1S Series Charging Board

VIFLY – series charging board for 1S batteries
BT2.0 and PH2.0 connectors · user manual



Read the entire manual before first use, especially the safety instructions in chapter 3. Never charge at more than 1.5 A.

Rotorama, s.r.o. · www.rotorama.com

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1. Product description

1.1 Intended use

The VIFLY 1S Series Charging Board is used to charge **single-cell (1S) LiPo batteries** with **BT2.0** or **PH2.0** connectors, as used mainly in small whoop-type drones. You connect the board to an ordinary balance charger just like a multi-cell battery and plug **1 to 6** single-cell batteries into the board at the same time.

The batteries are connected **in series** on the board. The charger therefore “sees” them as one multi-cell battery and monitors each of them as a separate cell via the balance connector. This allows you not only to charge 1S batteries, but also to bring them to **storage voltage (Storage)**, which ordinary 1S chargers usually cannot do. You set the number of connected batteries with the rotary selector; the board is protected by a built-in fuse.



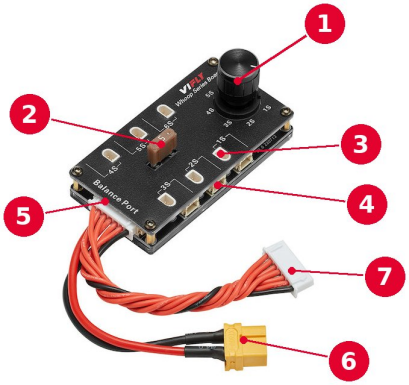
VIFLY 1S Series Charging Board – BT2.0 and PH2.0 version

1.2 Technical data and package contents

Manufacturer	VIFLY
Product designation	VIFLY 1S Series Charging Board, BT2.0 & PH2.0 version (marked *Whoop Series Board* on the board)
Intended for	single-cell (1S) LiPo batteries
Number of batteries	1–6 at the same time, connected in series
Battery connectors	BT2.0 and PH2.0
Connection to charger	XT60 (power) and JST-XH 7-pin (balance connector)
Battery count selection	rotary selector 1S–6S
Max. charging current	1.5 A (limited by the selector); 1C recommended
Fuse	5 A (built-in, replaceable)
Package contents	1× series charging board
Not included	charger, charger power supply, batteries

※ The 5 A fuse protects the board in the event of a short circuit. It does not mean you can charge at 5 A – the rotary selector is rated for 1.5 A.

1.3 Parts overview



Parts of the board

① **Rotary selector 1S–6S** – sets the number of connected batteries.

② **5 A fuse** – replaceable blade fuse.

③ **BT2.0 socket** – position for one battery (positions are marked 1S to 6S).

④ **PH2.0 socket** – alternative connector of the same position.

⑤ **Balance Port** – connection of the balance lead to the board.

⑥ **XT60 connector** – power (charging) lead to the charger.

⑦ **JST-XH 7-pin balance connector** – to the charger's balance port.

2. Use

2.1 How series charging works

This is a **series board, not a parallel one**. In a series connection the battery voltages add up, but the capacity – and therefore the charging current – stays the same as for one battery. Always set the charging current according to the capacity of **one** battery, not their sum.

Example: you are charging four 300 mAh batteries. For 1C charging set the charger to 0.3 A, for 2C to 0.6 A – never to 1.2 A or 2.4 A.

The charger monitors the voltage of each battery separately via the balance connector and equalises them by balancing at the end of charging. The starting voltage of the individual batteries is therefore not critical; all batteries should, however, be **identical** – the same type, capacity and brand.

2.2 Charger settings

- Use a charger with **LiPo balance charging** that supports as many cells as the number of batteries you are charging (up to 6S).
- Select the **Balance** program and the cell type according to the batteries – **LiPo**, or **LiHV** if the batteries are high-voltage.
- Set the cell count (S) **equal to the number of connected batteries** and to the position of the board's selector.
- Set the charging current according to the capacity of one battery, 1C recommended, **1.5 A at most**.

