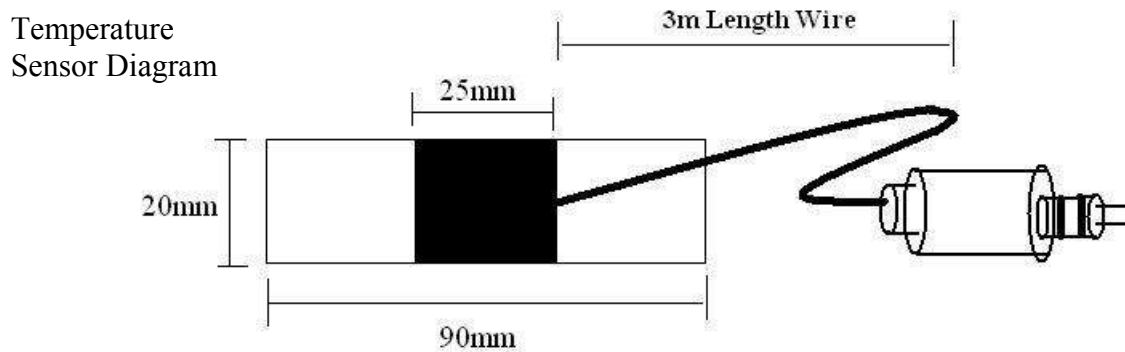
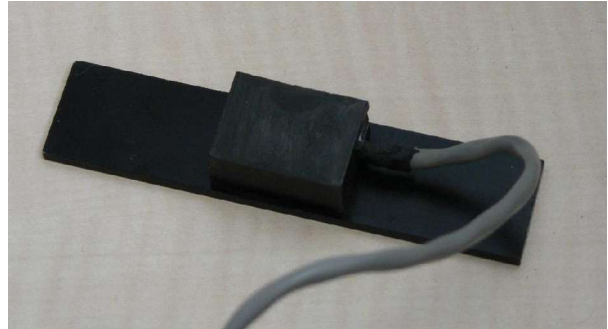


ATS-5100 REMOTE TEMPERATURE SENSOR

Features

- Directly calibrated in °Kelvin
- 1°C initial accuracy available
- Operates from 400 μ A to 5 mA
- Less than 1 Ohm dynamic impedance
- Easily calibrated
- Wide operating temperature range
- 140°C overrange
- Low cost



General Description

The ATS-5100 is designed to compensate the charging voltage of Manson PV Charge Controllers SBC -71XX and SBC-61XX series.

The ATS-5100 is an integrated circuit temperature sensor, sealed in Epoxy mounted on an aluminum plate probe for larger exposure of sensing area.

It has a sensing temperature range of minus 40C to 100C .

The sensor is calibrated at 25C and it compensates the charging voltage linearly at the rate of 20mV per degree C change . A rise of temperature of 10C will decrease the charging voltage by 200mV , and a decrease of 10C change will increase the charging voltage by 200mV.

The sensor is calibrated at 25C and it will compensate the charging set points of the PWM charging of the PV charge controller according to the temperature of the battery. When the temperature sensor detects a high battery temperature, it will lower the set points and similarly it will raise the set point when temperature of battery is **LOW**. Set points are bulk and float charge voltage set at the PV-charge controller.

Parametric Table

Temperature Min (deg C) Cont.	-40
Temperature Max (deg C) Cont.	100
Temperature (deg C) Intermittent	100 ~ 125
Supply Min (Volt)	5
Supply Max (Volt)	-

Parametric Table

Quiescent Current (mA)	1
Sensor Gain	10 mV/Deg K
Single Supply	Yes
Output Impedance (Ohm)	0.60
Reverse Current	15mA
Forward Current	10mA

Parameter	Conditions	LM335A			Units
		Min	Typ	Max	
Operating Output Voltage	$T_c = 25^\circ\text{C}$, $I_R = 1\text{mA}$	2.95	2.98	3.01	V
Uncalibrated Temperature Error	$T_c = 25^\circ\text{C}$, $I_R = 1\text{mA}$		1	3	$^\circ\text{C}$
Uncalibrated Temperature Error	$T_{\text{MIN}} \leq T_c \leq T_{\text{MAX}}$, $I_R = 1\text{mA}$		2	5	$^\circ\text{C}$
Temperature Error with 25 $^\circ\text{C}$ Calibration	$T_{\text{MIN}} \leq T_c \leq T_{\text{MAX}}$, $I_R = 1\text{mA}$		0.5	1	$^\circ\text{C}$
Calibrated Error at Extended Temperatures	$T_c = T_{\text{MAX}}$ (Intermittent)		2		$^\circ\text{C}$
Non-Linearity	$I_R = 1\text{mA}$		0.3	1.5	$^\circ\text{C}$

The 3.5mm Stereo Plug



Application

With Manson PV Charge Controller

Mount the probe onto the side of battery with sticky tape and insert the stereo plug to the PV charge controller.

Specifications:

3 M long wire with 3.5mm stereo plug
Aluminum plate Probe : 20 X 90mm.

Temperature Min deg.C Cont'	-40
Temperature Max deg.C Cont'	100
Operating Output Voltage(25 °C)	2.98 V
Sensor Gain	10mV/Deg C
DYNAMIC Impedance Ohm	0.6
MAXIMUM Reverse Current	15mA
MAXIMUM Forward Current	10mA

