Cod. 90030207M

ESC Switch 12A peak MGN

Electronic switch NOT STABILIZED

USAGE MANUAL V1.2

ALEWINGS® *di Alessandro Torri*
v. del Lavoro, 41 20084 Lacchiarella MI ITALY
www.alewings.it info@alewings.it

Dear Customer,

Thank you for purchasing **ESC Switch 12A peak MGN**.
This device is an electronic switch for one or two batteries that joins together 3 different functions:

- **Double electronic switch** managed by a microcontroller with magnetic on/off
- **Charge checker** for the two batteries

It is at its best when used as switch for one or two batteries for the supply of the receiver and the servos, but it can be used also for a safe power supply of gas engine electronic ignitions.

WARNING

- When you connect even only one battery the device turns on

- Before connecting any other device to the ESC, make sure that the voltage of the batteries is lower than the maximum voltage accepted by the device you want to supply.

- Don't connect batteries with inversed polarity ; inversion of polarity damages the ESC

- Don't connect outputs of the ESC to the device to be supplied with inverted polarity ; inversion of polarity may damage both devices.

- Don't cause short circuits on the outputs of the ESC ; short circuits damage the device.

- Pay attention to polarity of extension leads, both on the side of the batteries (power supply input) and on the side of receiver/servos (output). It is recommended to use extension leads and adaptors Alewings.

If you won't be using the ESC for more than one week, disconnect batteries.

CONNECTIONS

FIXING: Mount your ESC on the receiver plate or on the side of your fuselage: create a rectangular hole of 53x23,5 mm. Place the ESC and use the two holes to fix it with the two self-threading screws provided. It is always suggested to realize an installation which assures the insulation of the device from engine vibrations.

CONNECTION ESC-BATTERIES: connect battery or batteries to input UNI connectors as shown in figure 1.

ATTENTION: the device turns on. (For turning it off keep the magnetic key close to the circle on the device for at least 2 seconds)

If your batteries have a different connector, these adaptors are available:
Deans M - UNI code 90050357
MPX M - UNI code 90050358
Xt60 M - UNI code 90050359

CONNECTION ESC- DEVICE TO BE SUPPLIED: **ATTENTION: before connecting any other device to the ESC, make sure that the voltage of the batteries is lower than the maximum voltage accepted by the device you want to supply.**

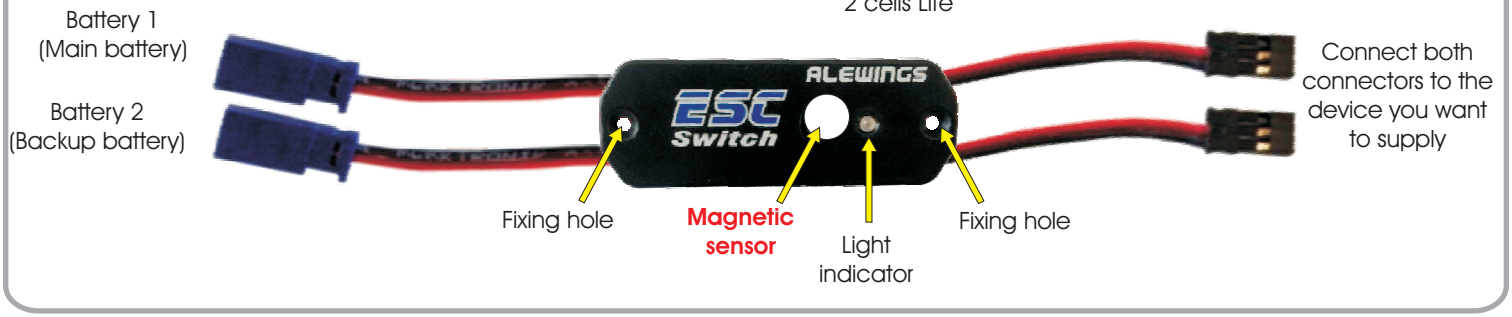
Connect the two output wires with UNI connector to the device you want to supply (receiver or engine electronic ignition).

Output is only one: the two wires have the aim of dividing current between two ways (voltage is the same on both wires).

