Sensor MRPM-AC EX CE 🗑

The Jeti Duplex MRPM-AC sensor is used to measure the speed of brushless three-phase motors. By connecting this sensor to any two of the three motor wires, the actual rotational speed of the motor can be determined by the sensor. The user must specify the number of poles within the motor, prior to use, in order to obtain accurate readings. This can be done via the Jeti Box.

The unit uses the 2.4GHz band to communicate, not only allowing data to be sent from the transmitter to the receiver, but also allowing the receiver in the model to transmit data back to the user. In this manner, telemetric data obtained during operation is transferred in real-time and the current state of the system can be presented on the LCD screen of the Jeti Box.

Dimensions	19 x 14 x 4 mm
Weight (with cables)	6 g
Precision	10 U / minute
Operating Temperature	-10°C → +85°C
Input voltage	3.5 – 8.4 V
Current draw	10 mA

Parameter settings for the MRPM-AC sensor

All parameter settings and data readouts must be performed through the Jeti Box (available separately). After connecting, the sensor identification and the current RPM and propeller power are shown on the LCD screen of the Jeti Box. By long pushing down button R (right) a fast deletion of all measured parameters can be triggered. Fast deletion is indicated in the first line of the display by an asterix „*".
By pressing the Down button of the Jeti Box, the MRPM-AC menu is displayed.

MRPM-AC MENU: *Actual Value* – Pressing the down button selects between displaying the following actual measured values:
Revolution – The revolutions per minute of the propeller.
Power propeller – The actual power of the propeller in watts.

MRPM-AC MENU: *MIN / MAX* – Navigating the menu of the Jeti Box allows the minimum and maximum extremes of RPM and power output to be viewed. These values are automatically erased from the sensor when the configured trigger level is next exceeded. Alternatively the values can be erased manually using the the *Setting → Erase Data* option.
MIN/MAX RPM – Shows the minimum and maximum RPM of the propeller.
MIN/MAX Power – Shows the minimum and maximum power output of the propeller.

MRPM-AC MENU: *Setting* – Using the 'down' button of the Jeti Box, the following options can be accessed within this menu:
Erase data – By simultaneously pressing the left and right arrow buttons, all measured parameters will be erased.
Beep High Alarm – Set the letter of the Morse code to be represented by the alarm from the transmitter module, when configured RPM or power output limits are exceeded.
Beep Low Alarm – Set the letter of the Morse code to be represented by the alarm from the transmitter module, when configured RPM or power output baselines are not being reached.
n100W – Allows setting of the N-100 value for your propeller. This metric is defined as the speed of the propeller at 100 Watts power and can usually be obtained from your propeller manufacturer. For proper operation of the sensor, this value must be entered appropriately according to your propeller. Common values can be found at www.jetimodel.com
Number of poles – Set the number of poles of your brushless motor.
Trigger level – Sets the threshold RPM at which point maximum/minimum values should be recorded by the sensor. If this value is set to zero, then recording will begin immediately upon connection of the sensor to a power supply and any previously recorded values will be erased.
Time delay – Set a time delay between threshold values at which point recording is set to begin and the actual beginning of recording.
Gear ratio – Set the gear ratio of your power system. NB: This is important because if you use a gearbox the RPM at the shaft will of course not be the same as the RPM of the motor.

MRPM-AC MENU: *ALARMS* – Using the down button, it is possible here to change settings for individual alarms. If an individual parameter is overshot this will be displayed on the second line of the main screen and the alarm will be triggered. The first tone of the alarm is generic and the second tone represents the configured letter of the Morse code for the corresponding alarm. If the alarm is set to *off,* the alarm is disabled.

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Revolution High Alarm – Setting of the signal for the alarm to be sounded when the configured RPM threshold is exceeded.
Revolution Low Alarm – Setting of the signal for the alarm to be sounded when the RPM falls below the minimum threshold.
MRPM-AC MENU: *SERVICE* – by pressing button D (arrow down) you will change to depiction of the firmware version and to renewal of the sensor default setting.
Factory Defaults – by simultaneous pressing of arrows R and L (right and left) the factory settings of the MRPM-AC are loaded.
MRPM-AC v. xx.xx ID xxxxx:xxxxx – product marking with firmware version and series number (ID).

