## Instructions for connecting the Tarom MPPT 6000-M to a serial interface on a computer or microcontroller

1. Use the Steca PA CAB3 to connect your Tarom MPPT 6000-M to the USB port on your PC.

    If you are using a PC with a hardware serial port (DB9 plug): The PA CAB3 is probably not required. You can connect the TX port of the Tarom's UART/RS232 to pin 2 of a standard DB9 serial plug, the RX port of the Tarom to pin 3 of the DB9 plug, and the Tarom's GND to pin 5 of the DB9 plug. If the +/- 5V signal does not work with your PC's serial port then you may need a level shifter to raise these voltage levels, however most modern PCs should be compatible with the Tarom's signal voltages. Please note that the UART/RS232 output from the Tarom is galvanically isolated.

    If you are using a microcontroller instead of a PC: The PA CAB3 is probably not required. The RS232 output signal of the Tarom MPPT 6000-M is between -5V and +5V (bipolar) and can, depending on your microcontroller, be connected the UART on the controller with a UART to RS232 level shifter (RS232 to TTL levels). Please note that the UART/RS232 output from the Tarom is galvanically isolated.

    Connect the PA CAB3 to the Tarom MPPT 6000-M as follows:
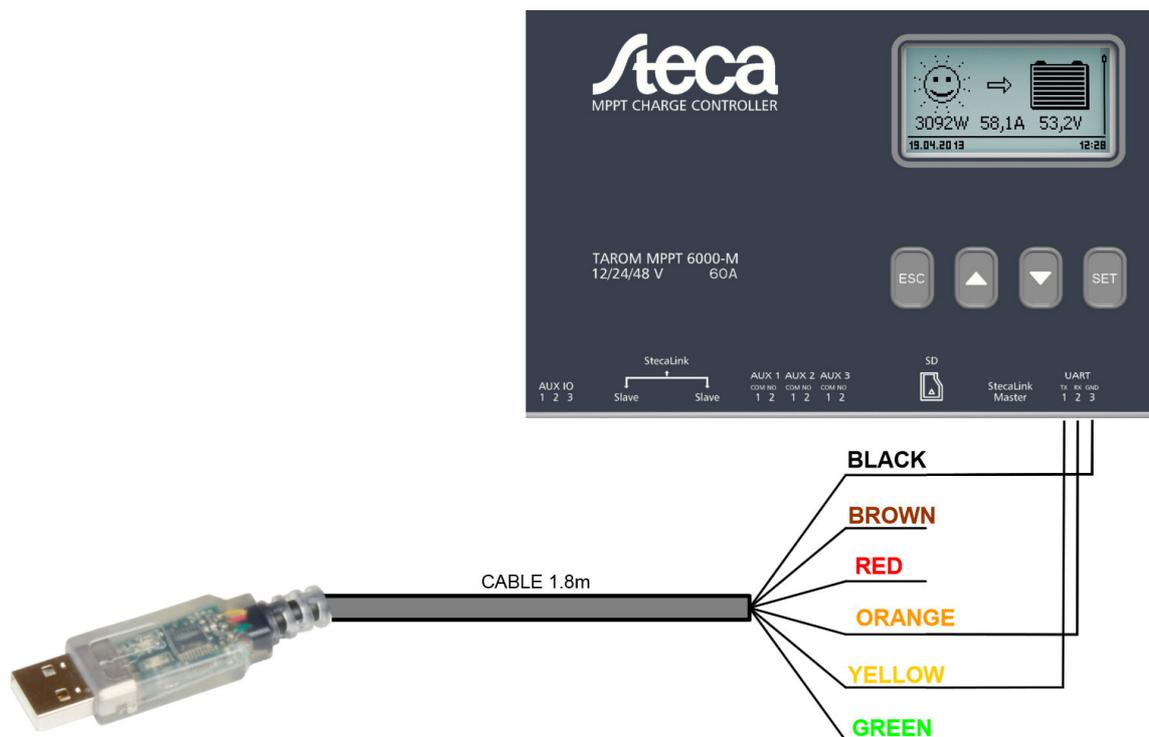
- Transmit of CAB3 (orange) to receiver of the Tarom (2, RX)
- Receiver of CAB3 (yellow) to transmit of the Tarom (1, TX)
- GND of CAB3 (black) to GND of the Tarom (3, GND)

2. Install the FTDI driver software from here if you are using Windows or Mac OS X (for most Linux distributions the drivers are included from kernel version 3.0.0-19) and are using the PA CAB3: http://www.ftdichip.com/Drivers/VCP.htm

3. Plug the USB end of the PA CAB3 into a USB port on your computer (or if you have a DB9 serial port then connect that to the Tarom as mentioned above). Now, under Windows, find out the COM port number in your device manager. The CAB3 should show up as "USB Serial Port (COM XX)" under the "Ports (COM & LPT)" device category. Please note this COM port number for your serial terminal program or application.

4. As long as you wish to collect current data, the PC or microcontroller to which the Tarom is connected must be on with your serial terminal software running.

5. The relevant settings for the serial terminal program are:

   - 4800 baud
   - 8 data bits
   - No parity
   - 1 stop bit
   - No flow control

6. These settings will allow you to collect the data through your virtual serial port. You can then save that data with your serial program. A new data set is sent every 60 seconds +/- 1s. For a complete protocol description please consult the Tarom MPPT 6000-M user manual.