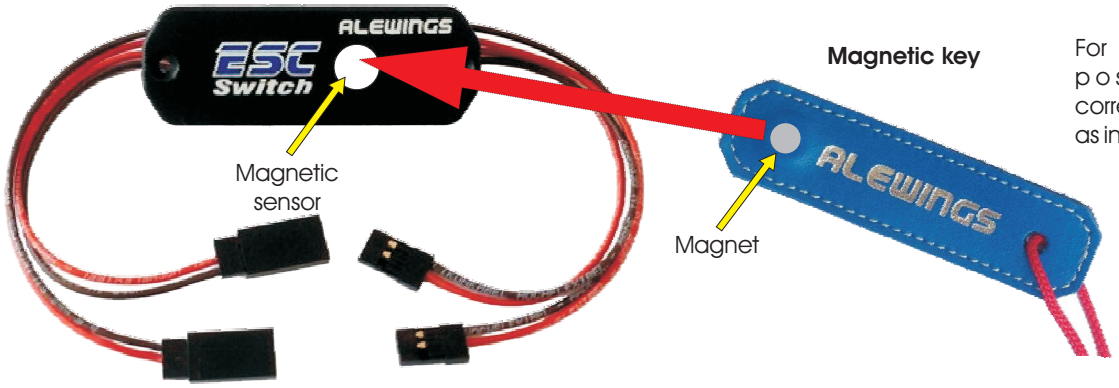
PICTURE 1

ATTENTION: output voltage is not stabilized

ATTENTION: ALLOWED BATTERIES
5 cells NiCd NiMh
2 cells LiPoli
2 cells Life



PICTURE 2



For turning the ESC on and off position the magnet in correspondance of the white circle as indicated by the red arrow.

BATTERY LIGHT INDICATOR

The light indicator carries out a double function:
- Indication of the working modality
- Monitor of batteries status

When turning the device on, a sequence of flashes indicates the "Working modality" and the "Battery type" selected.
The sequence consists of:
"N" slow flashes indicating the working modality followed by
"N" series of three rapid flashes indicating the battery type selected

Flashes indicating the "Working modality"
1 slow flash = Single battery
2 slow flashes = Double battery
3 slow flashes = Main battery and backup battery

Flashes indicating the "Type of battery"
1 series of 3 rapid flashes = 5S Nixx
2 series of 3 rapid flashes = 2S LiPo
4 series of 3 rapid flashes = 2S LiFe

Example: if when turning the ESC on the indicator emets 2 slow flashes followed by 2 series of 3 rapid flashes, it means that you are in Double battery modality for 2 cells LiPo batteries.

At the end of the series of flashes indicating working modality and type of batteries, the indicator starts flashing according to the charge status of the batteries.

At this point, if you are in "Double battery" or "Main battery with backup" modality, the device checks the status of battery number 2.
If battery 2 is not connected or if it is discharged, the system goes anyway in state of alarm for anomaly at battery 2, independently from the status of battery 1.

The alarm status for anomaly at battery 2 corresponds to the sequence **2sec light on + 0,2sec light off**

For resetting the alarm, check connection and charge of battery 2 and turn the ESC off and on again.
If check of battery 2 is ok, a series of flashes at different frequences (see table below) indicates batteries status.
More flashes are rapid and less the batteries are charged.

ATTENTION: the indicated charge value of the batteries isn't the instantaneous voltage but it is the minimum registered voltage from the last switching on. The system keeps memory of the lowest registered voltage, measured during the real work of the device under load and you can see it at the end of your session.

Depending on the type of batteries selected, flashes scheme is the following:

Batteries 5S NiCd NiMh 6V
- >6,3V 1 flash every 3,5sec
- >6,1V 1 flash every 1 sec
- >6,0V 1 flash every 0,3sec
- <6,0V light steady on

Batteries 2S LiPoli 7,4V
- >7,5V 1 flash every 3,5sec
- >7,2V 1 flash every 1 sec
- >7,0V 1flash every 0,3sec
- <7,0V light steady on

Batteries 2S LiFe 6,6V 2S
- >6,4V 1 flash every 3,5sec
- >5,9V 1 flash every 1 sec
- >5,7V 1 flash every 0,3sec
- <5,7V light steady on

ATTENTION: light fixed on means batteries fully discharged

DEFAULT SETTING

The ESC comes wit the following factory setting :

Operating modality:
DOUBLE BATTERY

Type of batteries:
2s LiPoli

USAGE

Before using the ESC check and if necessary set the following parameters:

- Working modality
- Battery type
- That the voltage of the batteries is lowerr than the maximum voltage accepted by the device to be supplied

After carrying out connections as indicated into the corresponding paragraoph , the device is ready to use.

Every time you connect one or both batteries, the ESC automatically turns on and enters alarm status (light fixed on).

