Cod. 90010603

UniServo7Adjust
Control unit for servos

USAGE MANUAL V1.1

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Dear Customer,

thank you for your choising an Alewings product.

UniServo control units have been designed together with power supply untis UniPower in order to create **a new power system developed by ALEWINGS.**

It completely changes the usual managing of batteries and servos, improving safety and reducing weight.

UniServo has been conceived for managing exclusively power supplying of receiver and programming of servos; power circuits are not present in UniServo and are part of UniPower boxes solely: so power circuits are detached from digital ones.

UniServo is an unit for managing and programming servos especially developed for using with power units UniPower2B and 3B (items 90010601 e 90010602).

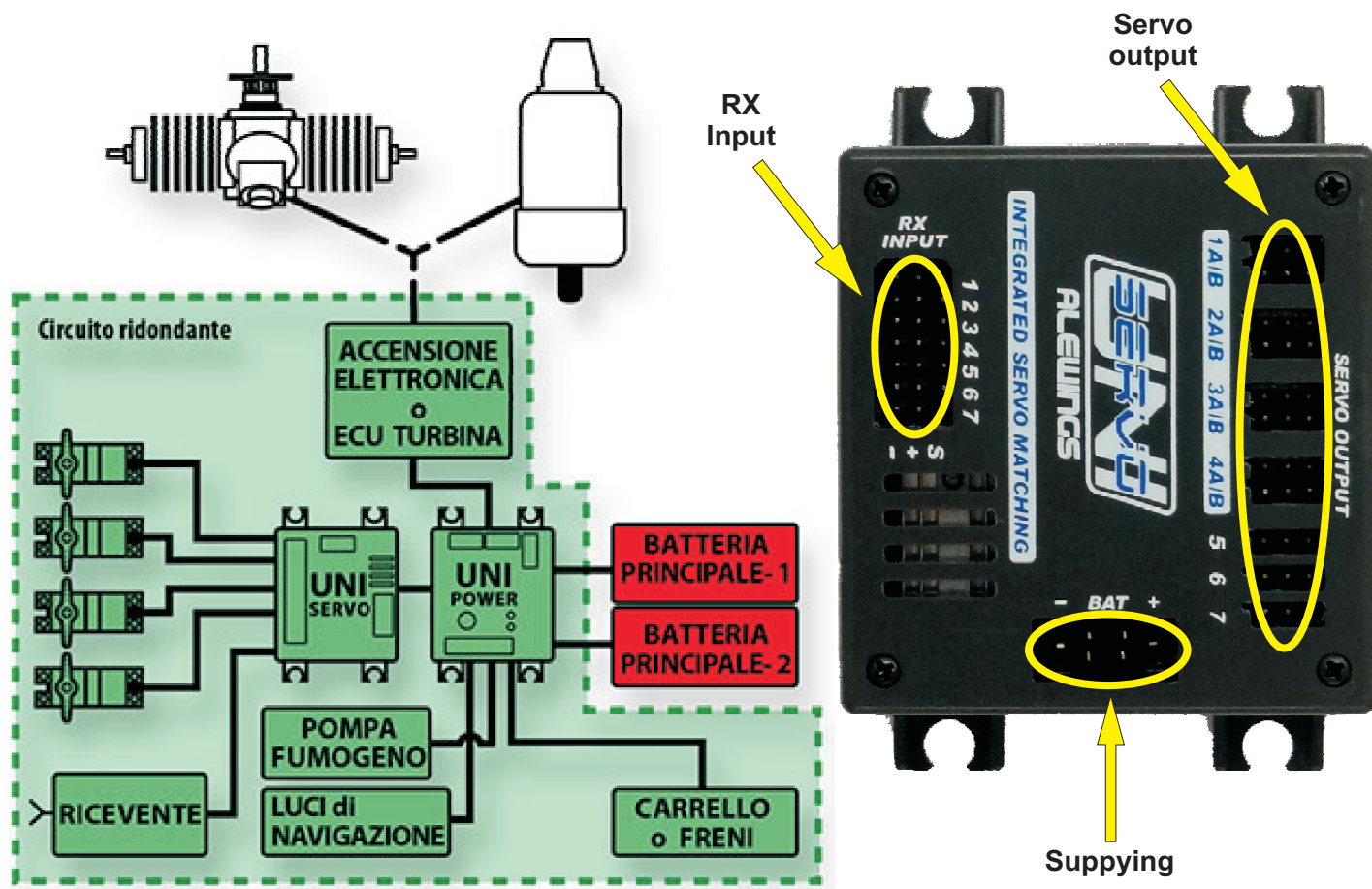It manages up to 7 channels from receiver in input and up to 11 servos in output.

