Temperature (TMP) Sensor Data Sheet

TMP 200616

SPECIFICATIONS

> **Range:** [-40ºC; +125ºC]
> **Accuracy:** ±2ºC
> **Linearity:** ±0.5ºC
> **Consumption:** ~0.05mA

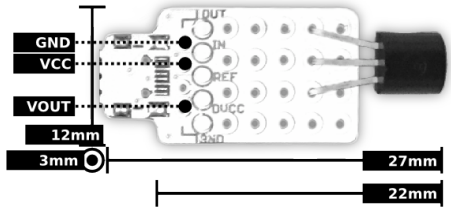

Fig. 1. Pin-out and physical dimensions.

FEATURES

> Calibrated directly in ºC
> Small form factor
> Raw data output
> Easy-to-use

APPLICATIONS

> Body temperature measurement
> Environmental analysis
> Psychophysiology
> Biofeedback
> Biomedical devices prototyping

GENERAL DESCRIPTION

Our calibrated Temperature (TMP) sensor has ben especially selected for seamless operation with BITalino (r)evolution, targeting the measurement of body or environmental temperature. Its small form factor enables easy application on the any surface. Typical applications include peripheral temperature data acquisition.

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REV A

BEWARE: DIRECT OR INDIRECT COUPLING TO THE MAINS MAY RESULT IN SHOCKING HAZARD

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TRANSFER FUNCTION

[-40ºC, +125ºC]

$$TMP(ºC) = \left(\frac{ADC}{2^n}.VCC - 0.5\right).100$$

$$TMP(ºF) = TMP(ºC).\frac{9}{5} + 32$$

$VCC = 3.3V$ (operating voltage)

$TMP(ºC)$ – TMP value in degrees Celsius ($ºC$)
$TMP(ºF)$ – TMP value in degrees Celsius ($ºF$)
ADC – Value sampled from the channel
n – Number of bits of the channel[1]

ORDERING GUIDE

Part #	Description
SENS-TMP-NC	Temperature (TMP) sensor without connectors
SENS-TMP-UCE6	Temperature (TMP) sensor with UC-E6 socket for seamless plug & play connection to a BITalino (r)evolution Plugged or Core
SENS-TMP-SHER	Temperature (TMP) sensor with a Molex Sherlock 4-pin socket for easy power and signal cable connection or pin breakout using PCB wires

[1] The number of bits for each channel depends on the resolution of the Analog-to-Digital Converter (ADC); in BITalino the first four channels are sampled using 10-bit resolution ($n = 10$), while the last two may be sampled using 6-bit ($n = 6$).