

### Technical Specifications

- **Temperature and Relative Humidity Sensor with Radiation Shield**

1. Air Temperature
2. Sensor type : Pt 100 RTD
3. Measurement Range: -40 °C to +60 °C
4. Accuracy (with radiation shield)  $\pm 0.20$  °C  
+10°C to +60 °C  $\pm 0.35$  °C or for -40°C to +10 °C
5. Resolution 0.1 °C
6. Output: Analog

- **Relative Humidity**

1. Measurement Range: 0% to 100%
2. Accuracy (including nonlinearity, hysteresis and repeatability)
3.  $\pm 3\%$  Rh with membrane filter (In the Range 10% to 100%)
4. Output Analog
5. Resolution 1%
6. Sensor type: Capacitive

- **Radiation Shield**

1. Thermoplastic
2. Louvered 9
3. Ventilation Natural
4. Mounting Accessories Aluminum Mounting bracket and Stainless-steel U Bolt clamp



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- **Wind Sensor (Ultrasonic 2 Dimensional)**

1. Wind Speed
2. Range (Operation): 0 to 60m/s.
3. Sustainability: Up to 60 m/sec
4. Accuracy:  $\pm 0.5$  m/s
5. Resolution: 0.1 m/s
6. Threshold: 0.5 m/s
7. Response time: 1 sec
8. Output: Digital

- **Wind Direction**

1. Range: 0 to 359 Degrees
2. Accuracy:  $\pm 5$  degrees
3. Resolution: 1 deg.
4. Response time: 1 sec
5. Output: Analog/ Digital

- **Tipping Bucket Rain Gauge sensor or with better technology**

1. Collector Area Specified Collector Area would be between 200 cm<sup>2</sup>
2. Height above funnel would be sufficient to accumulate rain during heavy rainfall as per WMO guidelines.
3. Switch Rugged Magnetic Proximity
4. Resolution: 0.5 mm per tip



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5. Output: 0.1 sec switch closure
6. Accuracy  $\pm 2\%$ , for rain rate up to 25 mm/hr  $\pm 3\%$ , for rain rate between 25mm/hr to 50 mm/hr  $\pm 4\%$  or better, for rain rate between 50mm/hr to 100 mm/hr  $\pm 5\%$ , for rain rate  $> 100$  mm/hr
7. Material of Outer Body/housing (Base/Collector) Rust Proof Housing.
8. Levelling Suitable levelling adjustment screws and circular spirit level will be provided on the base of TBRG for levelling the Tipping bucket Mechanism.
9. Debris protection filter Suitable (Wire mesh) debris protection filter would be provided inside the collector.

- **Pressure sensor**

1. Range: 600 to 1100 hPa
2. Accuracy:  $\pm 0.2$ hPa for complete range (600 to 1100 hPa)
3. Resolution: 0.1
4. Output: Digital

- **Pan Evaporimeter**

1. Sensor : pressure type
2. Range : 30 to 280mm
3. Resolution : 5 mm or better
4. Pan Size : 1000mm -1200mm, shall be fixed/positioned on permanent pedestal of concrete
5. Material : GI



### Technical Specifications

#### • Solar Radiation Sensor: Si-Pyranometer

1. Output: Analog 0-25mV
2. Accuracy: Daily Accuracy:  $\pm 2\%$
3. Response time 95%:  $<1\text{ ms}$
4. Zero Offset A  $200\text{W/m}^2$  :  $0\text{ W/m}^2$  or better
5. Zero Offset B  $5\text{K/hr}$ :  $0\text{ W/m}^2$  or better
6. Non-stability change/1 year:  $\pm 2\%$  or better
7. Non-linearity at  $1000\text{W/m}^2$ :  $<0.2\%$  or better
8. Directional response at  $1000\text{W/m}^2$ :  $<10\text{ w/m}^2$  or better
9. Temperature response  $-10^\circ\text{C} + 40^\circ\text{C}$ :  $<0.15\%/^\circ\text{C}$  or better
10. Tilt response:  $+0.2\%$  or better
11. Sensitivity: Approx.  $20\ \mu\text{V/W/m}^2$  or better
12. Impedance:  $50\ \Omega$
13. Wavelength range:  $400 - 1100\text{ nm}$
14. Operating temperature range:  $-30$  to  $+70\ ^\circ\text{C}$  (with inbuilt heater) or better
15. Irradiance range:  $0 - 2000\text{ W/m}^2$
16. Cable length:  $5\text{ m}$  or more
17. Certification: calibration compliant to the international standards ISO/IEC17025 /9847/Equivalent/Better



#### • Solar Panel & Battery

1. Solar Panel ( Mono Crystalline ): Rated capacity  $100\text{ W}$
2. Single  $12\text{ V}$  chargeable SMF batteries  $65\text{ AH}$  minimum capacity