Temperature logger Bio3 Freiburg

Charging

Plug to USB power source and set switch to ON to position.

Yellow light ON indicates charging.

Yellow light OFF indicates no charging.

Charging from empty to full takes 8 hours (400 mA current for 2600 mAh)

For charging, you can remove the SD-card, if you do not want to log data.

If you leave the SD-card in the circuit during charging, data logging is continuously active.

Switch on signals

Three blinks in green indicate battery is ok to go for at least a few days.

Three blinks in red indicate that the battery is close to empty.

The numbers of subsequent green blinks indicate the number of sensors recognized.

Permanent green light indicates NO SD card recognized.

(Do not leave it this way, it will discharge the battery, please switch off.)

After the experiment, wash sensor with demineralized water to remove salt and other contaminations. This is to prevent corrosion and to increase durability.
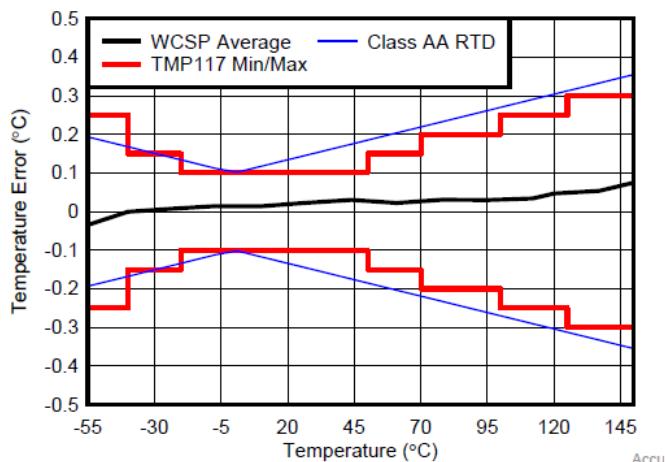
Temperature sensor accuracy of TMP117A

*±0.1 ℃ (maximum) from –20 ℃ to 50 ℃*

NIST traceability
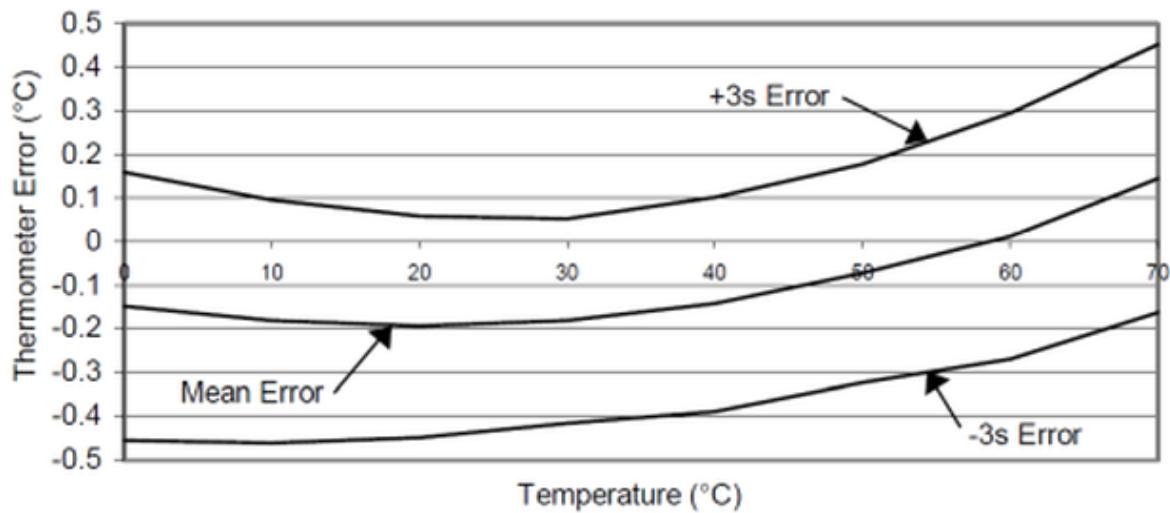
Medical grade: meets ASTM E1112 and ISO 80601-2-56

YBG Temperature Accuracy

TMP117

DS18B20 Typical Error Curve

Settings.txt file on the SD card

/ This config file is for the Schmidt-Schulze-Logger
/ This file requires UNIX line ends (LF). The first character of this line specifies this line as a comment.
/ A comment does not influence the logger.
/
/
/ logging interval in seconds, a multiple of this must be 3600 , 300 seconds is the default of the software.
/
interval=300
/
/
/
/interval=6
/ use 6 seconds for test purposes, e.g. for a new sensor chain
/
/ Sd-card name style: LOGGER_BM3
/ logger id style in Firmwaware: ATbioBm3
/
/ charge logger using a Mico-USB cable with switch in ON position.
/ Remove microSD card, if you do not want to log data during charging.
/ the yellow LED indicates charging activity. It goes dark when charging finished.
/ charge current is 500 mA, max. charge time is 7 hours

