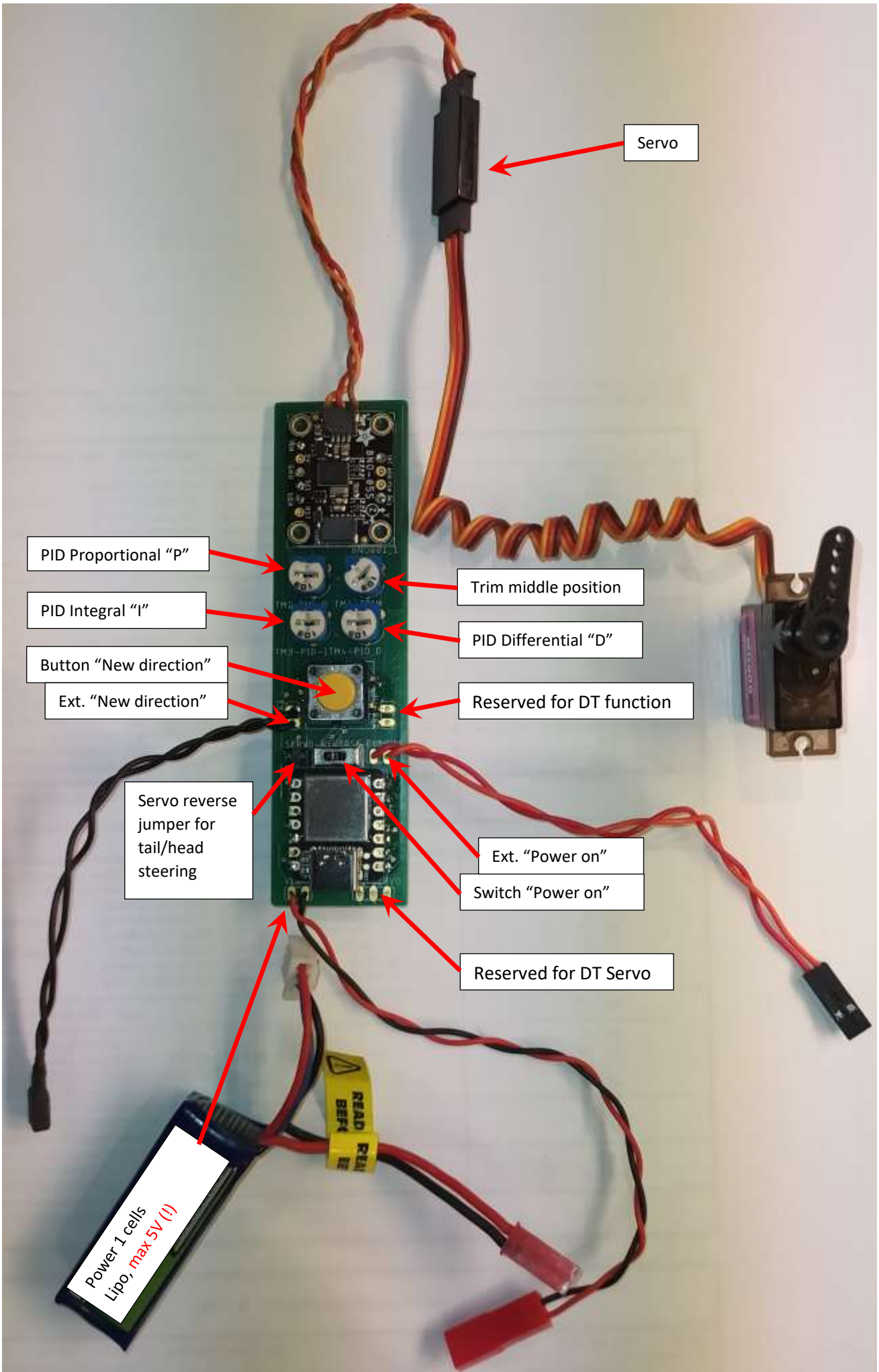
F1E-Steering - Overview connectors F1E-PS device (© Paul Seren 2022)



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Servo

Connection to the servo

Trim middle position

By pressing the Button “New direction” / Ext. “New direction” and adjust the Trim potentiometer at the same time you can adjust the middle position of the servo/(rudder)

PID Proportional “P”

By adjusting the PID Proportional “P” you can adjust the angle amplitude of the ruder for the deviation from the desired direction to the individual characteristics of your model

PID Integral “I”

By adjusting the PID Proportional “I” you can adjust the ….. ruder for the deviation from the desired direction to the individual characteristics of your model

PID Differential “D”

By adjusting the PID Proportional “D” you can adjust the …… ruder for the deviation from the desired direction to the individual characteristics of your model.

