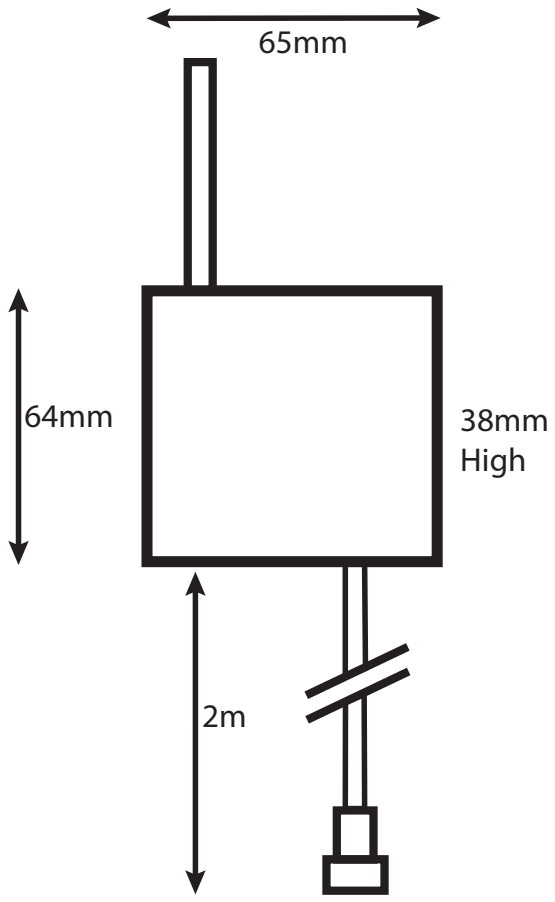

Figure 2: Dimensions of TA40 Air Temperature Sensor

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