Note: the device detects any interruption of power supply; this is the reason why when turned on it enters automatically the alarm status (as if an interruption of power supply occured) and so with light steady on. It is necessary, after connecting both batteries, to turn the ESC off and on again for resetting the alarm.

For turning the ESC on and off, position the magnetic key near the sensor (white circle) and keep it there for at least two seconds.

PROGRAMMING

ESC can manage batteries according to 3 different working modalities:

- **Single battery:** connect only one battery to the Battery 1 connector .
- **Double battery:** the two batteries will discharge simultaneously without influencing each other. They must be of the same type (both LiPo or both LiFe ecc..) and have the same nominal voltage. They can have different capacity but it is recommended not to exceed a difference of 30%.
- **Single battery with a backup battery:** connect t he main battery to Battery 1 connector and the backup battery to the Battery 2 connector; the second battery will start working when the main one is discharged or disconnected. They must be of the same type (both LiPo or both LiFe ecc..) and have the same nominal voltage. They can have different capacity, usually the backup battery has a lower capacity than the main one.

<u>"OPERATING MODE" and "BATTERY TYPE" programming:</u>

With ESC turned off, (no battery connected), connect a charged battery to one of the two connectors, keeping the magnetic key near the sensor (white circle) on the device. The light indicator will light up to confirm that you have entered the programming menu.
Remove the magnetic key and check that the light turns off.

- Operating mode: put the key near the sensor "x" times, depending on the wished mode.
Pay attention not to wait more than two seconds between one approach of the key and another.

1 time: single battery
2 times: double battery
3 times: single battery with backup battery

After 2 seconds since the last approach, the light will flash as many times as you have neared the key, so that you can check your selection.

- Battery type: put the key near the sensor "y" times depending on the type of battery you want to select.
Pay attention not to wait more than 2 seconds between one approach of the key and another.

1 time: 5 NiCd-NiMh cells
2 times: 2 LiPoli cells
4 times: 2 LiFe cells

After 2 seconds since the last approach, the light will flash as many times as you have neared the key, so that you can check your selection. .
At the end of this phase, the ESC will automatically switch off. Near the key again for at least two seconds to turn it on.

Afterward every time you turn the ESC on, the LED indicator will emit "x" slow flashes corresponding to the modality selected and "y" sequences of 3 rapid flashes corresponding to the battery type selected.

ATTENTION: always check the "Operating mode" and the "Battery type" selected. The following table will help you to identify the programmed selections when you turn the ESC on:

Flashes indicating the activated "Operating mode"
1 slow flash = single battery mode
2 slow flashes = double battery
3 slow flashes = single battery with backup battery

Flashes indicating the selected "Battery type":
1 sequence of 3 fast flashes = 5 cells Nixx battery
2 sequences of 3 fast flashes = 2 cells LiPoli battery
4 sequences of 3 fast flashes = 2 cells LiFe battery

WARNING

This is not a toy.
Pay close attention to the following points, as the non observance of them can destroy the product, nullify your warranty and lead to property damages or personal severe injuries!
- Never leave the product unattended while it is switched on, in use or connected with a power supply. If a defect occurs, it could set fire to the product or to the surroundings.
- Avoid incorrect connections or connections with reversed polarity.
- All wires and connections have to be well insulated. Short-circuits might destroy the product.
- Never allow this product or other electronic components to come into contact with water, oil, fuels or other conductor liquids, as these could contain minerals, which are harmful for electronic circuits. If this happens, stop the use of your product immediately and let it dry carefully.
- Always wire up all the parts of the equipment carefully. If any of the connections loosens, due to vibrations, you might damage your device.
- Never cut off or modify the original plugs
- Never change the polarity of the receiver connectors
- Do not open the product and never solder on the PCB

SPECIFICATIONS

Dimensions:	52x23x20mm 69x25mm external panel
Weight:	22gr including cables and connectors
Operating voltage:	from 5,0V to 8,4V
Batteries:	5 cells Nixx, 2s Life, 2s LiPoli
Output voltage:	**NOT STABILIZED**
Voltage loss	400mA @ 5A
Maximum load:	12A peak
Current drain:	140uA when switched OFF (About 100mA on 30 days) 15mA when switched ON
Working temperature:	-10 up to +60 °C

These specifications may be changed without advance notice.

WASTE DISPOSAL

At the end of its life cycle this product is subject to special waste disposal and it cannot be disposed with urban waste