



MVario2

*ERES limiter
SW for competition flying*

EN

User Manual

Mvario2 - ERES limiter

① Description and function

ERES limiter is a special type of MVARIO2 firmware designed for the competition category of electrically powered gliders (ERES). Measurements and height calculations are the same as the specifications of F5J category. Settings and telemetry are strictly limited according to the needs of the ERES competition. This special firmware can be uploaded via JETI Studio to the MVARIO2 sensor by a USB adapter. The **ESC-In** port is the input port for connecting the throttle channel from the receiver. The **ESC-Out** port is the output port for connecting the controller.

Telemetry data of the sensor:

- Set switch-off height
- Set switch-off time
- Firmware version

Sensor settings:

- Motor shutdown pulse (default 1.1ms)
- Switch-off height setting (90m by default)
- Switch-off time setting (30s by default)

Data displayed by the sensor:

- Current sensor status (Initialization, Idle, Ready, Running, Measuring, Done)
- Maximum measured relative height
- 10 relative height values

The **sensor can only be configured** if the ECS-in throttle channel (pulse) is not connected after connecting the power supply to the sensor. Once a pulse is connected to the ESC-in, the sensor can no longer be set until its power supply is reset. Settings can be made by the Jetibox or DC/DS transmitter (in the "device explorer" menu).

The measured **data can be seen** if the sensor is in the "Idle" or "Done" status. The sensor save the data from the last measurement and can be read again after connecting the power supply. **In the Idle status, you can view the data from the last measurement.** Measurement data means the maximum relative height reached during motor run and 10s after that and 10 relative altitude values saved after 1s of motor run.

The sensor can be in the **Ready** status if a throttle control pulse is connected to the ESC-in input and the pulse value is less than the set level for motor shutdown (default setting 1.1 ms).

The Sensor will be in the **Running** status if the throttle control pulse exceeds the motor shutdown pulse level. After stopping the motor the sensor goes from the **Running** status to the **Measuring** status and the sensor evaluates the measurement for another 10s.

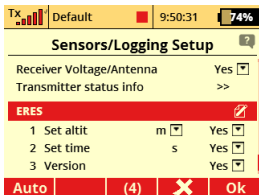
The motor is shutdown if:

- Set height is reached
- Set time is reached
- The throttle lever has been pulled below the set level

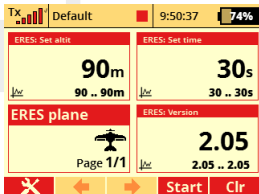
The motor will be stopped, whichever occurs first (terms above). After stopping the motor, the motor cannot be restarted until the sensor power is disconnected and connected again and the sensor returns to the Ready status.

To calculate the height is used the sea level pressure
1013,25 hPa - ISA (International Standard Atmosphere)

② Settings by the DC/DS transmitter:

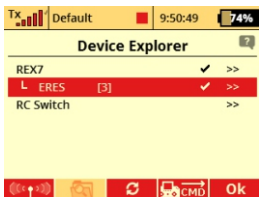


To display the telemetry parameters correctly, it is necessary to reload/reset the sensor telemetry. **In the menu *Timers / Sensors - > Sensors/Logging setup*, select Auto (F1).**



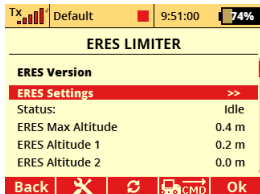
Display of telemetry data:

- Set height for motor shutdown
- Set time for motor shutdown
- ERES Firmware version

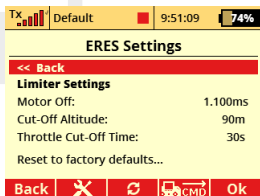


Sensor display in the menu "device explorer"

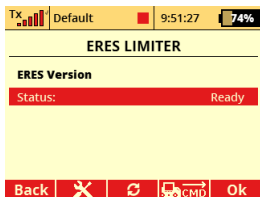
To display the ERES limiter in "device explorer", it is necessary to have the configuration file ERES.bin in the Devices folder in the transmitter. The sensor have to be connected to the EXT output of the receiver and the output have to be set as **EXBUS**.