First 4 channels have double outputs and can be programmed for setting center position, end points and rotation of servos.
It must be supplied by an unit of uniPower serie and it accepts in input a voltage frem 5 to 7,4V.

It directly supplyes servos in output at the same voltage as uniPower gives, while voltage to receiver can be regulated from a maximum same as input voltage to a minimum of 5V; voltage setting is obtained by rotating with a little screw driver the trimmer on the back side of the device.
It has active filters and single protections for short circuits on all 11 outputs for servos.
Thank to Servo Matching system integrated into channels 1,2,3 and 4 you can set centre position, end points and rotation of servos. Programming is very easy and can be done using the buttons on the back side of the unit.

You can use UniServo without uniPower but it needs a supplying that we suggest to be stabilized and redundant (double battery).
See "Connection" paragraph for other examples of use.

RX Input

Servo output

Supplying

Circuito ridondante

ACCENSIONE ELETTRONICA o ECU TURBINA

UNI SERVO

UNI POWER

BATTERIA PRINCIPALE- 1

BATTERIA PRINCIPALE- 2

POMPA FUMOGENO

RICEVENTE

LUCI di NAVIGAZIONE

CARRELLO o FRENI

Position the 4 vibration dampers provided into the appropriate seats at the two sides of the box.

Then fix the unit to the receiver plate using the 4 screws provided.

ATTENTION: tight screws until head of the screw reaches the rubber, no tighten more and not press the rubber.

It is suggested to realize an anti vibration holder using small grommet columns in order to isolate the electronic circuit from vibrations and to allow air to circulate between base of the device and model plate.

If you decide to fix UniPower directly to the plate without small columns you must open holes in correspondence of heat sink and air intakes of the device so that they can facilitate cooling.

Before using UniServo, please carry out all connections as shown into paragraph "Connections"; if necessary, set the servo outputs following indications at paragraph "Programming" and set voltage to receiver using the trimmer on the backside of the device.

Before using you must check maximum supply voltage accepted by your receiver.

TURNING ON/OFF:

UniServo doesn't have any switch so, if you connect a supply into connector "BAT", the device turns automatically on. It is suggested to use a supply unit (UniPower) which features switches and circuits for supply redundancy.

