

Generator Regulator GR4b with OVP

1. Device Name: GR4b+OVP

2. Purpose and Description:

The GR6b+O is a compact AC bridge rectifier / regulator with a charge control output for connecting an LED indicator light. It is specifically designed for use with Rotax, Hirth, and Solo engines equipped with a lead-acid or LiFePO4 starter battery.

It is distinguished by the fact that the control thyristors are switched near the zero-crossing of the voltage, thereby minimizing voltage spikes in the electrical system. It also includes an overvoltage protection (OVP) circuit that shuts down the regulator when the battery voltage exceeds 15V.

It is largely identical in construction to the GR6b regulator, but features a different heat sink and an M5 thread for mounting.

Important Safety Instructions:

Before installation, check that the charging voltage and overvoltage cut-off voltage are compatible with the battery being used and verify that the battery is suitable for the maximum generator charging current!

Unsuitable batteries may overheat and/or be damaged.

Especially when used with LiFePO4 batteries, approval from the UL manufacturer is required.

3. Technical Data

dimensions (LxWxH):	88x75x35	[mm]
mounting hole spacing with M5 thread	60	[mm]
mass:	0,31	[kg]
preset charging voltage:	14,2	[V]
charging voltage range:	ca. 13,7..14,8	[V]
preset overvoltage cut-off:	15	[V]
self consumption (without LED):	ca. 0,5	[mA]
discharge current via yellow OVP line:	ca. 0,1	[mA]
minimum operating voltage:	ca. 10	[V]
output current for the charge indicator LED:	20	[mA]
maximum generator output:	ca. 250	[W]
minimum operating temperature:	-20	[°C]
maximum operating temperature:	+70	[°C]
dry environment		

4. Features:

When turning on the main switch, the charge indicator light comes on first. It goes out as soon as the alternator starts supplying power. The regulator is designed so that the set charging voltage corresponds to the voltage across the thin red wire. Check to see if this voltage matches the actual battery voltage!

If the battery voltage (yellow cable) rises above 15V, charging is interrupted. In this case, the LED lights up.

When the voltage drops below approximately 14V, charging resumes automatically.

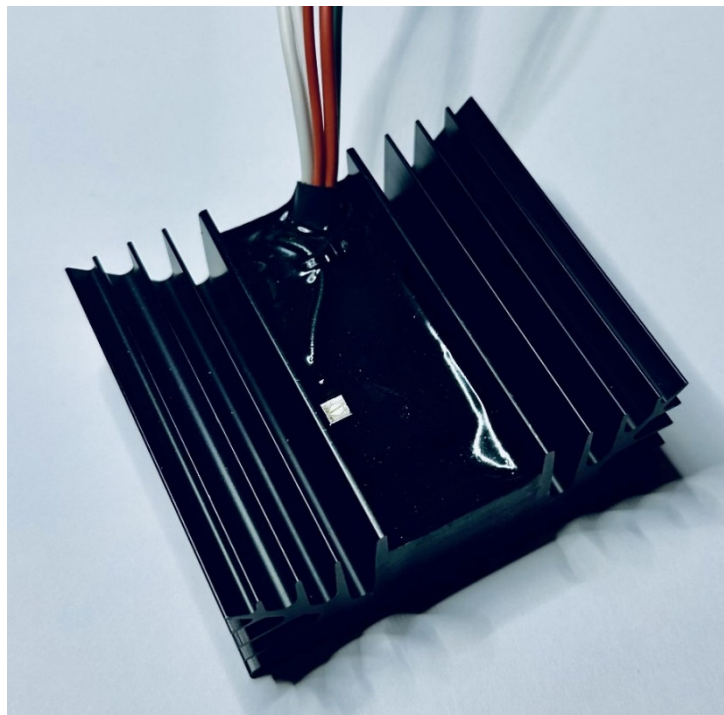
A small potentiometer located in the center of the top of the housing allows the charge cutoff voltage to be adjusted, if necessary, to match the battery system in use.

The overvoltage cutoff is fixed at 15V. On older GR4 models, there is a second potentiometer on the edge of the top of the housing that can be used to adjust the overvoltage cutoff. Do not change this threshold.