Display of ten measured relative heights.



Main settings.



Sensor display in status "Ready"

3 Settings by the JETIBOX

The DC/DS transmitter in the "**device explorer**" menu or **Jetibox** can be used to view 10 measured heights (measured after 1s). After connecting the power supply (**for 3 seconds**) the initialization screen with information about the ERES firmware version marked "E" as ERES will be displayed on the Jetibox. This time of **3s** is also needed to initialize the relative height of the sensor. **Data cannot be read or set in the "Jetibox" emulator application in the DC/DS transmitters.**

Jetibox menu diagram:

Use the up and down arrows on the Jetibox to switch between the individual screens. Use the left and right arrows to set up the values.

ERES Idle 93m
1: 90.7 2: 90.8m

ERES
Init v.E2.05

Initialization screen
with SW version

3: 92.7 4: 92.2m
5: 91.7 6: 89.7m

Altitude values are only displayed in the sensor status Idle or Done. If the values of 10 heights are measured as zero, they are not displayed.

7: 86.6 8: 84.9m
9: 85.5 10: 85.2m

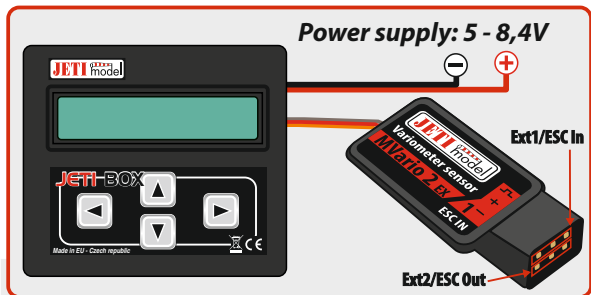
Cut-off Altit.
← 90m →

The setting is only displayed until it is detected throttle deflection pulse on ESC-in.

Cut-off Time
← 30s →

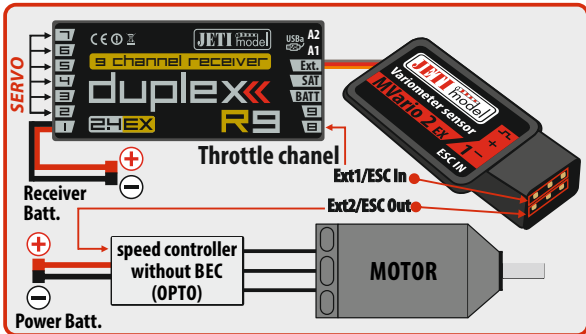
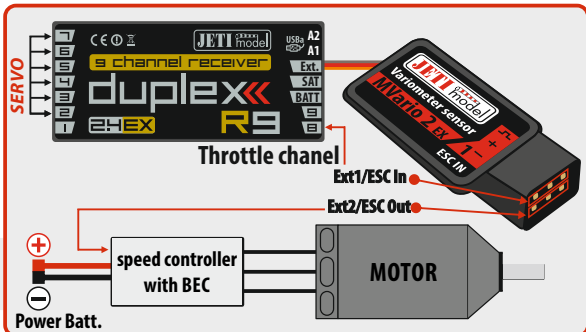
Motor Off
← 1.100sm →

Connection with the JETIBOX:



4 Connection options with controllers:

Possibilities of ERES limiter connection in the **BEC** and **OPTO** controller version.



5 Technical data:

Dimensions	35 x 16 x 7 mm
Weight with the wires	5 g
Measuring accuracy of relative (absolute) altitude	+/-3 m (+/-9 m)
Resolution of measured height	0,1 m
Measurement range	300 ÷ 1200 hPa
Operating temperature	-10 ÷ 85 °C
Supply voltage	3,5 ÷ 8,4 V
Current consumption	15 mA

Follow the principles of installation and handling of the sensor according to the instruction manual for MVARIO2.

6 Warranty:

This product is covered by warranty for 24 months after the day of purchase provided that it has been operated in accordance with these instructions at the specified voltage and is not mechanically damaged. When claiming warranty repairs for the product, always attach a proof of purchase. Warranty and post-warranty service is provided by your dealer or the manufacturer.

We wish you pleasant RC flying with our products:
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