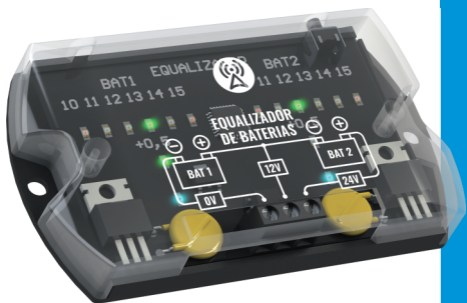


# BATTERY BANK EQUALIZER

USER MANUAL



**JFA**  
ELETRONICOS

## PRESENTATION

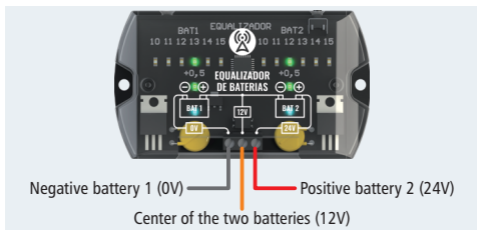
JFA Electronic BATTERY BANK EQUALIZER is designed to control the voltage of each battery during the charging process. In this way, all batteries are charged with the same voltage, which increases the life of the batteries.

In the use of battery banks with serial connection, due to differences in the composition/chemical degradation of each battery, the voltage will be different during the charging and unloading process and, as the charging and unloading process is repeated, this difference is accentuated.

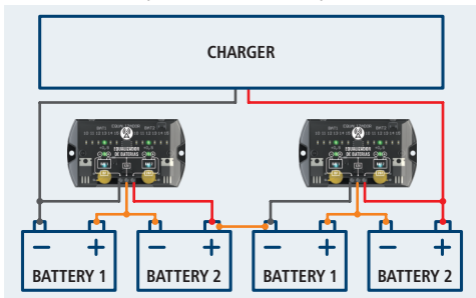
## CONNECTIONS

The **BATTERY BANK EQUALIZER** can be installed in battery banks with as many serial connections as needed, using one equalizer every two 12V batteries.

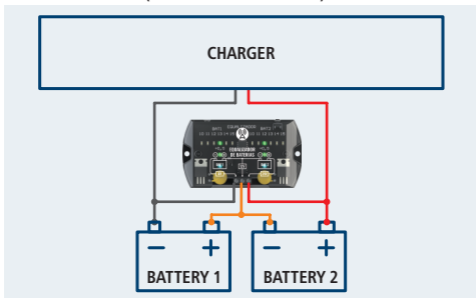
For operation, it must be used in conjunction with a battery charger (SOURCE NOBREAK RECTIFIER JFA).



## Connection for 48V (4 12V batteries in series)



## Connection for 24V (2 12V batteries in series)



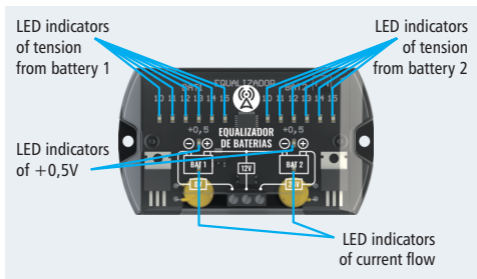
## OPERATION

### LED DISPLAY

The **BATTERY BANK EQUALIZER** has a LED display that indicates the voltage of each battery between 10V and 15.5V. To turn off the display, simply press SW1 (the Current Flow indicator LEDs continue to work with the display off).

Example of voltage reading:

- If the LEDs 13 and the LED +0.5 are connected, it is indicated that the battery voltage is 13.5V (between 13.25V and 13.75V).
- If only LED 13 is on, it is indicated that the battery voltage is 13V (between 12.75V and 13.25V).
- If the 10V indicator LED is flashing, it is indicated that the battery voltage is less than 10V.
- If the 15V LED is flashing, it is indicated that the battery voltage is greater than 15.5V.



## LEDS CURRENT FLOW INDICATORS

The Current Flow indicator LEDs (blue) indicate the flow of the equalization current.

### Example:

- When the EQ1 LED gradually goes out, the EQ2 LED gradually lights up, gradually indicating that battery 1 is at higher voltage and the charge current is being diverted to battery 2.
- When the EQ2 LED gradually goes out, the EQ1 LED gradually lights up, gradually indicating that battery 2 is at higher voltage and the charge current is being diverted to battery 1.
- When the EQ1 and EQ2 LEDs light up together, they gradually indicate that the voltage difference between batteries 1 and 2 is less than or equal to 0.2V (completed equalization process).

## EQUALIZATION PROCESS

The **BATTERY BANK EQUALIZER** uses a microcontroller to monitor the voltage imbalance of the battery set, being responsible for managing the battery equalization process.

It is capable of transferring up to 850mAh of charge between batteries. When the batteries meet the equalized voltages (difference less than or equal to 0.2V) the equalization process is finished automatically, remaining only the monitoring of voltages.

Thus, the **BATTERY BANK EQUALIZER** can remain connected uninterruptedly to the battery bank, always acting when necessary.

**IMPORTANT:** If the batteries are very unbalanced, it is normal for the equalizer to heat up. Your temperature will return to normal as the batteries equalize.

## TECHNICAL SPECIFICATIONS

Operating voltage	7V a 32V (2x16V)
Voltmeter accuracy	0,5V
Low voltage protection	<7V
Equalization current	850mAh (máx.)
Parallel connection of multiple modules	Sim
Dimensions w x h x d (mm)	100x57x17
Weight kg	0,060



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