Esprit Tech
P.O. Box 360815
Melbourne, FL
32936, USA

(1) 321.729.4287
Support**@**EspritTech.com
https://**www**.EspritTech.com

Firmware version 1.00

KILLSWITCH KSW18

INSTRUCTION MANUAL

Overview

The KillSwitch KSW18 is a high-performance digital switch featuring an optically isolated switching circuit. Thanks to its excellent noise immunity and signal separation, it is ideal for use as an independent ignition switch. It can be controlled via an RC channel, mechanical switch, or both. The device offers a range of configurable options for flexibility in various setups.

Features

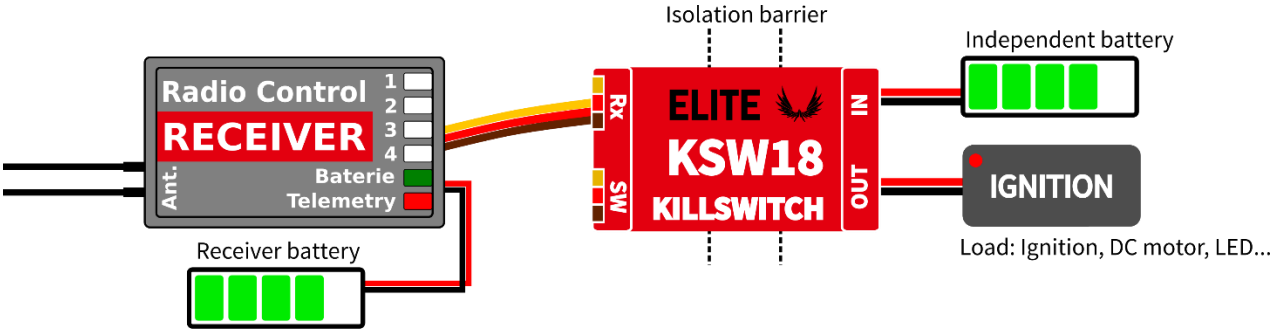
- Optically isolated switching circuit with independent power supply.
- Supports a variety of loads: motors, relays, lights, heaters.
- Compatible with additional magnetic, mechanical, or electronic switches or buttons (optional touch switch support).
- Dual switch inputs for enhanced safety.
- Supports Duplex EX and FrSky telemetry for configuration.
- Configurable via transmitter or MAV Manager PC software.
- Firmware update capability.

	KSW18
Dimensions	50 x 19 x 10 mm
Weight incl. cables	19g
Weight incl. cables and Magnetic / Touch Switch	24g
Cables	1mm² (17AWG)
Connectors	-
Continuous current	18A
Peak current (2s)	30A
Operating current	< 10mA
Operating temperature	-20 – 85°C
Supply Voltage (Rx input)	4 – 16V
Supply Voltage (Isolated switching circuit)	5-26V
Telemetry	Duplex EX, FrSky (configuration only)
Touch switch support	Yes
BEC	No
Selectable touch / mechanical switch/ button	Yes
Status LED	Yes

INSTALLATION

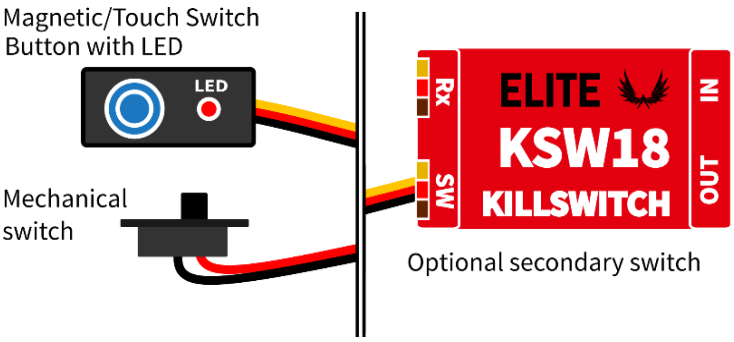
Connect the device as shown in the provided diagram. The switching point and polarity of the RC input signal can be configured in the settings.

