Flyzone™
how high will you soar

CALYPSO™

20A ESC INSTRUCTIONS

SPECIFICATIONS	
Constant Current:	**20A**
Burst Current (< 10 seconds):	**25A**
BEC Mode:	**Linear**
BEC Output:	**5V, 2A**
BEC Output Capability:	**5 servos**
Battery Cell Count:	**2S – 3S LiPo, 5 – 9 cell NiMH**
Weight:	**19g**
Dimensions:	**42 x 25 x 8mm**

The ESC included with the Calypso is pre-programmed to the correct settings to work best with the Calypso—other than calibrating the throttle (only if using a transmitter different than the Tactic that comes with the Calypso), there is nothing that needs to be done with the ESC. However, should you ever desire to reprogram the ESC to suit different requirements, following are full programming instructions.

FACTORY DEFAULT SETTINGS	
Motor Brake:	**ON**
Battery Type:	**LiPo**
LVC (Low-Voltage Cutoff):	**Medium (3.15V/cell)**
Start Mode:	**Normal (.3 seconds)**
Timing:	**Low (3.75°)**

If using a transmitter different than the Tactic included with the RTF version, the throttle must be calibrated.

CAUTION: All adjustments to the ESC should be conducted with the propeller removed from the motor or one of the three motor wires disconnected from the ESC to prevent the motor from starting inadvertently.

1. Turn on your transmitter and move the throttle stick to full-throttle.

2. Connect the battery. The ESC will emit three rapid tones ("♪1 2 3") indicating that all is well, followed by two short beeps ("beep beep") indicating that the top point of the throttle range has been detected and set.

3. You have about four seconds to return the throttle stick all the way down. Then the ESC will emit three more beeps (indicating the number of LiPo cells) followed by one long beep ("beeep") indicating that the low point of the throttle range has been detected. Simply disconnect the battery to end the procedure. Now the throttle has been calibrated and the Calypso is ready to fly.

FULL PROGRAMMING INSTRUCTIONS

1. Access the Programming Menu:

   A. Turn on the transmitter and advance the throttle stick all the way forward.
   B. Connect the battery to the ESC.

   Listen: *Three tones ("♪1 2 3")* ⇨ *two short beeps ("beep beep")* ⇨ *a 5-second pause* ⇨ *five tones ("♪1 2 3 4 5")*

Now the ESC is in the **Programming Menu** and will loop through a sequence of beeps each of which represents a function in the menu that can be reprogrammed. (You don't have to do anything at this time; you can simply listen to the beeps identifying which function correlates with which sequence of beeps.)

PROGRAMMING MENU		
Sequence		**Function**
One short beep	*"beep"*	**Brake**
Two short beeps	*"beep beep"*	**Battery type**
Three short beeps	*"beep beep beep"*	**Cutoff mode***
Four short beeps	*"beep beep beep beep"*	**Cutoff Voltage**
One long beep	*"beeep"*	**Start mode****
One long beep, one short beep	*"beeep beep"*	**Timing**
One long beep, two short beeps	*"beeep beep beep"*	**Set the ESC to default**
Two long beeps	*"beeep beeep"*	**Exit programming**
*Determines how the motor will stop when low-voltage is detected. Soft: Motor will quit gradually. Hard: Motor will cut immediately.		
**Determines how the motor starts when you advance the throttle. Normal is recommended for airplane (fixed-wing) use.		
(Soft or super-soft is recommended for helicopters.)		

2. After you hear the sequence of beeps that represents the function you wish to change, **lower** the throttle stick to enter the programming mode for that function. The ESC will now beep as indicated below, waiting for your command to change the setting.

Function	One Beep	Two Beeps	Three Beeps
Brake	*Off*	*On*	
Battery Type	*LiPo*	*NiMH*	
Cutoff Mode	*Soft*	*Hard*	
Cutoff Voltage	*Low (2.85 V)*	*Medium (3.15V)*	High (3.3V)
Start Mode	*Normal*	*Soft*	Super soft
Timing	*Low (3.75°)*	*Medium (15°)*	High (26.25°)

After you hear the number of beeps (one beep, two beeps, three beeps) indicating the new setting you wish to use, **advance** the throttle again. Now you will hear the tones ("♪1 2 1 2") indicating that the value has been set and saved. If you immediately lower the throttle stick (within two seconds) you will exit programming mode proceeded by the three short beeps ("beep beep beep") counting the number of LiPo cells, followed by one long beep ("beeep") indicating that the model is ready to fly. Or, you can simply disconnect the battery at any time to exit programming mode.

If you leave the stick advanced, the programming mode will resume where it left off—simply listen for the sequence of beeps that represents the next function you wish to change, then lower the throttle stick again to enter the programming mode for that function.

Example

To set the motor brake from the factory default of "on" to "off":

1. Advance the throttle stick. Turn on the transmitter.

2. Connect the battery. Listen for the three tones ("♪1 2 3") followed by two short beeps ("beep beep") followed by a 5-second pause followed by five tones ("♪1 2 3 4 5"). The ESC is now in the Programming Menu.

3. After you hear one short beep ("beep") indicating the motor brake function, lower the throttle stick.

4. Listen for the beeps: one beep = brake off, two beeps = brake on. If you do nothing the ESC will simply loop through the sequence of beeps—once, then twice, then once, then twice, etc. waiting for your command to turn the brake on or off. To turn the brake off advance the throttle stick after the single beep. Listen for the tones ("♪1 2 1 2") indicating that the setting has been set and saved. If that's all you wanted to set, immediately lower the throttle stick (within two seconds) to exit programming mode, then hear three short beeps ("beep beep beep") followed by one long beep ("beeep") indicating that the model is ready to fly.

Auto-Protection

The ESC features Auto-Protection to discontinue power to the motor under certain conditions:

1. Start up failure: If the motor fails to start within 2 seconds of advancing the throttle the ESC will automatically cut power. To restart, lower the throttle stick, then advance again. This can happen if there is a poor connection between the ESC and motor or if the propeller or motor is impeded for any reason.

2. Over-heat protection: If the ESC temperature ever rises to about 110 Celsius the ESC will automatically reduce power.

3. Signal loss: Power to the motor will be reduced if the throttle signal is lost for 1 second. If the signal is lost for 2 seconds motor power will be cut completely.

TROUBLESHOOTING GUIDE		
Problem	**Reason**	**Action**
Motor does not work, no tones or beeps are coming from the ESC.	The ESC is not receiving power from the battery.	Check the battery or plugs or change the plugs if the wires are damaged.
Motor does not work, Alert Tone sounds ("beep-beep," "beep-beep," "beep-beep,"…).	Battery Voltage is too high or too low.	Make sure the battery is charged and/or you are using the correct battery.
Motor does not work, Alert Tone sounds (long beeps: "beeeep-beeeep- beeeep…).	The ESC is receiving power from the battery, but is not receiving a signal from the receiver.	Make sure the transmitter is turned on and that the receiver is linked to the transmitter and receiving a signal.
Motor does not work, Alert Tone sounds (rapid beeps: "beepbeepbeepbeepbeep…).	Throttle stick is not in the lowest position, or throttle needs to be calibrated.	Lower the throttle stick all the way, or recalibrate the throttle per calibration instructions.
Motor does not work, five tones are sounded ("♪1 2 3 4 5") after the two beeps.	The direction of the throttle channel is reversed and the ESC has entered the Programming Menu.	Set the throttle direction the other way in the transmitter.
The motor turns the wrong direction.	The three motor wires are incorrectly connected to the ESC.	Swap any two of the motor/ESC wire connections with each other.

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