MSPT100- Module Temperature Sensor Datasheet & Installation Guide

DATA LOGGERS | ZERO EXPORT DEVICE | PV DG SYNC

WEATHER SENSORS | MFM METERS | SPD | MODBUS REPEATERS

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MSPT100 Introduction

This sensor is used to measure the temperature of the modules installed in the PV array of solar plants and it works o RTD principle

Features

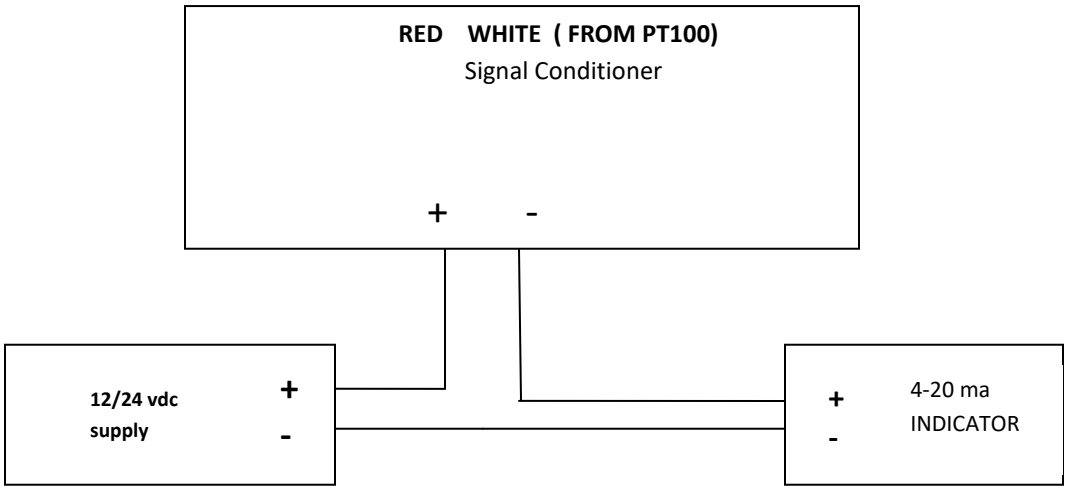
- Fast, stable and accurate with Ip65 enclosure excellent long-term stability
- Loop powered
- Onsite two-point calibration

Specifications

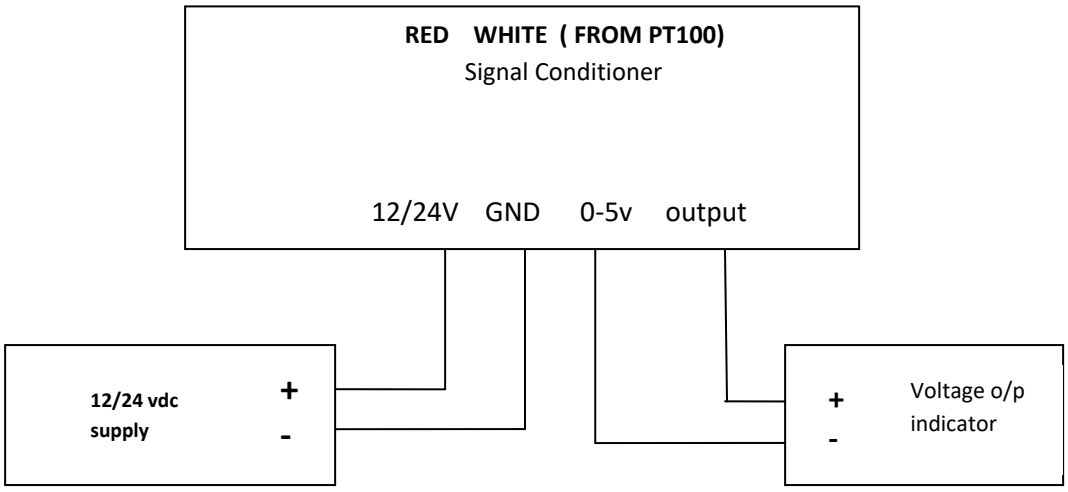
Measuring Range - 0 to 100
Accuracy +/- 0.5 c under standard conditions
Sensor Type- RTD PT100 Ω Supply Voltage 12-24 VDC
Output- 4 – 20 mA or 0– 5 VDC or MODBUS RTU (Optional with additional converter)
Weight Approx. 150 gms
Sensor Housing- Silicone Rubber Patch.
Cable: 3 m PTFE insulated, twisted pair lead, 3 core,7/0.1mm
Adhesive : Thermal Tape

Wiring Diagram

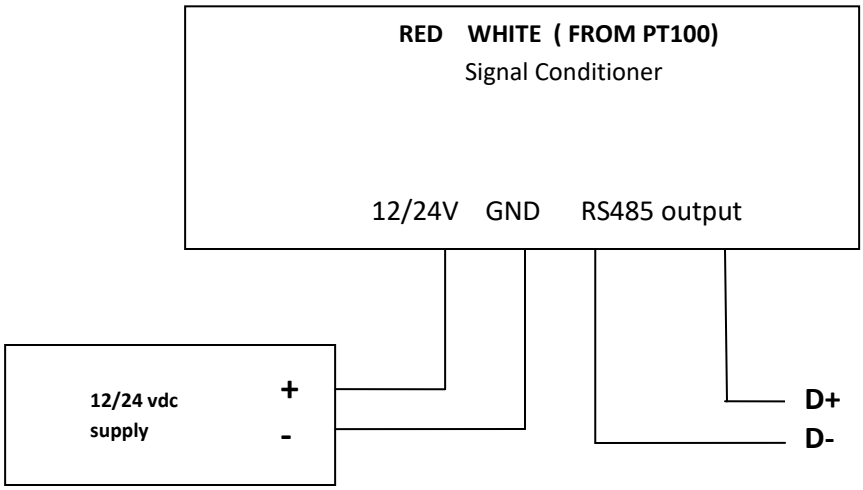
Current Based 4-20 mA – Output



Voltage Based 0-5 v Output



MODBUS RTU RS485 Output



INSTALLATION

This sensor should be placed on the center back side of the solar panel, to accurately measures the temperature of the panel.

Tools and Materials Needed

Wire cutters , Pliers and stripper - Multi meter - Screwdriver Electrical tapes and cable ties for wiring

Orientation

Location Recommendation

- Under PV Module which does not receive shade throughout the day.

Mounting

1. Before Installing the sensor onto the PV panel, the installation area of the panel back should be thoroughly cleaned to make it free from dust and oily things to ensure a good bond between sensor and panel .
2. Fix the sensor to the panel back using the thermally conductive adhesive provided and press the tape at all side against the surface, make sure the sensor cable is not pulling the sensor.

Caution - Do not attempt to extend or shorten the pre-assembled 2m cable, this may lead to erroneous readings .

Calibration and Reading

In case of Modbus Output – sensors are pre calibrated and Gives default output.
In case of Analog Output -

In case of 0-5volt Output

Temp in deg C = 20 * Sensor Output voltage (in Volt)

In case of 4-20mA Output

Temp in deg C = 6.25 * (Output in mA - 4)

NOTE

There will be some variation in the real vs. expected values as This sensor is a low-cost sensor and does not fall under any class. It's a alternative to the Class 2 sensors of the same type. In case of very accurate data for analytics, it's recommended to use Class 1/Class 2 sensors. Warranty of this sensor is as per the terms and conditions of original manufacturer. an accuracy de-rating factor must be added to the overall temperature accuracy of this sensor in case additional cable is added