NB: if not used, disconnect batteries

ATTENTION: check polarity when you connect supply to connector "BAT". If you connect with the wrong polarity, the device gets damaged and must be sent to Alewings for service.
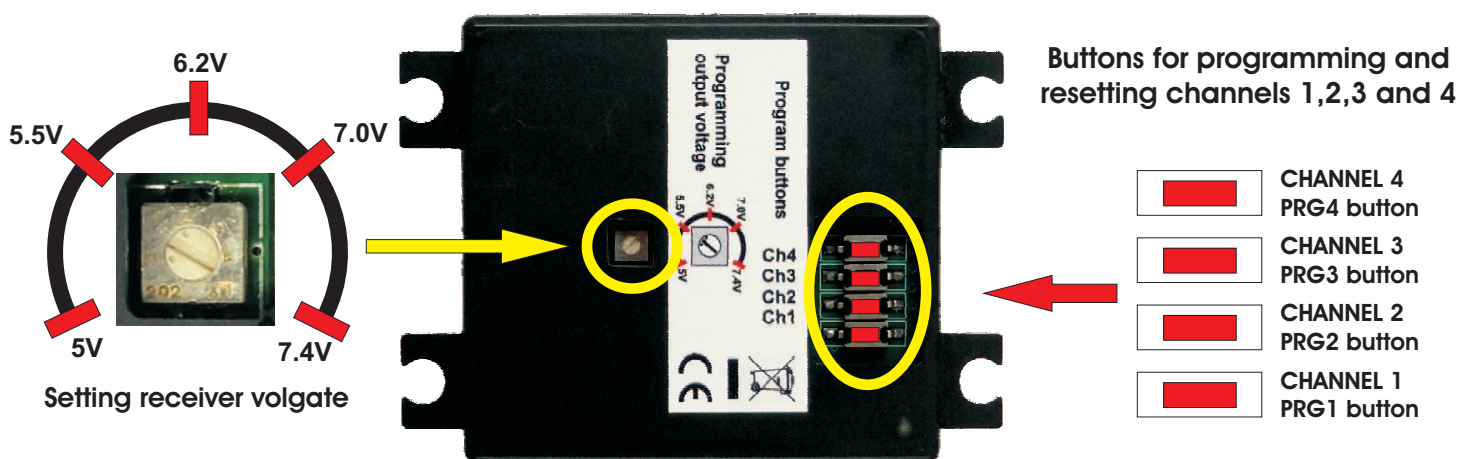
Servos are supplied at the same voltage as input from UniServo (BAT); receiver is supplied at a voltage stabilized by an internal voltage regulator; you can set the voltage to receiver in the following way.

Check the voltage required by the receiver you intend to use and don't set the voltage to receiver at a higher value.

Using a little screwdriver, move the trimmer on the backside of the unit to the position corresponding to desired voltage.

If you want to set a voltage between two of the values indicated or approximated to a tenth of Volt, the use of a voltmeter is recommended. Position the tips of the voltmeter on the positive and negative poles of the female female extension leads provided for connection to receiver: moving the trimmer you can program the voltage with maximum precision.
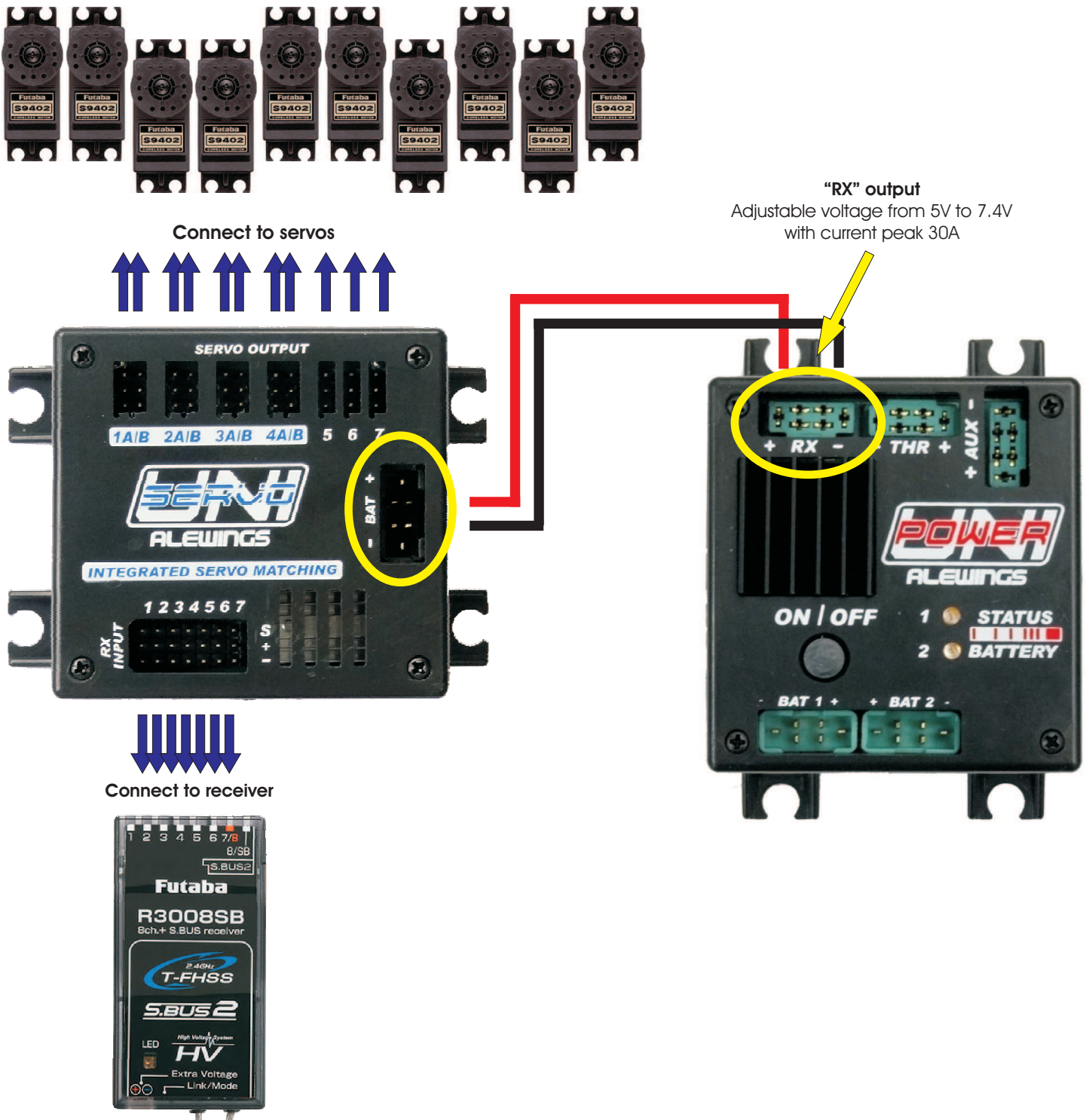

