User Manual   
ROOTDataLogger I & II Version March 2025 (ahp1)

**Caution:**

Always use a 12 V battery. Depending on the type, the battery must be removed for transport—gel or liquid batteries may leak if stored improperly.

* The currently installed AGM battery should be leak-proof.

**Before data collection:**

Charge the battery (ON/OFF switch to OFF.)  
Delete old files on the SD card.

**Data Collection:**

1. **Insert the SD card.**
2. **Connect the sensors:**   
   – Connect the load cell to the LOAD socket (6).

– Connect the draw-wire sensor to the CABLE socket (5).

1. Select the correct load cell (2kN/20kN) using switch (8).

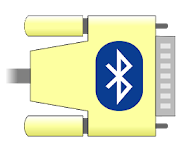
Switching the load cell automatically performs a TARE.

1. **Set the ON/OFF switch (4) to ON.**

(When switching on and off, a new .csv is generated in each case).

1. **Note the exact time of the measurement.**
2. **Set the BT-MON/LOG switch (1)**
   * When the green LED (3) flashes, the measured values are being saved directly to the SD card.
   * When the blue LED (2) flashes, the measurement data can be read via Bluetooth (using RootDataLogger I or II, password: 1234) or displayed on a laptop via the USB socket (7).
   * If no LED is flashing, check whether the SD card has been inserted correctly.  
       
     **⚠️ Important:   
     When the blue LED is flashing, data is *not* being saved to the SD card.**

**Apps (only Android devices for now (not iPhone compatible))**



App for Android:

Serial Bluetooth by Kai Morich



App for Windows

Serial port monitor (free version)– not yet tested



**2**

**1**

**2**

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**6**

**7**

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**5**

**6**

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**2**

**Technical data**

At 12.2 volts, an average of 140 mA (1.16 mA idle),   
i.e., a fully charged battery with, for example, 6 Ah, lasts theoretically for   
approx. 40 hours (6 Ah/0.14A = 42.9 h).

Note that the lead-acid battery (AGM) is fully charged at a terminal voltage of 12.8 V (100 %) and discharged at a terminal voltage of approx. 11.8 V (0 %).

**Calibration:**

LEANE – DBBE 200 kg: factor **10050** – calibrated with a 20 kg and 40 kg load – **May 2022**

ME-Systeme - 5000 kg\_ (factor **660** – measured with a 40 kg and 80 kg load – **May 2022**

**Parts List**

|  |  |  |  |
| --- | --- | --- | --- |
| No° | Article | Description | Seller |
| 1 | Basetech Outdoor IP67 | Case 460 x 360 x 175 mm | conrad.ch |
| 2 | Neutrik NC5FD-LX-B | 5-Pol socket | conrad.ch |
| 3 | Neutrik NC5MX | 5- Pol plug | conrad.ch |
| 1 | Neutrik NAUSB-W-B | USB plug | conrad.ch |
| 1 | Neutrik SCDP-0CON | Seal for sockets | conrad.ch |
| 1 | TC-R13-208B-02 12 V/DC 20 A | Switch (green LED) | conrad.ch |
| 1 | TC-R13-208A-02 250 V/AC 10 A | Switch (no LED) | conrad.ch |
| 1 | Arduino Uno | Microcontroller | conrad.ch |
| 1 | TC-9927152 | HC-05 Bluetooth module (Android only) | conrad.ch |
| 1 | Joy-it SEN-HX711-20 | HX 711 - Amplifier board for the load cell | conrad.ch |
| 1 | Adafruit Assembled Data Logging shield | SD Shield Logger for Arduino Uno | conrad.ch |
| 1 | SD Card | 32 GB | conrad.ch |
| 1 | Motobatterie YTX7A-BS Okay | Battery 12 V / 6Ah | Landi.ch |
| 1 | Kemo Spannungswandler (3 - 15 V/DC 1.5 A) | Voltage transformer/stabilizer | conrad.ch |
| 1 | 110x80x70mm IP67 | Transparent plastic housing Arduino | bastelgarage.ch |