Reserved for DT function

Usable for further development of the device for the communication with a timer or RDT. Not enabled in version V 0.9

Reserved for DT Servo

Usable for further development of the device for the communication with a timer or RDT. Not enabled in version V 0.9

Switch “Power on” / Ext. “Power on”

+ Power Switch onboard or via external wiring

Button “New direction” / Ext. “New direction”

Most important button: Pressing the button (or using a button with the external wiring) will define the new direction and set the Servo to the defined/trimmed middle position. Each pressing of the button will use the current heading as the new direction.

Servo reverse jumper

The default is set for a head-steering as a conventional steering with a physical magnet in front of the F1E-model. If you want to use the steering with a vertical tail at the tailplane, you can change the servo / deviation correction direction with a jumper bridge (2,54 mm)

Power 1 cell / Lipo 3,7 (max 5V input)

One cell Lipo (“1S / 3.7 V”) is recommended.

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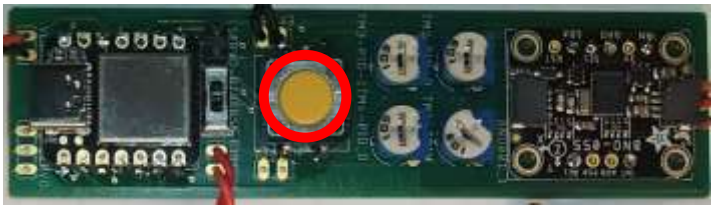
How to use the device

- Connect the power (Lipo 2S/7.4 V recommended)
- Power Switch on
    - Two green LED from the microcontroller and sensor will appear

    - A yellow LED will start blinking

    - The F1E-rudder-Servo will go to a position of maximum
- This yellow blinking and the Servo amplitude indicate that a calibration is necessary
- **Calibration**:
    - 1. Take the device in your hand and “write” an imaginary “8”. This will calibrate the magnetic sensor!
    - 2. Lay the device/the model nearly flat on the floor. Do not touch/move for a moment. This will calibrate the earth gravity. (The order of both calibrations could be changed)
    - When the calibration is finished
        - The yellow LED will glow permanently
        - The F1E-rudder-Servo will move to the adjusted middle position
        - The device is now ready for the next flight
- **Flying**
    - After successful calibration:
        - Press the “New direction” Button:
            - The Servo will move the rudder to middle /neutral position
            - Start your model
            - Have fun and success!



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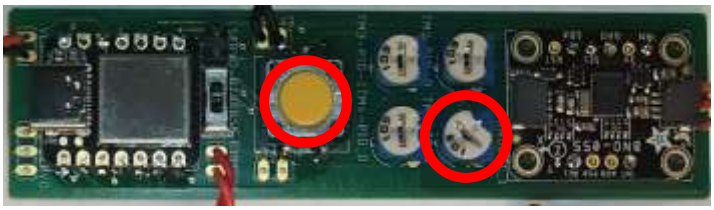
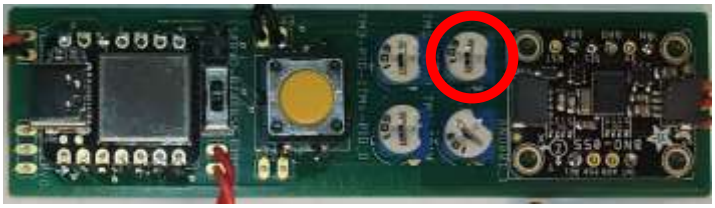
- **Trimming**
  - After successful calibration:
    - Press and hold the “New direction” Button:
      - The Servo will move the rudder to middle /neutral position
      - Adjust the servo with the Trim potentiometer the Servo



- **Adjust the amplitude of the rudder**
  - After successful calibration:
  - Adjust with the PID – P potentiometer the amplitude



More information will be updated….
See also https://vimeo.com/manage/videos/663940238