**Operating Instruction** 

## Specifications

The XController Lite Brushless ESC speed controllers are small, micro-processor controlled units providing proportional control of brushless electric motors.Carefully read through these instructions and the safety information before connecting and using the unit for the first time.

#### XC-65-Lite

Motor current	65 A, peak 80 A			
Battery type (cell count)	LiPo (2 – 6cells) or NC/NiMH (6 – 18 cells)			
Dimensions	72 x 33 x 12 mm			
Weight	61 g			
BEC	5.2 V max. 4 A			
Clock frequency	10 kHz			
XC-45-Lite				
Motor current	45 A, peak 60 A			
Battery type (cell count)	LiPo (2 – 3 cells) or NC/NiMH (5 – 9 cells)			
Dimensions	67 x 25 x 7 mm			
Weight	38 g			
BEC	5.2 V max. 3 A			
Clock frequency	10 kHz			

### XC-22-Lite

Motor current	22 A, peak 30A		
Battery type (cell count)	(cell count) LiPo (2 – 3 cells) or NC/NiMH (5 – 9 cells)		
Dimensions	47 x 26 x 7 mm		
Weight	22 g		
BEC	5.2 V max. 2 A		
Clock frequency	10 kHz		

#### XC-12-Lite

Motor current	12 A, peak 16A		
Battery type (cell count)	LiPo (2 – 3 cells) or NC/NiMH (5 – 10 cells)		
Dimensions	28 x 18 x 6 mm		
Weight	7.5 g		
BEC	5.2 V max. 1 A		
Clock frequency	10 kHz		

#### Features

BEC	Integral receiver power supply
hec	High pulse frequency for fine proportional control.
POR	Power-on guard, prevents accidental motor start-up
ТР	Thermal overload protection
PCO	Low-voltage power-off
Rx filter	Switches off the controller if the signal fails or is invalid.

## Connections

- Connect the three motor wires to the wires attached to the motor; if the motor rotates in the wrong direction, swap over any two wires.
   Connect the receiver lead to the throttle socket at the receiver.
- