Tm-V-4090 and Tm-I-4090

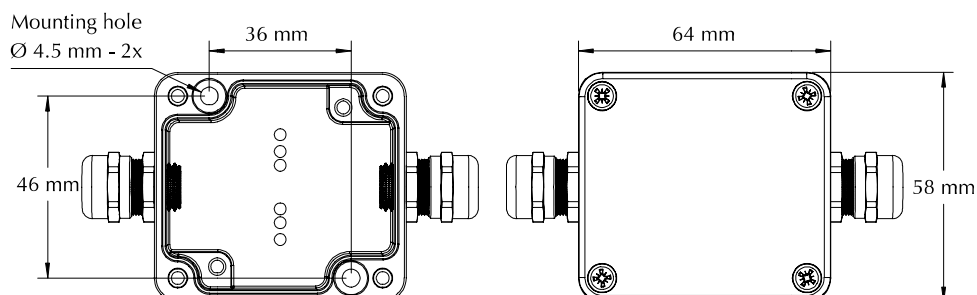## Module Temperature Sensor with analog Output
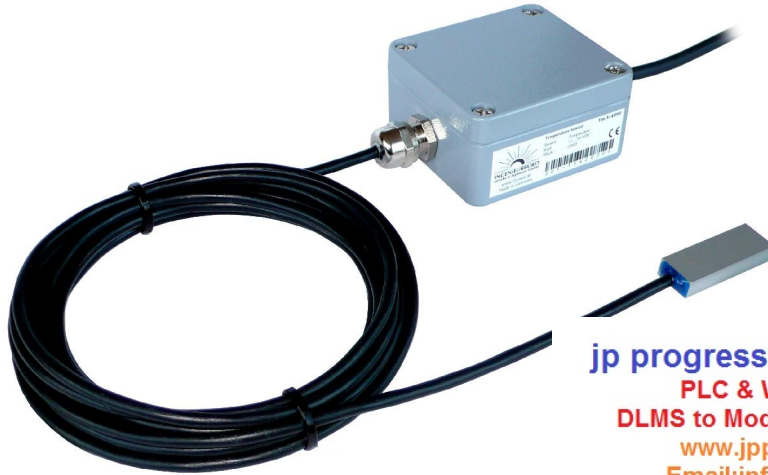
Short Description

Our module and surface temperature sensors come equipped with a stable aluminium housing and a robust weatherproof cable. Thanks to the use of top quality components the sensors achieve very high accuracy and are ideal for use in industrial and field environments (PV module temperature).
All sensors are shipped with a calibration protocol for the measuring amplifier.
If required, the sensors can be ordered with an inspection certificate 3.1 as per DIN EN 10204.

Technical Data

Types	Tm-V-4090	Tm-I-4090
Output Signal	0 to 10 V at -40 to +90°C	4 to 20 mA at -40 to +90°C
Uncertainty (-40 to +80°C)	1 K	1 K
Load	min. 100 kΩ	max. 400 Ω
Current	appr. 2 mA	max. 25 mA
Voltage Supply	12 to 28 VDC	
Sensor Element	Pt1000 Class A as per EN 60751	
Sensor Housing	Self adhesive Aluminium Block, 35 mm x 12 mm x 6 mm	
Sensor Cable	Length: 3 m, PUR coated, shielded (LiHC11Y, 2 x 0,25 mm²)	
Case Material	Powder Coated Aluminium	
Case Dimension / Protection Level	64 mm x 58 mm x 34 mm / IP 67	
Weight	appr. 350 g	
Operating Condition	Sensor Element -40 to +90°C / Case -40 to + 80°C	
Sensor Cable	Length: 3 m, PUR coated, shielded (LiYC11Y, 4 x 0.14 mm²)	
Customs Number	90 25 19 20	

Drawing

Mounting hole
Ø 4.5 mm - 2x
36 mm
46 mm
64 mm
58 mm

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Safety Instructions

The installation and assembly of electrical equipment must be carried out by electrically qualified persons.
The sensor may not be used with equipment whose direct or indirect purpose is to prevent human death or injury, or whose operation poses a risk to humans, animals or property.

