AMBIENT TEMPERATURE SENSOR -MPT 100

INTRODUCTION

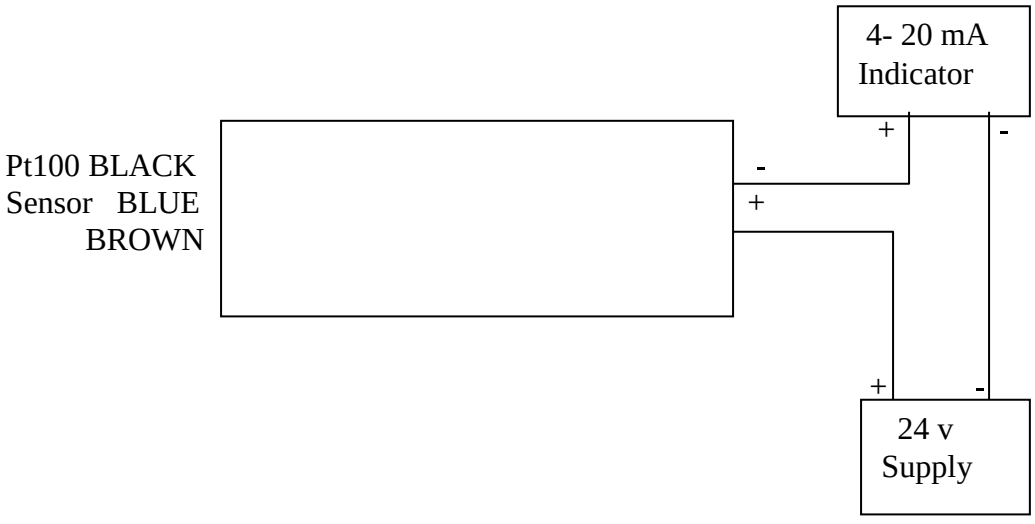
It is a naturally aspirated, 6-plate radiation shield. Its louvered construction allows air to pass freely through the shield, serving to keep the probe at ambient temperature. The shield's white color reflects solar radiation.

The most effective passive shelter . Protects temperature sensor from solar radiation and other sources of radiated and reflected heat. Multi-plate construction for maximum airflow

Specifications

- Construction : UV-stabilized white thermoplastic plates, aluminum mounting Bracket, white powder-coated ,stainless-steel U-bolt clamp
- Plate Diameter :196 mm
- Plate Height :110mm
- Measuring Range : 0 to 100 deg C
- Accuracy : ± 0.3 deg C
- Sensors: Temperature : RTD Pt100Ω Class A IEC 60751
- Output: 4-20mA ,2 wire Loop Powered ,Max load 600Ω at 24 V dc supply
- Supply Voltage: 12 to 26 VDC
- Housing Electronics: Poly carbonate watertight enclosure
- Protection: IP-67

WIRING DIAGRAM



INSTALLATION

The Ambient Temperature Sensor comes factory-assembled inside the radiation shield. The radiation shield bracket can be mounted to a pipe (1.0 - 2.0 in. diameter), using the supplied U-bolt.

The radiation shield can be installed anywhere in the vicinity of the PV array. It is recommended to place the Ambient Temperature Sensor on the north side (in the northern hemisphere) of the array, otherwise you must provide array shading setback

TOOLS AND MATERIALS NEEDED

Read this manual before beginning the installation to be sure you have everything you need.

- Wrench or pliers
- Wire cutters and stripper
- Multimeter
- Electrical Tapes , Wire ties and tabs

Might be required

- Hammer
- Drill with 3/16 in drill bit (4.7 mm) to drill pilot holes
- Adjustable wrench or 11/32 in. wrench and 7/16 in

LOCATION RECOMENDATION

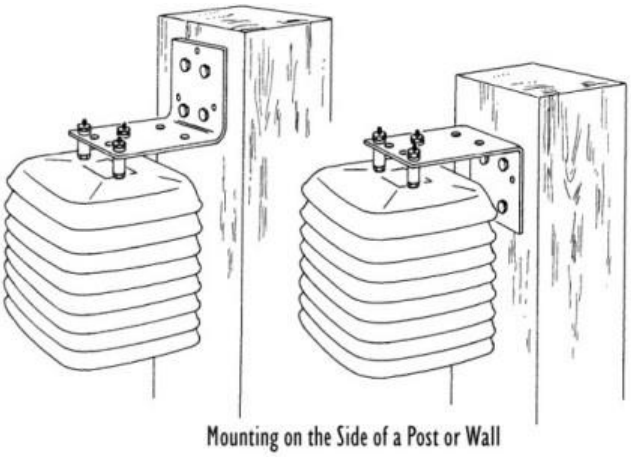
Use the following guidelines to determine the best location for mounting the ambient temperature Sensor

- The Radiation Shield works best when in a location with a steady breeze. Mount away from fences, buildings, trees, or other obstructions.
- Do not install over or near sprinklers. The Radiation Shield is not designed to protect the sensor from water sprayed upwards.
- If attaching to a building, the preferred location is the north side in the northern hemisphere and the south side in the southern hemisphere.

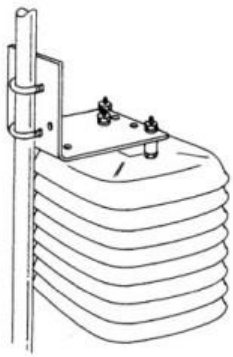
MOUNTING

The Solar Radiation Shield may be mounted in three orientations.