5. Installation:

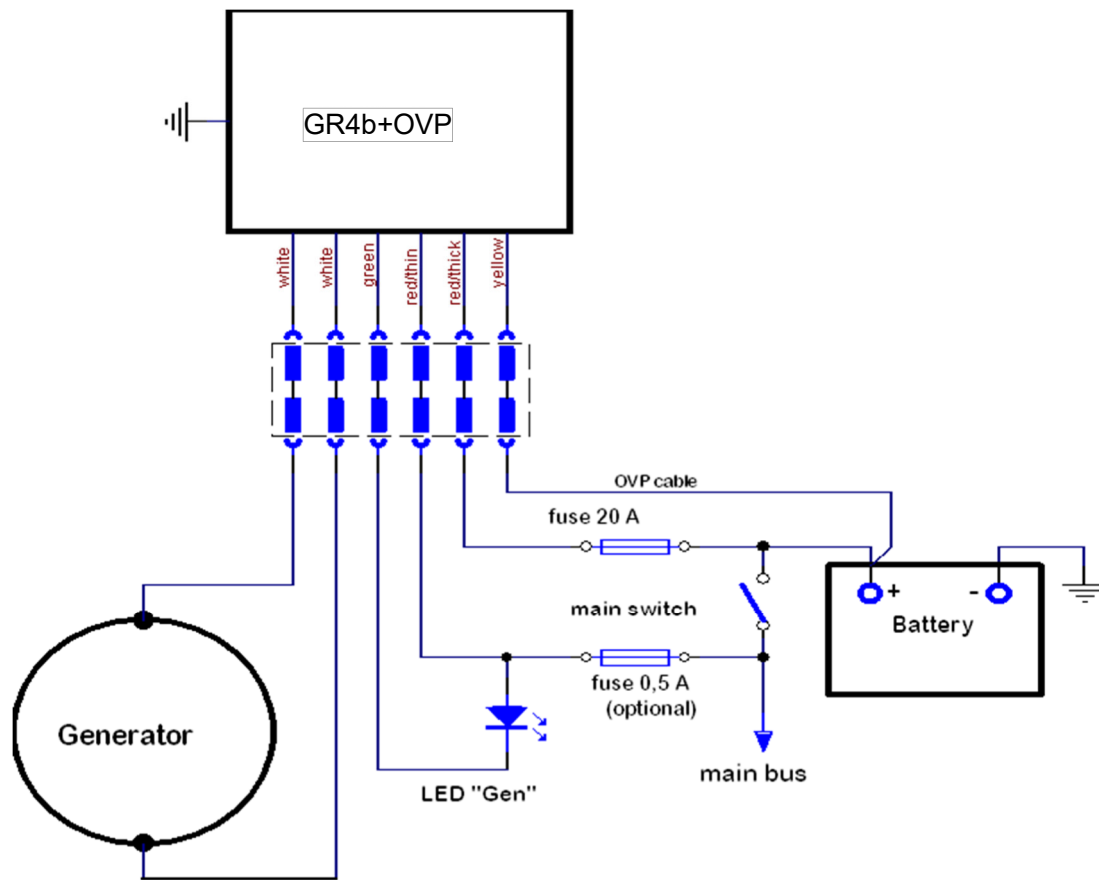
The regulator is secured with two M5 screws so that the cooling fins are as vertical as possible to achieve optimal cooling. The installation location should be chosen so that the regulator is not subjected to additional heat from nearby heat sources.

The alternator, battery, and charging monitor are connected via a 6-pin TE connector. The mating connector has part number TE 280314, and the inserts have part number TE 42238-2. The ground connection is made via the heat sink. Ensure good contact between the regulator housing and the negative terminal of the battery! It is recommended to use a toothed washer between the screw head and the heat sink.



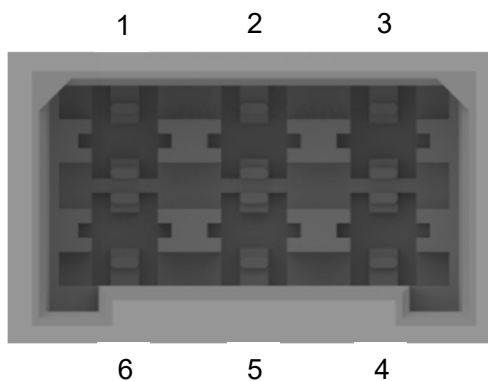
Pic.1: GR4 with OVP

6. Wiring Diagram:



Pic. 2: wiring diagram

7. Pin Assignment:



- Pin 1: Output / to Battery (red thick)
- Pin 2: Ground Gen. light (green)
- Pin 3: Generator (white)
- Pin 4: Generator (white)
- Pin 5: OVP / to Bat.+ (yellow)
- Pin 6: Regulator supply (red thin)

Pic. 3: connector TE180906