Electrical Connection

The sensors are designed for safety extra-low voltage (SELV) operation.
The cable shield shall be connected to the PE during installation.
WARNING: Connecting the supply voltage to the signal lines will damage the de
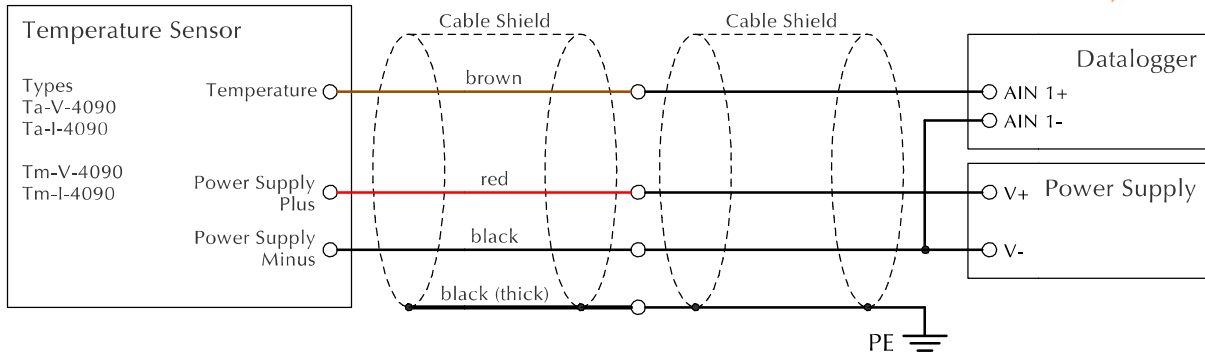
Maximum Additional Cable Length of Temperature Sensors with 3 m Connection Cable

Sensor type	Cable diameter						
	0.14 mm^2	0.25 mm^2	0.34 mm^2	0.5 mm^2	0.75 mm^2	1.0 mm^2	1.5 mm^2
Tm-V-4090	30 m	50 m	70 m	100 m	100 m	100 m	100 m
Tm-I-4090	200 m	200 m	200 m	200 m	200 m	200 m	200 m

Note: For Tm-I-4090 maximum internal resistance of data logger 200 Ω.

Installation Instructions

If mounted outdoors, avoid direct exposure to sunlight and rain to the sensor housing (Aluminium block) and sensor case. If necessary, provide protection from the sun and rain.

The through holes used to fix the sensor to a stable and suitable surface shall be accessible when the housing is opened. The tightening torque of the case cover is 180 Ncm.

The sensor element is mounted by glueing the aluminium block directly to the measurement surface. The surface must be dry, clean and degreased. It is also recommended using an extra fixing with silicon or Sikaflex, particularly for module temperature above 75°C.

Note: The module temperature measurement can be optimised by completely covering the sensor element.

The sensor cable needs a cable grip close to the sensor housing.

Optimization with Covering
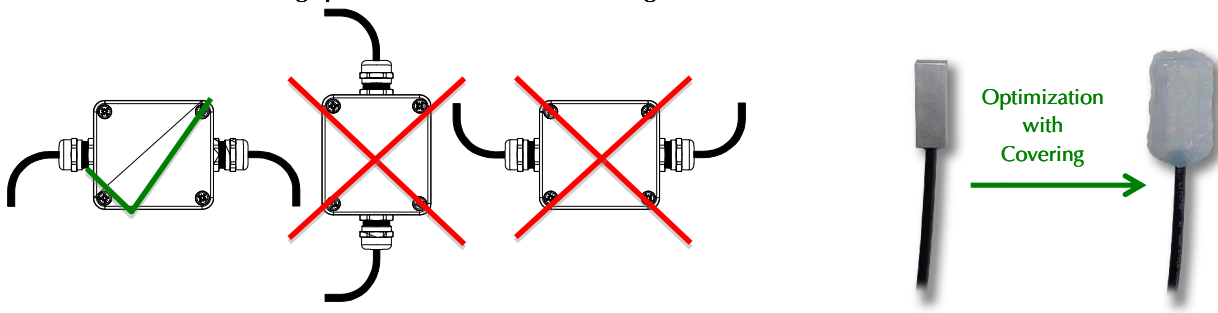
Maintanance

The sensors should be checked once a year for damage, contamination and