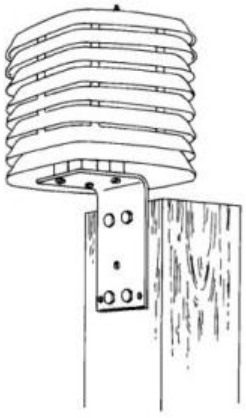
- On the side of a wooden post or a wall
- On a metal pipe with outside diameter between 1 in. and 1-1/4 in. (25 mm and 31 mm)
- On top of a wood post



Mounting on the Side of a Post or Wall



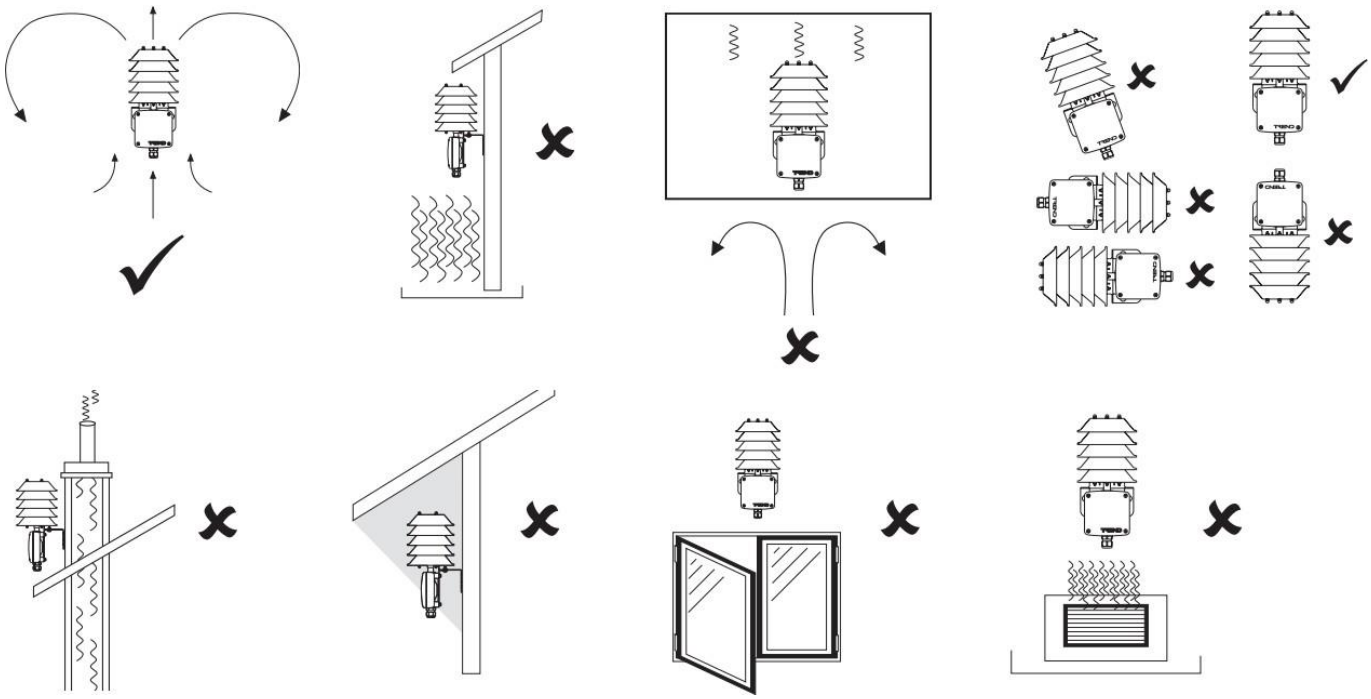
Mounting on a Pipe

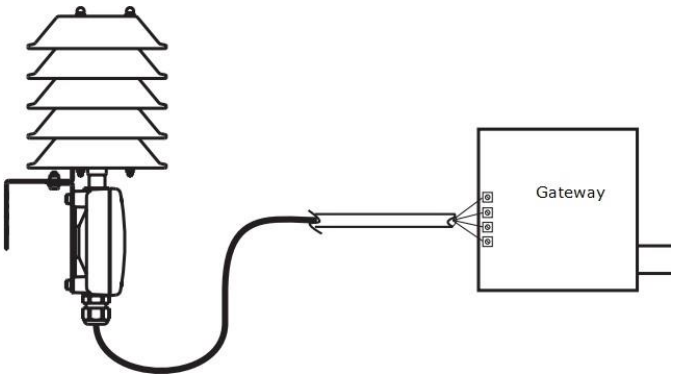


Mounting on Top of a Post

Example Installations :

ORIENTATION





CALIBRATION

- If using Modbus sensor then the Ambient Temperature is factory calibrated.

- If using analog output senor then use the following info to calibrate .
  Output - 4 to 20 m amp (0- 100 deg C)

It is highly recommended that the calibration be checked annually

SENSOR MAINTENANCE

- Over time, the sensing element may become covered in dust. The dust can be removed using compressed air.
- The effectiveness of the Radiation Shield will be reduced if the surfaces of the shield become dirty. Wipe the surfaces of the shield using a damp cloth to remove dirt, debris, etc.
- Keep areas between Radiation Shield plates free of debris that may obstruct air flow e.g., leaves, twigs, webs, nests.
- Under no circumstances should water or cleansing agents be used on the sensing elements. It is recommended that the accuracy of the sensor is verified every 12 months.
- DO NOT remove nesting insects or animals by spraying insect killer of any kind into the Radiation Shield because this may damage the sensors and the Radiation Shield.