Hardware used

Controller board

Adafruit Feather 32u4 Adalogger for Arduino Integrated Development Environment

https://www.adafruit.com/product/2795
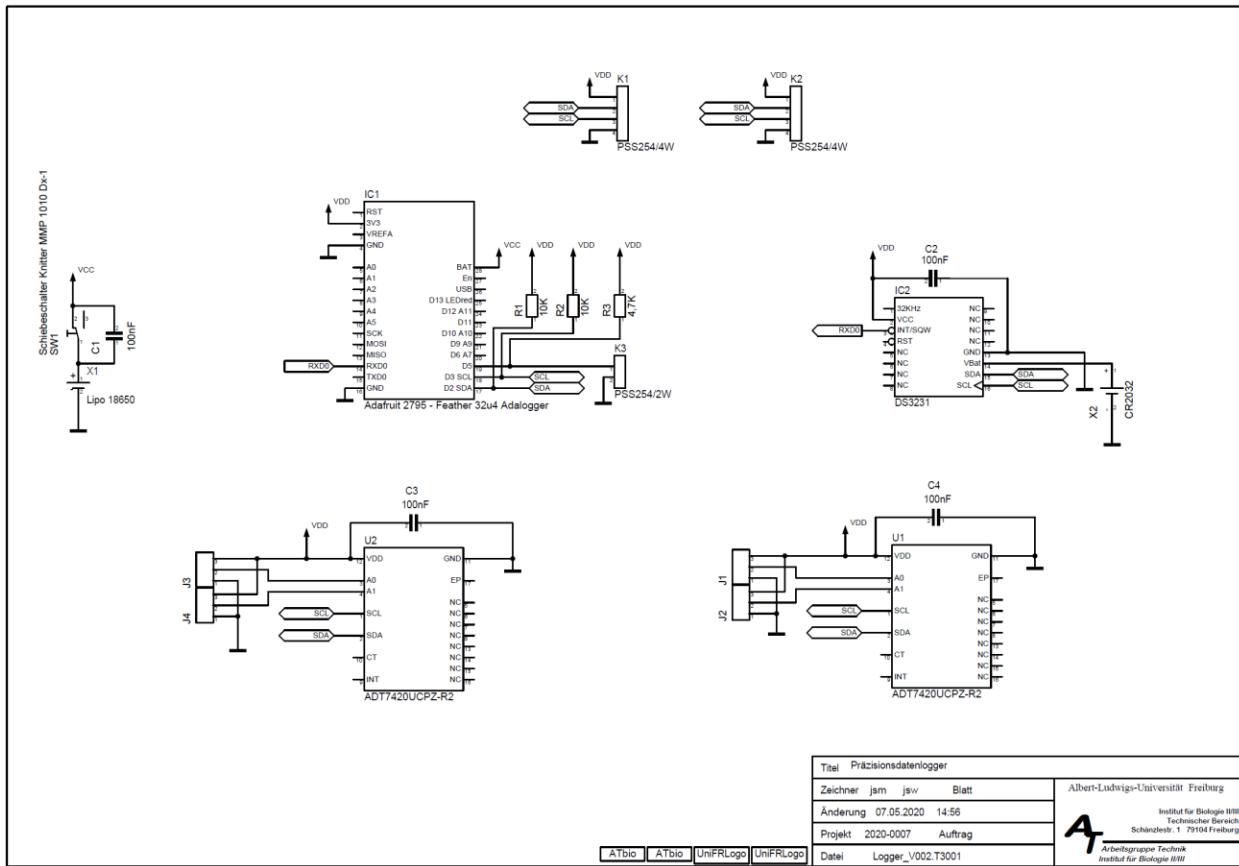
Clock

The DS3231 is an extremely accurate I²C-integrated temperature-compensated crystal oscillator (TCXO) and crystal. Accuracy ±2ppm from 0°C to +40°C. Expected CR2032 backup battery life time is 10 years.

Battery

GP 18650 2,6 Industrial cell, Li-Ion, 18650, 3,7 V, 2600 mAh, Button Top, with protection circuit.

Präzisionsdatenlogger — Logger_V002.T3001

PD Dr. Ekkehard Schulze
Bioinformatics and Molecular Genetics
Institute for Biology 3
Albert-Ludwigs-University
Schänzlestr. 1
79104 Freiburg
Germany   Tel.   ++49-761-203-8365
e-mail: Ekkehard.Schulze@biologie.Uni-Freiburg.de   FAX ++49-761-203-8352