Measurement Phases
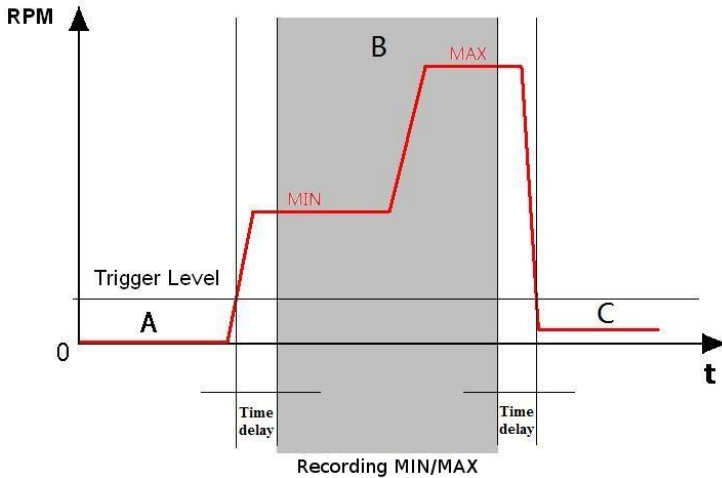
A – The currently measured speed value has not exceeded the minimum threshold. The measured values of Min/Max Power/RPM correspond to the previous session.
B – The currrently measured speed value has exceeded the minimum threshold value for a time greater than the configured time delay. The previously measured values for Min/Max Power/RPM will be erased and replaced with the current measurements.
C – The currently measured speed value has remained below the minimum threshold for a time longer than the configured time delay. No measurements are recorded.

Connection of MRPM-AC sensor to brushless motor
The sensor is connected by the two wires to any two of the three motor wires.
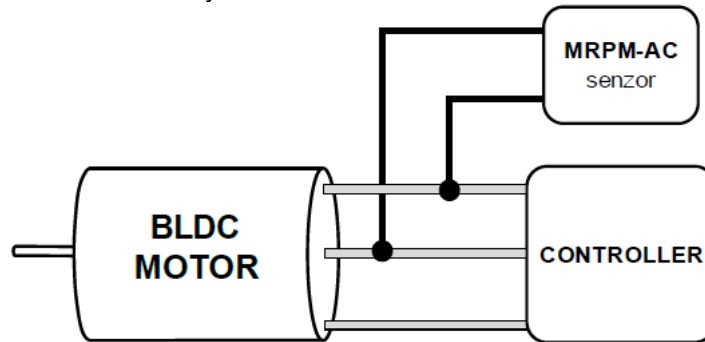
Connection options for the MRPM-AC Sensor
1. The three-wire cable with JR connector may be connected directly to the Jeti Box using the Pulse/+/- socket. A power source of 3.5-8.4V must be supplied via the Jeti Box using the +/- socket to power the module. In this configuration the RPM sensor can operate as a stand-alone mobile unit, providing measurements on the screen of the Jeti Box. No alarm signals are generated with this configuration, because these are provided by the transmitter module, which is not connected. Alerts are displayed only on the LCD screen.