6.2V

5.5V   7.0V

5V   7.4V

Setting receiver volgate

Programming output voltage

Program buttons

Buttons for programming and resetting channels 1,2,3 and 4

Ch4
Ch3
Ch2
Ch1

CHANNEL 4
PRG4 button

CHANNEL 3
PRG3 button

CHANNEL 2
PRG2 button

CHANNEL 1
PRG1 button

Check the voltage required by the receiver you intend to use and don't set the voltage to receiver at a higher value
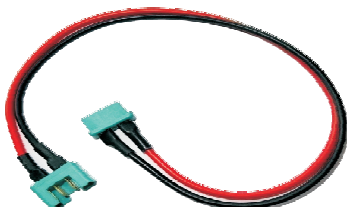
UniServo to UniPower connection scheme:

For connecting power supplying from UniPower to UniServo we suggest to use a black/red cable of adequate section (minimum 1,5 smm) with male and female MPX connectors.
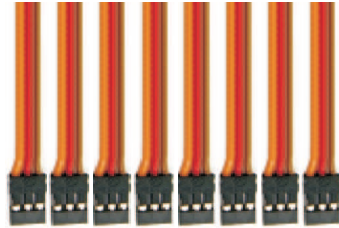
"RX" output
Adjustable voltage from 5V to 7.4V
with current peak 30A