Basic Wiring with Dual Battery Setup



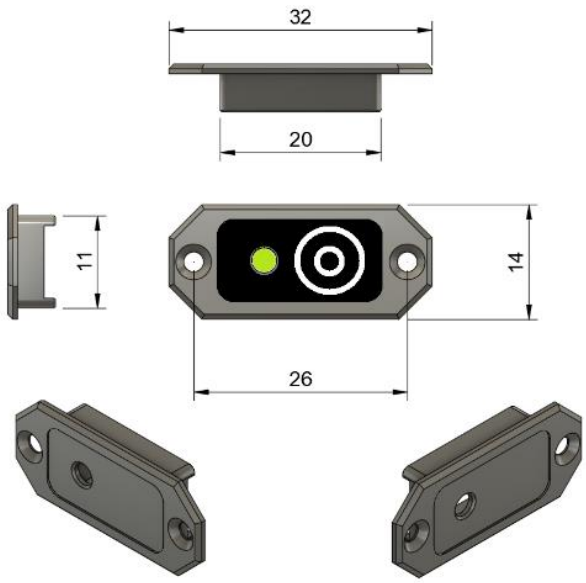
Optional Mechanical/Electronic Switch

The KSW18 allows a combination of two signal inputs to improve operational safety. By default, only the primary input (Rx line) is used. For additional safety (e.g., preventing accidental engine ignition activation), use both primary and secondary inputs.



Note: If using a secondary switch, configure its type and behavior in the settings menu.

TOUCH SWITCH INSTALLATION

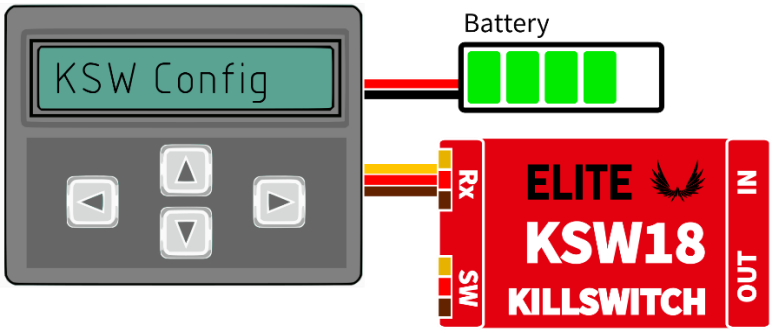


- Place the touch button anywhere on your model on the surface made of nonconductive material.
- Make the status LED visible from outside the fuselage.

Activation Steps

- Connect the receiver battery to the KSW18 and briefly touch the button. Status LED should start blinking. If not, please increase the touch sensitivity parameter in the configuration.
- Touch and hold the button for about 2 seconds. The LED starts blinking. At this moment, release the button. The main output will be activated.

TELEMETRY AND SETTINGS



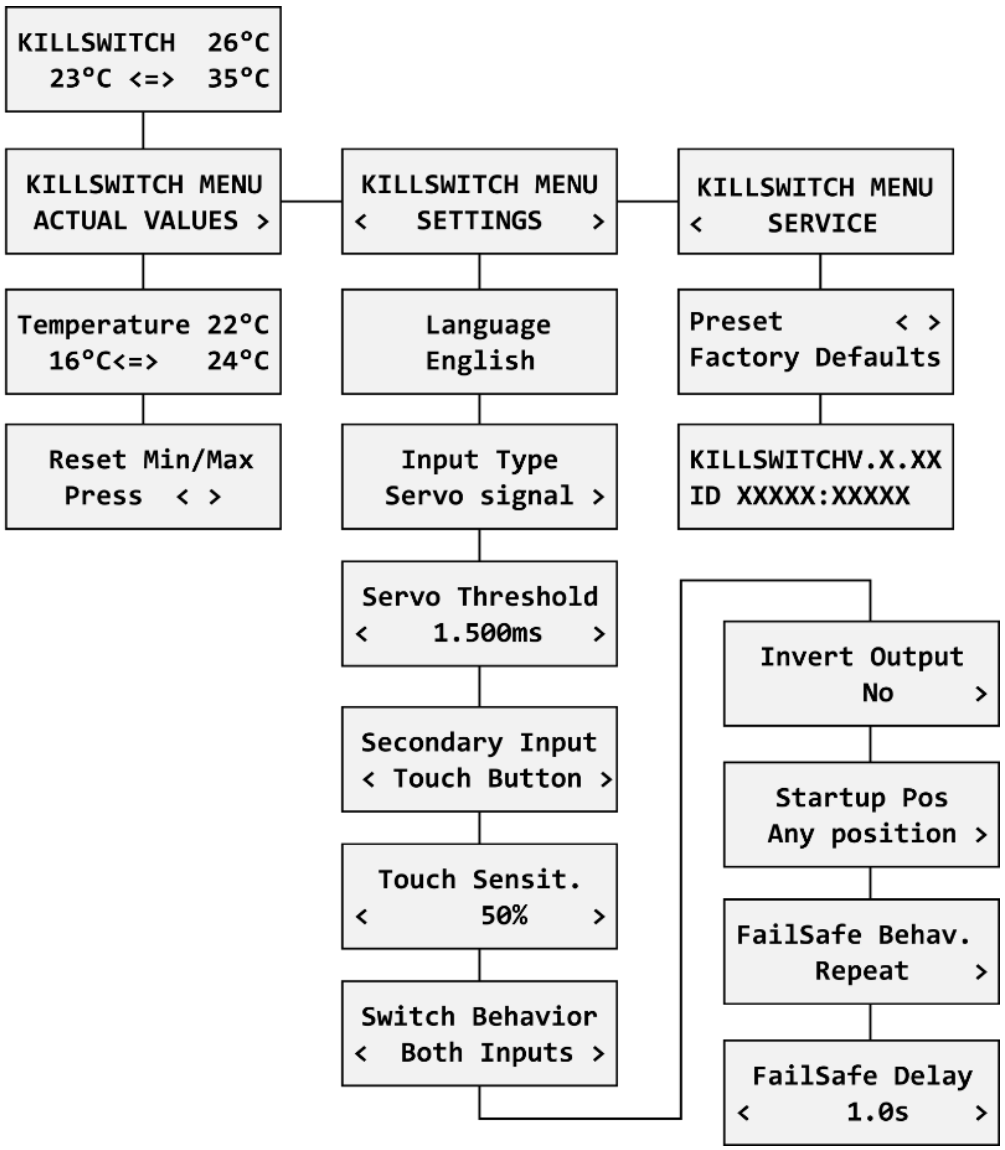
The device is compatible with JETIBOX and you can use it for programming. The JETIBOX menu is divided into three sections:

- **Actual values** – Displays real-time telemetry data, including temperature readings and their respective minimum and maximum values.
    - **Reset Min/Max** - Resets all recorded minimum and maximum telemetry values. To reset, press the left and right buttons simultaneously.
- **Settings** – provides access to core device configuration parameters.
    - **Language** – allows the selection of the display language for the JETIBOX interface.
    - **Input type** – defines the primary input control for the switch:
        - **Servo signal** (default) – Uses a PWM signal from the receiver to control the switch state.
        - **Voltage level** – Uses a logical voltage level on the Rx signal input (2.0V – 5.0V = ON, 0.0 - 0.7V = OFF). Always supply the voltage through the "Rx" cable. A pulldown resistor is automatically enabled on the input.
        - **Serial bus channel** – Uses a specific channel from the serial bus (S.Bus, EX Bus, P2Bus, F.Port, F.Bus) to control the switch. The Rx cable must be connected to the receiver bus output.
    - **Servo threshold** – Sets the servo signal threshold for switching. Values above the threshold (default: 1.5 ms) activate the output; lower values deactivate it.
    - **Serial bus channel** – Allows selection of a specific channel when the Input Type is set to *Serial Bus Channel*.
    - **Secondary input** (None/Mechanical/Hall/Button/Touch). Optional secondary control input type. The secondary input can include an indicator LED.
    - **Touch sensitivity** – Adjusts the sensitivity of the touch sensor. Higher values allow installation behind thicker non-conductive surfaces but may increase the risk of false activation.
    - **Switch behavior** – Determines how the primary and secondary inputs interact:
        - *Only primary input (default)* – The switch is controlled exclusively by the primary input.
        - *Both primary and secondary* – Both inputs must be active to enable the output. If either input is inactive, the switch turns off and the.
        - *Only secondary input* – The switch is controlled solely by the secondary input.
    - **Invert output** – Inverts the logical output state of the switch in response to the control signal.
    - **Required startup position** – Defines the switch's behavior at power-up:
        - *Any position (default)* – The switch reacts immediately to the control signal.
        - *Off position* - The output remains off at startup and becomes responsive only after the input signal goes off.
        - *On position* - The output is active at startup and becomes responsive after the input signal goes on.

- **FailSafe Behavior** – Configures the switch's response to a lost control signal:.
  - Repeat – Maintains the last known state.
  - Turn off – Sets the output to OFF.
  - Turn on – Sets the output to ON.
- **FailSafe Delay** – Specifies the delay time between signal loss and fail-safe activation.

