



Sun Urja Energy Solution

A Complete Solar Solutions

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Datasheet & Installation Guide Module Temperature Sensor [MSPT 100V]

MODEL

MSPT 100V

DATASHEET

Introduction

The module temperature sensor is used by PV plant operators to know the temperature of the modules installed in the array. The module temperature sensor converts this reading into a voltage signal. This signal is sent back to the monitoring device.

As the system operator it's important to know the systems' performance. The module temperature sensor will help to enhance kWh performance by ensuring reliable access to the all necessary data.

Features

- Fast, stable and accurate
- Ip65 enclosure excellent long-term stability
- Onsite two-point calibration
- Loop powered

Applications

- PV module surface temperature measurement
- Weather monitoring systems

Specifications

Measuring Range 0 to 100 °C

Accuracy ± 0.5 °C

Sensor Type RTD PT100 Ω

Supply Voltage 12-24 VDC

Output A. 4 – 20 mA

B. 0 – 5 VDC

A, B, C are 3 different models

C. MODBUS RTU

Weight Approx. 150 gms

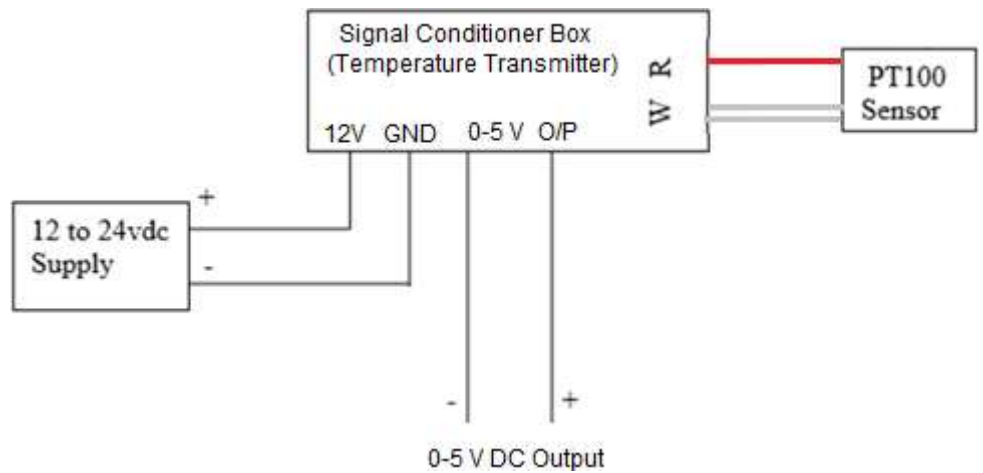
Sensor Housing Silicone Rubber Patch

Cable: 3 m PTFE insulated, twisted

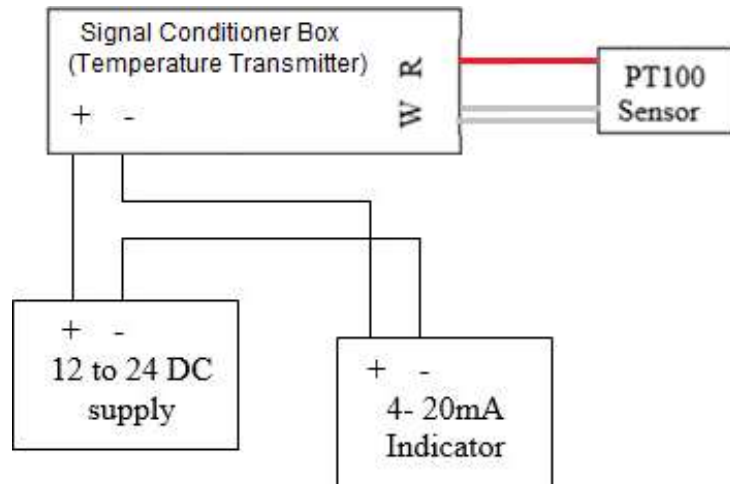


Wiring Diagram

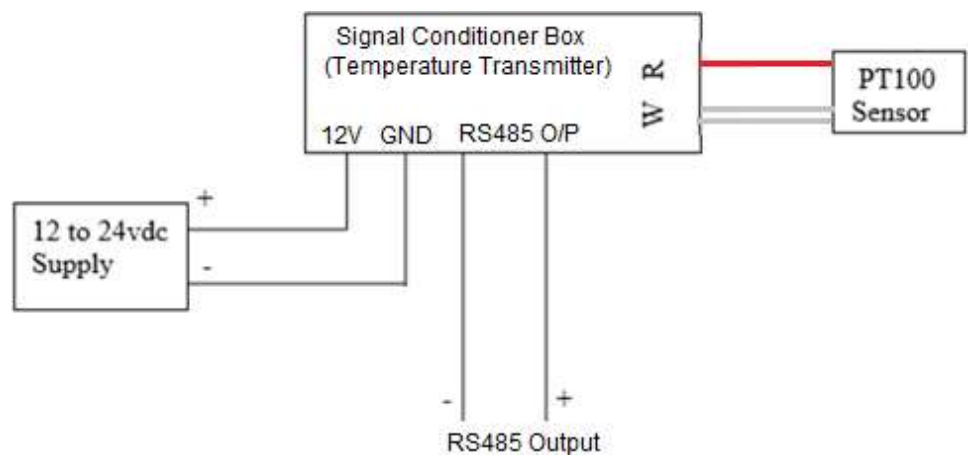
**I/O Specifications for
0-5 V DC Sensor Output**



**I/O Specifications for
4-20 mA Sensor Output**



**RS485 pinout for Sensor with
RS485 Output**



INSTALLATION

Guidelines

The following guidelines are recommended while installation of a Solae Module Temperature:

- This sensor is designed to attach directly to any solar panel. When placed on the center back side of the panel, it accurately measures the temperature of the panel.

Tools and Materials Needed

Please make sure you have all the necessary material as mentioned below:

- Wrench or pliers
- Wire cutters and stripper
