BRUSHLESS ELECTRONIC SPEED CONTROLLER INSTRUCTION（HW25\30A）

A.PRODUCT DESCRIPTION

1 Digital electronic design,all adopt import accessories

2 Extreme low output resistance, super current endurance.,totally meet telectric current specs

3 BEC adopt volts regulation independantly,best anti-jamming,lower lost control possibility effectively.

4 Adopt independent PCB to control circuit and power output,prevent circuit to be controlled from power tube temperature going up,there is 2mm space between circuit control and power output,which is good to heat dissipation.

5 Possess temperature protect circuit function.

6 Possess over-volts,lower volts protection function.

7 Possess delicate touch feeling,superior speed linear.

8 Possess throttle memery function,no warning.

B、SPECIFICATIONS

HW25A/HW30A
No loading current:25A/30A
Continue current:30A/40A
Max current:40A(up to 10s),50A(up to 10s)
BEC current:Max 2Amp,linear volts regulator
Weight:22g

C、FEATUERS

1 Safe startup mode:When switch on power,ESC won't be started no matter throttle rocker at which positions,safe and reliable.

2 Low volts protection: When input volts lower than setted value,ESC will reduce or shut down the output automatically,protecting battery effectively.

3 Over volts protection:When input volts higher than rated volts,it emit warning tone,and stop working,self-protecting effectively.

4 Over-heat protection:When the temperature is over 100 celsius degree,the ESC will reduce the output power, protecting ESC effectively.

5 Battery type: Li-xx(Li-ion or Li-poly) / Ni-xx(NiMh or Nicd).

6 Startup mode: normal / soft / super-soft, default is normal startup.

7 Transmitter compatibility:Throttle is being settable,compatible with all transmitter.

8 Security:If lost signal in normal use,the ESC would shut down output,prevent the loss caused by lost control

D、THROTTLE RANGE SETTING

This setting is for first time using or a new transmitter is being used.

1、Switch on transmitter,push the rocker to the top,connect to ESC power.

2、Brushless motor emit a tone shows that power is connected sucessfully.

3、Brushless motor emit beep….beep…which means throttle is at the top.

4、Move the rocker to the bottom within 2s,**brushless motor emit beep….beep….beep….which means throttle is at the bottom.**

5、Wait for about 5s,brushless motor emit beep tone indicates that sure setting.

6、Now it is done for first time use setting.

E、NORMAL SETTING PROCEDURE

1 Switch on transmitter,push the rocker to the bottom,and then switch on transmitter.

2 Brushless motor emit one sound which indicate that power supply is OK.

3 **"Beep…beep…beep…"several sounds should be emitted which means all are ready.**

4 Move throttle rocker upwords and go flying.

ESC will emit constant warning tone when startup the throttle rocker position is not at the bottom

F、PROGRAM CARD SETTING

a.Program the ESC with your transmitter(4 steps)

1. Enter program mode
2. Select programmable items
3. Set item' s value (Programmable value)
4. Exit program mode

b.Enter program mode

1) Switch on transmitter, move throttle stick to top , connect the battery pack to ESC

2) Wait for 2 seconds, the motor should emit special tone like "beep-beep-"

3) Wait for another 5 seconds, special tone like "beep" should be emitted, which means program mode is entered

c.Select programmable items:

After entering program mode, you will hear 8 tones in a loop with the following sequence. If you move the throttle stick to bottom within 2 seconds after one kind of tones, this item will be selected,or it is failed setting.

1. “beep” brake (1 short tone)
2. “beep-beep-” battery type (2 short tone)
3. “beep-beep-beep-” cutoff mode (3 short tone)
4. “beep-beep-beep-beep-” cutoff threshold (4 short tone)
5. “beep-----” startup mode (1 long tone)
6. “beep-----beep-” timing (1 long 1 short)
7. “beep-----beep-beep-” set all to default (1 long 2 short)
8. “beep-----beep-----” exit (2 long tone)

Note: 1 long “beep-----” = 5 short “beep-”

d. Set item value (Programmable value)

You will hear several tones in loop. Set the value matching to a tone by moving throttle stick to top when you hear the tone, then a special tone “beep” emits, means the value is set and saved. (Keeping the throttle stick at top, you will go back to step 2 and you can select other items; Moving the stick to bottom within 2 seconds will exit program mode directly)

e. Exit program mode

There are 2 ways to exit program mode:

1. In step 3, after special tone “beep”, please move throttle stick to the bottom position within 2 seconds.
2. In step 2, after tone “beep-----beep-----” (ie.The item #8), move throttle stick to bottom within 3 seconds.

G、Program values

Tones / Items	“beep-” 1 short tone	“beep-beep-” 2 short tones	“beep-beep-beep” 3 short tones
Brake	Off	On	
Battery type	Li-ion / Li-poly	NiMH / NiCd	
Cutoff mode	Soft-Cut	Cut-Off	
Cutoff threshold	Low	Medium	High
Start mode	Normal	Soft	Super soft
Timing	Low	Medium	High

H、Simple functions setting

1 Brake Settings：brake enabled / brake disabled, default is brake disabled

2 Battery Type：Li-xx(Li-ion or Li-poly) / Ni-xx(NiMh or Nicd)，default is Li-xx.

3 Low Voltage Protection Mode(Cutoff Mode) ： power reducing / power cutoff, default is power reducing.

4 Low Voltage Protection Threshold(Cutoff Threshold) ： low / medium / high, default is medium cutoff voltage.

For Li-xx battery，number of battery cells are judged automatically，low / medium / high cutoff voltage for each cell are: 2.6V/2.85V/3.1V. For example: 3 Cells Li-Poly, when medium cutoff voltage is set, the cutoff voltage is: 2.85*3=8.55V.

For Ni-xx battery, low / medium / high cutoff voltages are 0%/45%/60% of the startup voltage (0% means the low voltage cutoff protection function is disabled) . For example: a 10 cells NiMH battery pack, fully charged voltage is 1.44*10=14.4V, when medium cutoff voltage is set, the cutoff voltage is 14.4*45%=6.5V.

5 Startup mode: normal / soft / super-soft, default is normal startup.

6 Timing: low / medium / high, default is medium timing. In normal cases, low timing can be used for most motors. But for high efficiency, we recommend the Low timing for 2 poles motor and Medium timing for 6 poles and above. For higher speed, High timing could be used. 7. Full Protection Features: Low-voltage cutoff protection / over-heat protection / throttle signal lost protection.