- **Service** – Displays device firmware version and allows resetting to factory default settings.

JETIBOX menu structure

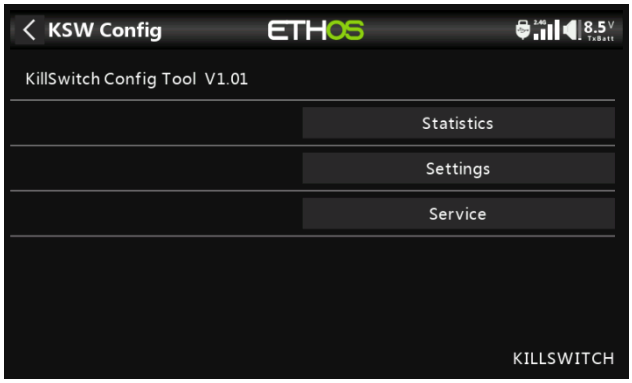


FrSky Integration

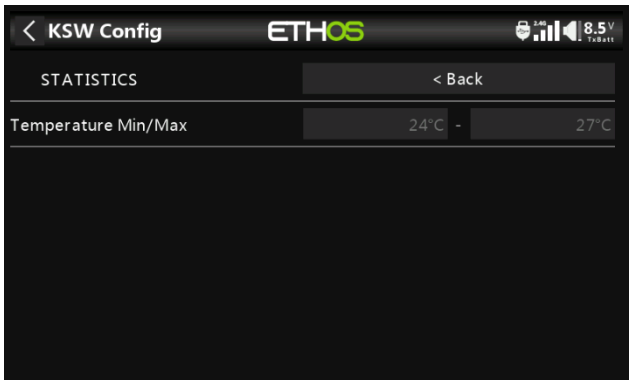
The KSW18 is compatible with FPort and FBus capable receivers, allowing both control, telemetry and configuration capabilities. The switch receives channel information and sends back telemetry data. It can decode all channel data from FBus 8 up to FBus 24, but only the first 16 channels can be used for internal functions, such as switch control.

To configure the KSW18, the Ethos system (minimum version 1.6) is required. You need to download the corresponding Lua application to your transmitter and place it in the "scripts" folder. Launch the application from the second page of the Configuration menu. Note that only one KSW18 should be connected to the telemetry bus at a time to avoid address conflicts.

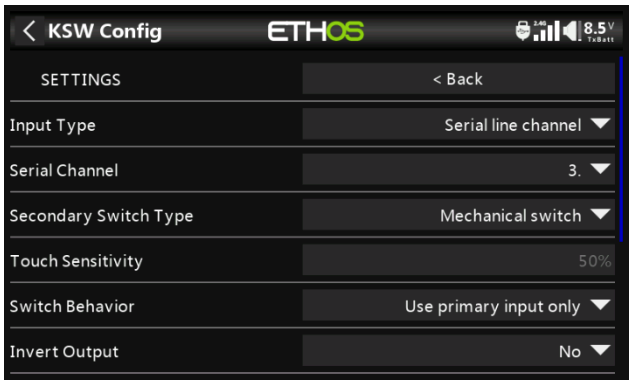
The KillSwitch Config app is available in the Configuration menu.



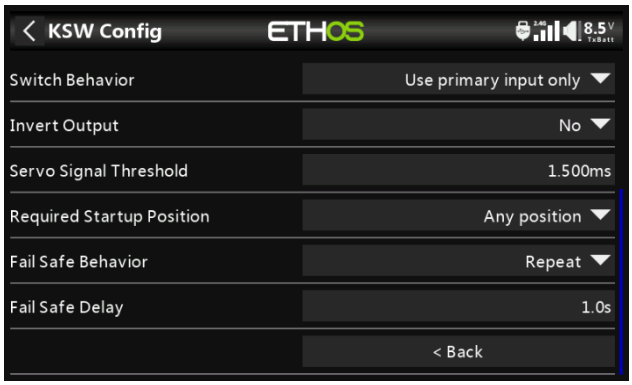
The KillSwitch main menu displays the device status and offers links to all submenus.



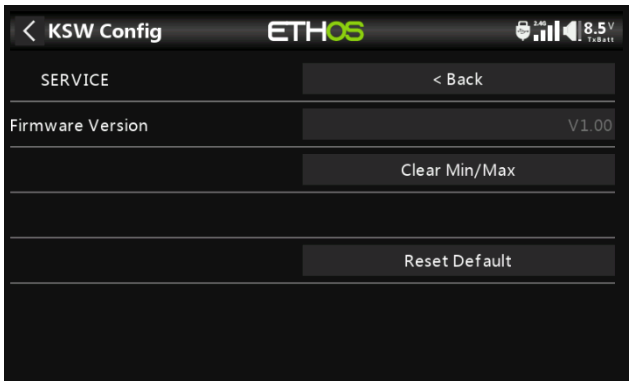
Statistics screen.



Control Settings.



Fail-Safe Settings.



Service menu.

SAFETY INFORMATION

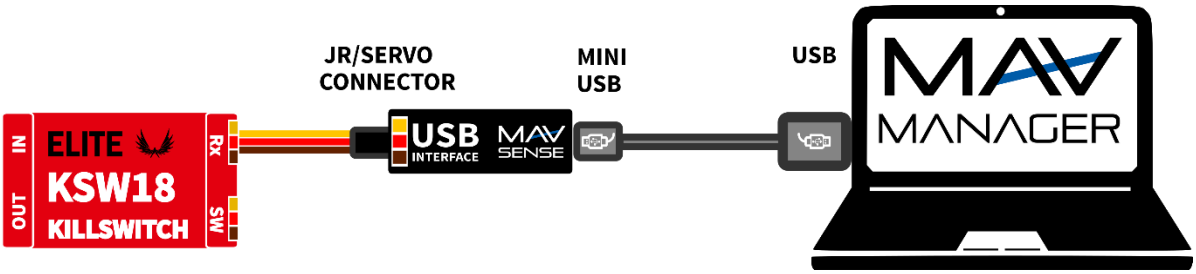
- Operate the KSW18 always in dry environment and within the device limits stated in this guide. Never expose the device to excessive heat or cold.
- Do not remove the plastic cover from the device and do not try to implement any changes or modifications. This can lead to a total destruction and to the denial of any warranty claims.
- Always check the polarity of the cables. Never inverse the polarity – this could lead to total destruction.
- Always use a sufficient power source according to the consumption of the attached load. Never exceed the maximum allowed operating voltage of the attached load.

FIRMWARE UPDATE

Firmware updates for the KSW18 are transferred from a PC via the USB interface. The required programs and files are available at www.esprittech.com

Install the MAV Manager software and the USB drivers on your computer. Check the system requirements.

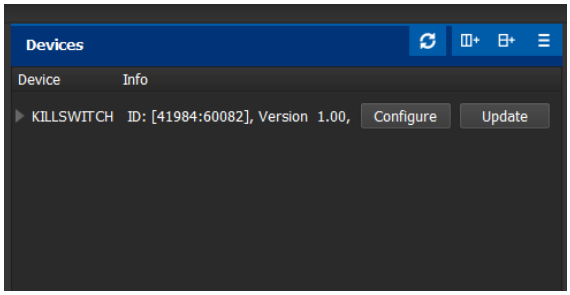
1) Disconnect all devices attached to the KSW18.
2) Connect the USB interface to your PC, run MAV Manager and select the correct COM Port.
3) Connect the KSW18 according to the picture below.
4) Select the appropriate *.BIN file and press the Update button.



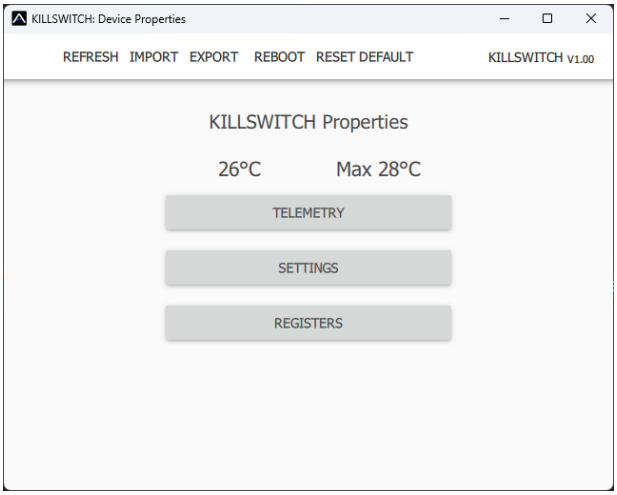
PC CONFIGURATION

It is possible to use the MAV Manager software (1.16.0 and later) to conveniently configure all device settings, display real-time telemetry and make a backup copy of your settings. The configuration menu contains four buttons in the top toolbar:

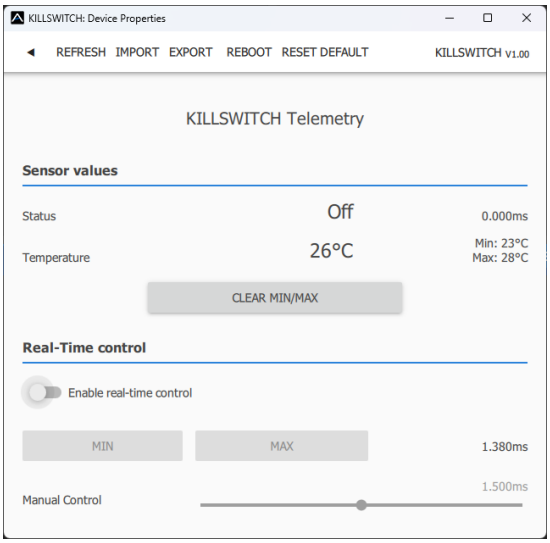
- **Refresh** – forces the configuration to be reloaded from the device.
- **Import** – imports the settings from a file. If you have several devices and want identical settings for all of them, simply import the same settings to each device.
- **Export** – exports the settings from the device to a file. You can easily create a backup configuration stored in your PC. After creating a backup, you may easily experiment with the settings and later revert back to the original configuration by pressing the "Import" button and choosing the original exported file.
- **Reset default** – resets the device to factory defaults and reloads all the settings.



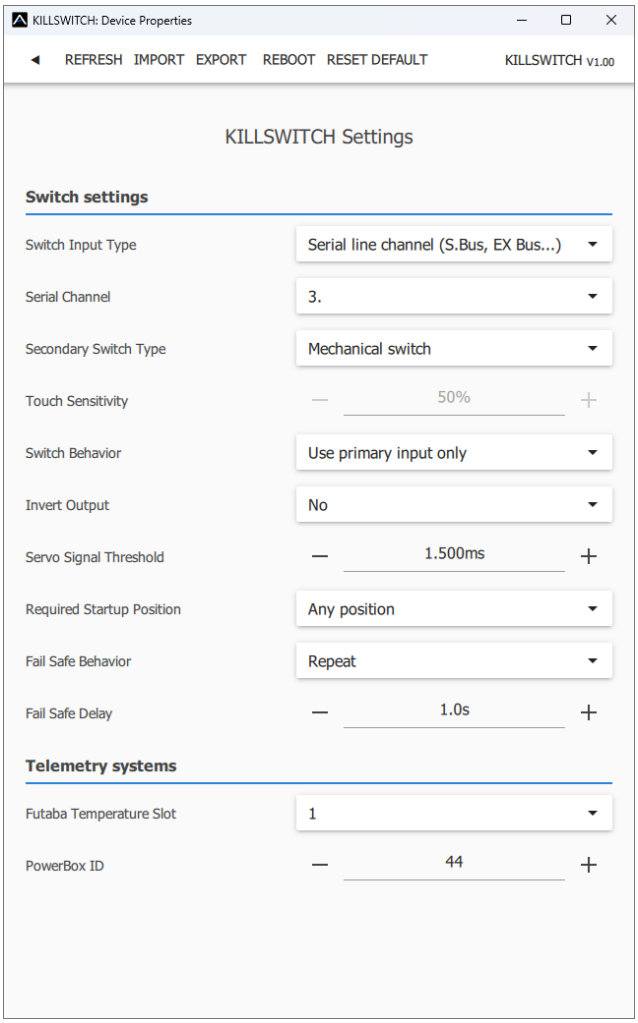
Connect the device to your PC using the USB interface. The ESC will be automatically detected by the MAV Manager.



The device properties are available after pressing the "Configure" button.



Real-time telemetry with temperature min/max values. By enabling the real-time control, you are able to confirm the correct behavior in response to the input signal value. The MAV Manager is also able to create a log file from the real-time telemetry data, which can be viewed, analyzed, imported and exported.



The KillSwitch settings. Every time you make any change in the configuration, the new value is immediately transferred to the device and saved to memory. There is no need for additional confirmation.

WARRANTY

We grant a warranty of 24 months from the day of purchase under the assumption that they have been operated in conformity with these instructions at recommended voltages and that they were not damaged mechanically. Warranty and post warranty service is provided by the manufacturer.