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# MANUAL

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## Version V4.81

### Overview:

- 32 bit, 48MHz MCU controlled operation
- Adaptive charging
- Current sensing
- Controlled with an RC channel – can be mounted in a hidden position

### Operation features:

- Backup capacitor for RC models giving safe emergency landing when RC battery or BEC fails
- Buffer surge current on high power model airplanes and helicopters
- Effective buffering of servo reverse current

### Maximum Ratings:

- Maximum input voltage: 10 V
- Maximum buffer voltage (output fully charged): 8.5 V
- Peak current: 25 A
- Cut-off voltage: 3.4 V

### Connections and button:

RC plug: For power supply and RC switch function (if used)
Button: Turns the system off after the flight

### Connection to receiver without using RC switch function:

Connect the buffer to a free servo socket in your FBL system or receiver. This socket must not be controlled by a channel in your transmitter.

### Connection to receiver with RC switch function:

Connect the buffer to a servo socket that can be switched from +100% to –100% by your transmitter.

To detect the switch direction (on/off) do the following:

1. Put the switch (2-position switch works best) in the desired on-position and connect your receiver supply as normal
2. When the buffer is fully charged, disconnect the main supply to your receiver. The red LED will start to flash showing that the buffer mode is active
3. Now put the switch on your Tx to the desired off position. The yellow LED should begin to flash. If the yellow LED does not flash, you must reverse (servo) the RC channel in your Tx. Now the yellow LED will flash
4. After 5 seconds the system will shut down

**Important:** The RC switch off only works reliably when the system can detect a current flow. Therefore, you should connect at least one servo to your FBL or receiver during the setup and testing of this function.

### LED status with active supply from RC battery or BEC (normal operation):

| | |
|---|---|
| red (PWR): | Flashing: after power on: Setup/detection of BEC voltage |
| | Solid on: RC supply working |
| yellow (20%): | Flashing: Buffer is charging |
| | Solid on: Charging is completed |
| green (60%): | Buffer charged 60 – 80% |
| green (FULL): | Buffer fully charged |

### LED status with failure in RC supply (emergency mode):

| | |
|---|---|
| red (PWR): | Flashing: Buffer supplying RC power |
| yellow (20%): | Solid on: State of charge over 20% |
| | Flashing: RC switch off activated → After 5 seconds the system will shut down |
| green (60%): | Buffer charged 60 – 80% |
| green (FULL): | Buffer fully charged |

### Operation:

After the buffer is connected as described, you can use your model normally. Connect the flight battery or switch on the RC battery. The buffer will detect the required voltage (5.6 V to 10 V) automatically, then start the charging process (yellow LED is flashing). This will last about 40 seconds – about the time you will need to fit the canopy and carry your model to the take-off pad. If the RC supply fails, the buffer will take over the supply without interruption to allow a safe landing.

After your flight, please switch off the main RC supply first. Now you can switch off the buffer with the button or the designated switch on your transmitter. When operated with the Tx switch, the yellow LED will flash for 5 seconds before the system shuts down. If you switch back on during this period, the buffer remains active.

**Important:** To switch off, the buffer detects the switching process from on to off – not the position of the switch. If the switch is in off position when the buffer is active (i.e., left in the off position when powering up again), the buffer will only turn off after switching back on and then off again. This feature makes sure, that the buffer is not disabled if used while the switch is in the off position.