2. Connect the three-wire cable with JR connector directly to the Ext. socket on the Duplex receiver. In this configuration the sensor is powered via the receiver. Switching on the transmitter and receiver allows the sensor to be configured appropriately for your power system and alarm settings to be defined.
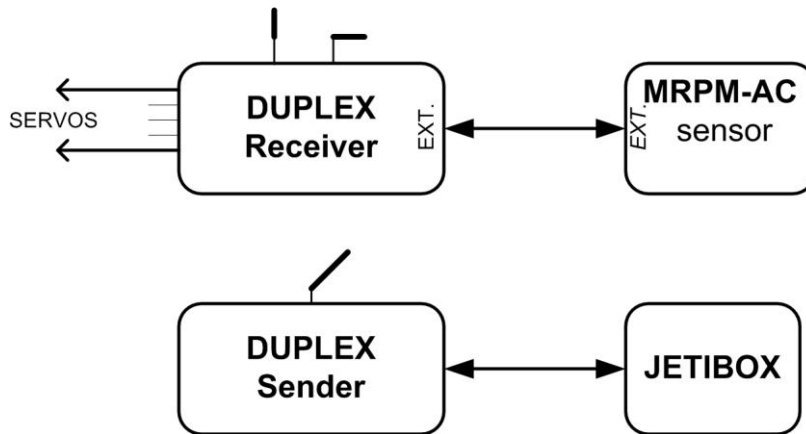
3. Connect the three-wire cable with JR connector to the Jeti Duplex Expander module and ensure that the Expander module is connected to the Duplex receiver. In this configuration the MRPM-AC sensor is powered through th e expander, which is powered through the receiver. Switching on the transmitter and receiver allows the sensor to be configured appropriately for your power system and alarm settings to be defined.
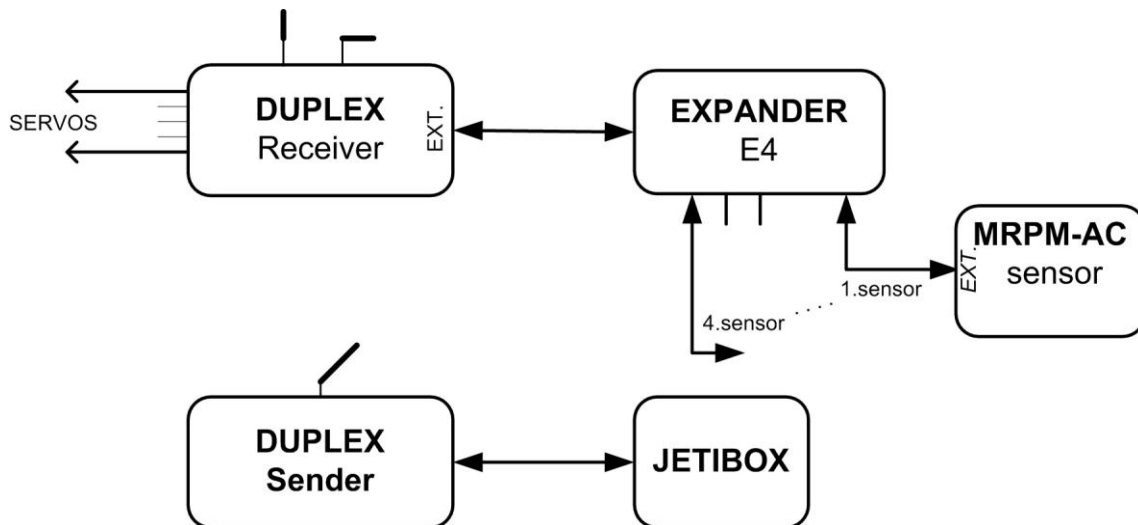
Firmware Update
The equipment firmware may be updated by a PC via the **converter unit JETI USB Adapter**. In the USB Adapter instructions you will find a description of the installation procedure of the USB Adapter controller as well as the update program.

Guarantee
This product is guaranteed for a period of 24 months from the date of sale under the provision that there is no physical damage and that the unit has been used in accordance with the operating instructions. Customer service during the warranty period and therafter is carried out by the manufacturer.

We wish you a pleasant flight: Jeti Model S.R.O Pribor, www.jetimodel.cz

Menu navigation via the Jeti Box for MRPM-AC Sensor

SENSOR MRPM-AC 6000RPM 100W

MRPM-AC MENU ACTUAL VAL ↓
- Revolution 6000 RPM → Actual revolution
- Power propeller 100 W → Actual power propeller

↑ *MRPM-AC MENU* ↓ MIN/MAX
- MIN/MAX RPM 10000/20000 → Maximal revolution / Minimal revolution
- MIN/MAX Power 500/1000 → Maximal power / Minimal power

↑ *MRPM-AC MENU* SETTING ↓
- Erase data Press ↑→ → Manual erase data
- Beep High Alarm < H > → A - Y letters step 1 letter
- Beep Low Alarm < L > → A - Y letters step 1 letter
- n100W < 6800 > → 1 - 65000W step 1W
- Number of poles < 2 > → 2 - 30 poles step 1 pole
- Trigger level < 5000 RPM > → 0 - 30000 RPM step 100 RPM
- Time delay < 2s > → 0 - 8s step 1s
- Gear ratio < 1.0 : 1 > → 1.0 - 20.0 step 0.1

↑ *MRPM-AC MENU* ALARMS ↓
- Rev. High Alarm < OFF → OFF - 30000RPM step 100 RPM
- Rev. Low Alarm OFF > → OFF - 30000RPM step 100 RPM

↑ *MRPM-AC MENU* SERVICE ↓
- PresetToSetup→ Factory Defaults
- MRPM-AC v. XX.XX ID XXXXX:XXXXX