Temperature (TMP)
Sensor Data Sheet

SPECIFICATIONS
- Range: [-40°C; +125°C]
- Accuracy: ±2°C
- Linearity: ±0.5°C
- Consumption: ~0.05mA

FEATURES
- Calibrated directly in °C
- 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 been 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 any surface. Typical applications include peripheral temperature data acquisition.

REV A
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BEWARE: DIRECT OR INDIRECT COUPLING TO THE MAINS MAY RESULT IN SHOCKING HAZARD
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TRANSFER FUNCTION
[-40°C, +125°C]

\[ TMP(°C) = \left( \frac{ADC}{2^n} \cdot VCC - 0.5 \right) \cdot 100 \]

\[ TMP(°F) = TMP(°C) \cdot \frac{9}{5} + 32 \]

\[ VCC = 3.3V \text{ (operating voltage)} \]

\( TMP(°C) \) – TMP value in degrees Celsius (°C)
\( TMP(°F) \) – TMP value in degrees Celsius (°F)
\( ADC \) – Value sampled from the channel
\( n \) – Number of bits of the channel

ORDERING GUIDE

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SENS-TMP-NC</td>
<td>Temperature (TMP) sensor without connectors</td>
</tr>
<tr>
<td>SENS-TMP-UC6</td>
<td>Temperature (TMP) sensor with UC-E6 socket for seamless plug &amp; play connection to a BITalino (r)evolution Plugged or Core</td>
</tr>
<tr>
<td>SENS-TMP-SHER</td>
<td>Temperature (TMP) sensor with a Molex Sherlock 4-pin socket for easy power and signal cable connection or pin breakout using PCB wires</td>
</tr>
</tbody>
</table>

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