Connect to servos

Connect to receiver

Available cables for connecting UniPower to UniServo (not included and separately sold):
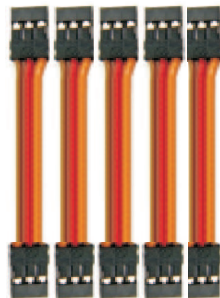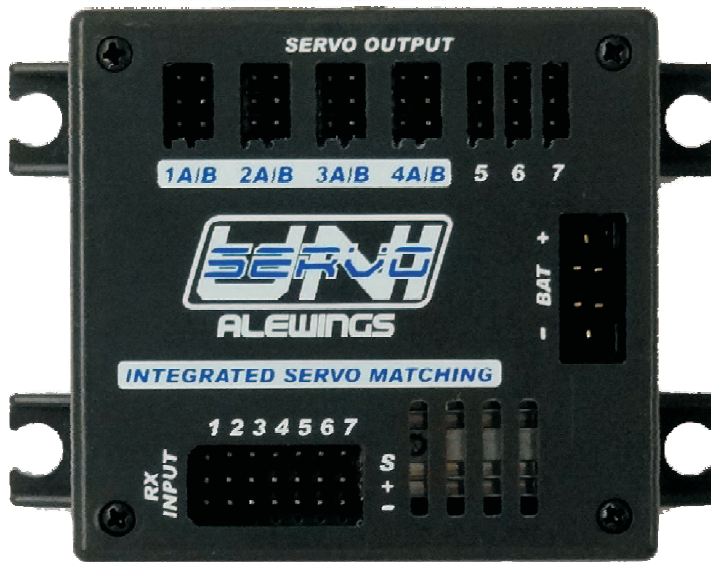
Item 90050322	Battery extension lead MPX M-F	2x1.5smm	L150mm
Item 90050323	Battery extension lead MPX M-F	2x2.5smm	L150mm
Item 90050324	Battery extension lead MPX M-F	2x1.5smm	L300mm
Item 90050325	Battery extension lead MPX M-F	2x2.5smm	L300mm

1A/B 2A/B 3A/B 4A/B 5 6 7

SLAVE MASTER   SLAVE MASTER   SLAVE MASTER   SLAVE MASTER

Outputs for programmable channels

UniServo to servos connection:
Please connect servos to outputs named "SERVO OUTPUTS".
Always pay attention to polarity.

SERVO OUTPUT

1A/B 2A/B 3A/B 4A/B   5 6 7

- BAT +

UNISERVO
ALEWINGS

INTEGRATED SERVO MATCHING

1 2 3 4 5 6 7

RX INPUT   S + -

UniServo Adjust to receiver connection:
Connect receiver channels to UniServo using the 7 cables provided.

NOTE: it is not at all necessary that channel 1 on receiver corresponds to channel 1 on UniServo.

Pay attention to extension leads polarity both on the receiver side and unit side.

Futaba
R3008SB
8ch.+ S.BUS receiver
2.4GHz T-FHSS
S.BUS2
HV High Voltage System
LED
Extra Voltage
Link/Mode

As example you will find here the procedure for programming the channel 1.
To program the other channels you have to follow the same procedure acting on the button corresponding to the concerned channel.

Programming channel 1:
Turn the device on; make sure that the incoming signal is ok and that the servos connected to the outputs A and B move correctly.
On the back of the box recognize the right button for the channel you want to program: from here on you will act on it.

Identify the servo connected to the MASTER output (1B) and carry out the following settings:
  - from the transmitter (SUBTR function) regulate the central position of the servo
  - always from the transmitter (ATV function) regulate the positions of maximum mechanical range of the servo that you can get

Recording central position (CE) and end points (HI and LO):
1) Move the transmitter stick to the central position (CE) and keep it there.
1a) Press the PRG button and keep it pressed for at least 3 seconds: the central position CE is recorded and both servos make a little movement as confirmation.

2) Move the transmitter stick to one end point position (i.e. LO) anf keep it there.
2a) Press the PRG button and keep it pressed for at least 3 seconds: the low position LO is recorded and both servos make a little movement as confirmation.

3) Move the stick to the opposite end point position (HI) and keep it there.
3a) Press the PRG button and keep it pressed for at least 3 seconds: the high position HI is recorded and both servos make a little movement as confirmation.
Move the stick again to central (CE) position.

Choice of the rotation sense for the SLAVE output:
4) Press briefly the PRG button to choose the rotation sense between right and reversed; moving the stick you can check if SLAVE servo moves rightly. After choice move the stick again to central position (CE).
4a) Keep pressed the button for at least 3 seconds in order to record the setting: the rotation sense is recorded and both servos make a little movement as confirmation.

The servos automatically go to the next step i.e. to the central position (CE) recorded before.