- Multi meter
- Wire ties and tabs
- Electrical Tapes to cover the wire

Location Recommendation

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

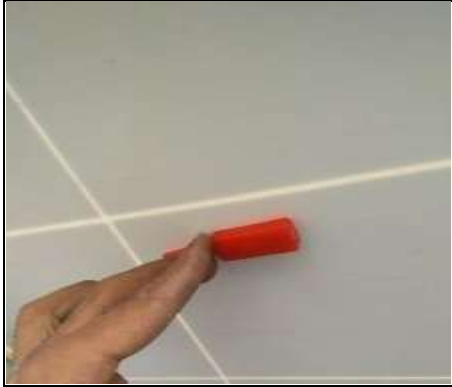
- Select a PV module that remains un-shaded throughout the day.
- For best operation, this sensor housing should be mounted flat against the surface to be measured.

Mounting

Observe the following requirements regarding the mounting location of the module temperature sensor:

- Select a PV module that remains un-shaded throughout the day.
- Prior to installation of the PV temperature sensor onto the PV panel, the installation area of the panel back should be thoroughly cleaned until it is greaseless, dry, and dust-free. This cleaning will ensure a good bond between sensor and panel and allow for accurate panel temperature readings.
- Affix the module temperature sensor to the panel back using the thermally conductive adhesive provided.
- Press the sensor firmly against the surface.
- Do not attempt to extend or shorten the pre-assembled 2m cable.
- Tie the sensor cable off in a way that does not pull on the sensor

Example Installations



Calibration

- If using Modbus sensor then the PV Module Temperature Sensor is factory calibrated.
- If using analog output sensor then use the following info to calibrate:
 - **Output:** 0 - 5 V_{DC} (0- 100 deg C)
 - **Temperature** in deg C = 20 * Sensor Output voltage (in Volt)
 - **Output:** 4-20mA (0- 100 deg C)
 - **Temperature** in deg C = 6.25 * (Output in mA - 4)
- If using RTD output then the sensor needs to be read as per this table:
- If the cable length is insufficient for the installation, additional cable can be added to the existing cable. If this is done, an accuracy de-rating factor must be added to the overall temperature accuracy of this sensor.

It is highly recommended that the calibration be checked annually