Reference voltages to check on the charger display:

Number of batteries	LiPo fully charged	LiHV fully charged	Storage voltage
1 (1S)	4.20 V	4.35 V	3.8 V
2 (2S)	8.40 V	8.70 V	7.6 V
3 (3S)	12.60 V	13.05 V	11.4 V
4 (4S)	16.80 V	17.40 V	15.2 V
5 (5S)	21.00 V	21.75 V	19.0 V
6 (6S)	25.20 V	26.10 V	22.8 V

Per battery: LiPo 4.20 V, LiHV 4.35 V, storage 3.8 V.

2.3 Charging procedure

① Place the board on a non-flammable surface, away from flammable objects.

② Check the batteries – they must not be swollen or mechanically damaged and must not have damaged leads or connectors.

③ Set the rotary selector to the number of batteries you are going to charge.

④ Connect the batteries to the positions in order starting from position **1S** (1S, 2S, 3S …). Always connect only one battery to each position – either to the BT2.0 or to the PH2.0 socket, never to both at the same time.

⑤ Connect the board to the charger: the XT60 connector to the power output and the JST-XH balance connector to the charger's balance port.

⑥ Set the program on the charger according to chapter 2.2 and check that the charger reports the correct cell count. Then start charging.

⑦ When charging is finished, disconnect the board from the charger first and only then remove the batteries.

If the charger reports a different cell count than the number of connected batteries, do not start charging – check the selector position and the battery connections.

2.4 Storage charging

Batteries you will not use for several days should be brought to the storage voltage of **3.8 V per cell**. The procedure is the same as for charging; just select the **Storage** program on the charger. Depending on their voltage, the charger charges or discharges the batteries and equalises them at the storage voltage.

If your charger supports internal resistance measurement, you can use it via the board to check the condition of the individual batteries.

2.5 Troubleshooting

Problem	Possible cause and solution
Charger reports a cell count error	The selector does not match the number of batteries, the batteries are not connected from position 1S, or the balance lead is missing. Check the connections.
Charger measures no voltage	XT60 connector not connected or fuse blown. Check the connections, the fuse and the batteries.
One battery differs significantly in voltage	The battery may be worn or damaged – check it separately.
Battery connector is loose or gets warm	Worn battery connector or socket. Stop charging and do not use the faulty part.

3. Safety and maintenance

3.1 Safety instructions

- **Never leave batteries unattended** while charging or discharging.
- **Never set the charging current higher than 1.5 A**, even though the board is protected by a 5 A fuse.
- Always charge with the **Balance** program with the balance connector attached. Without the balance lead the charger cannot monitor the voltage of the individual batteries.
- Only charge batteries of the same type, capacity and brand. Do not charge LiPo and LiHV batteries together.
- Never connect two batteries to one position (BT2.0 and PH2.0 at the same time).
- Do not exceed 4.20 V per cell for LiPo and 4.35 V per cell for LiHV.
- Do not charge swollen, damaged, overheated or obviously over-discharged batteries.
- Charge on a non-flammable surface, ideally in a fireproof LiPo bag, away from flammable objects and out of reach of children and animals.
- If a battery swells, heats up or emits smoke during charging, stop charging immediately and disconnect the charger's power supply. Do not extinguish a burning battery with water – use dry sand or a fire extinguisher suitable for electrical equipment, and leave the area.
- Protect the board from moisture, dust, direct sunlight and conductive objects that could short-circuit the contacts.

3.2 Maintenance and fuse replacement

- Check the leads, connectors and sockets on the board before each use. Do not use the board if the insulation is damaged or the connectors are loose. Pull batteries out by the connector body, not by the lead.
- Replace a blown fuse **only with a fuse of the same type and the same rating (5 A)**. First find and eliminate the cause – most often a short circuit or a damaged battery. Never bypass the fuse.

4. Information for the EU and Czech Market

4.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorama.cz
Phone	+420 252 252 098
Website	www.rotorama.com

4.2 Disposal of electrical equipment



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste**.
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu.

5. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 4.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.