Programming the central position (CE) for the SLAVE output:

5) Move the transmitter stick to one or to the other end point to define the direction of the servo movement; press the PRG button to define the movement amount: if you press one single time the servo moves of 0,1°, if you keep the button pressed for more than one second the servo moves quickly and continuously.
When you reach the desired position of the servo, release the PRG button and move the transmitter stick to the centre again.
5a) Press the PRG button (with the transmitter stick in the central position) for at least 3 seconds: the new central position CE for the slave output is now recorded.

The servos automatically go to the next step i.e. to the low end point position (LO) recorded before.

Programming the low end point position (LO) for the SLAVE output:
6) Move the transmitter stick to one or to the other end point to define the direction of the servo movement; press the PRG button to define the movement amount: if you press one single time the servo moves of 0,1°, if you keep the button pressed for more than one second the servo moves quickly and continuously.
When you reach the desired position of the servo, release the PRG button and move the transmitter stick at the centre again.
6a) Press the PRG button (with the transmitter stick in the central position) for at least 3 seconds: the new LO position for the slave output is now recorded.

The servos automatically go to the next step, i.e. to the high end position (HI) recorded before.

Programming the high end point position (HI) for the SLAVE output:
7) Move the transmitter stick to one or to the other end point to define the direction of the servo movement; press the PRG button to define the movement amount: if you press one single time the servo moves of 0,1°, if you keep the button pressed for more than one second the servo moves quickly and continuously.
When you reach the desired position of the servo, release the PRG button and move the transmitter stick at the centre again.
7a) Press the PRG button (with the transmitter stick in the central position) for at least 3 seconds: the new HI position for the slave output is now recorded.

Automatically the device comes out from the programming modality and goes back to the operating modality.

WHEN YOU HAVE YET CARRIED OUT THE PROGRAMMING OF CE, HI AND LO (FROM POINT 1 TO POINT 4):

If you enter again into the programming menu after you have carried out the programming of the CE, HI and LO positions for the MASTER output and you have chosen the rotation sense for the SLAVE output (points from 1 to 4), you directly go to the programming of CE, Hi and LO positions for SLAVE outputs.

Points 1-4 settings will be not presented any more.

Attention: to carry out again the programming of CE, HI and LO positions for the MASTER output and the choice of the rotation sense for the SLAVE output, you have to reset the channel (see the "Default setting" paragraph).

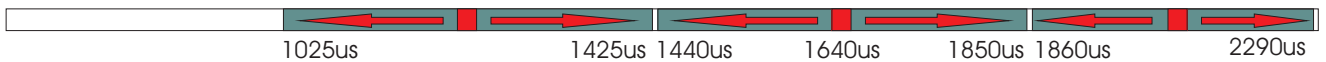**Available range for recording the center position CE for the master output**

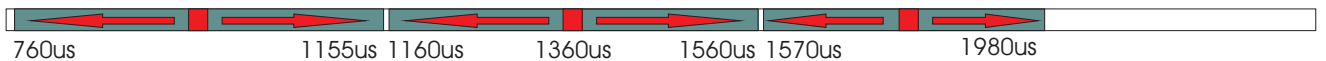Attention: you will not be able to record the center position CE out of this range

760us		1350us	1500us	1650us		2290us
MINIMUM						MAXIMUM
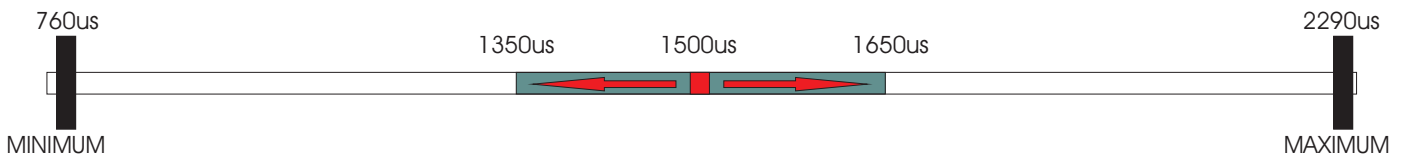
Example of programming with CE position recorded at 1500usec

815us　1015us　1215us　1300us　1500us　1700us　1720us　1920us　2120us

Example of programming with CE position recorded at 1640usec (upper position)

1025us　1425us 1440us　1640us　1850us 1860us　2290us

Example of programming with CE position recorded at 1360usec (downer position)

760us　1155us 1160us　1360us　1560us 1570us　1980us

Restoring default setting of the channel 1,2,3 and 4:
This procedure allows you to reset every single channel to the default settings. If you want to reset all the 4 channels, you have to carry out the same procedure for each channel one by one.

- After connecting as shown into the "Connections" paragraph , check that the device is off
- Press the button on the back side of the box corresponding to the channel you want to reset and keep pressed
- Turn UniServo on by connecting a supply to "BAT" input
- When UniServo is on, release the button on the back of the box

Now the channel is set according to the default values.

This procedure causes the total loss of every programming for the channel.

Servo rotation sense, central position and end points are the same as they come out from the receiver.
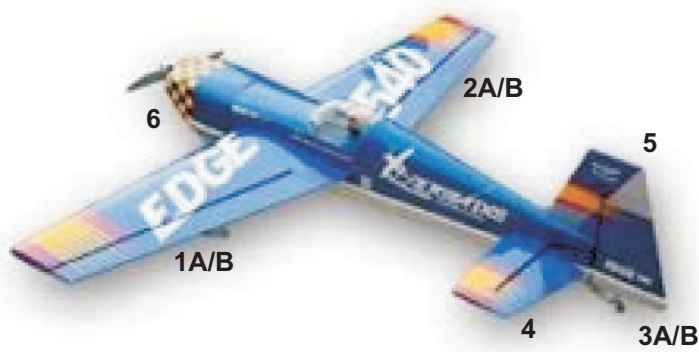
Channels assignment for a maxi acro

1A/B	AIL left with two servos
2A/B	AIL right with two servos
3A/B	RUD with two servos
4	ELE left with one servo
5	ELE right with one servo
6	THR with one servo

Channels assignment for an acro sport JET

1A	AIL left
1B	AIL right
2A	FLP left
2B	FLP right
3A	ELE left
3B	ELE right
4	GEAR
5	RUDDER
6	Gear RUDDER

Connect directly to the receiver the turbine throttle and other possible channels.
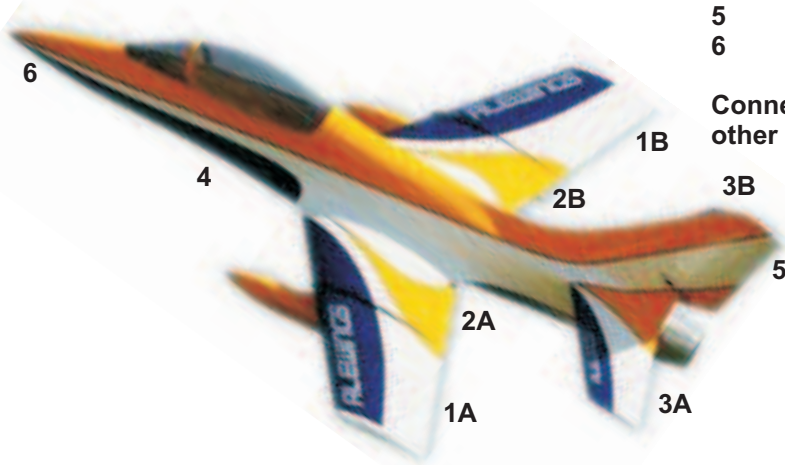
WARNING

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:	80x61x23mm
Weight:	50gr without cables
	70gr cables and connectors included
Supply voltage:	from 5,5V to 8,4V
Batteries:	2s LiPoli - LiFe - 5s Nixx
Output servos voltage:	direct, not stabilized
Output receiver voltage:	stabilized and settable from a minimum of 5V to a battery voltage
Maximum current to RX:	10A continuous - 15A peak
Maximum current to servos:	3A continuous, 6A peak for each output protected by fuse
Maximum current drain:	about 50mA
Working temperature:	-10 up to +60 °C

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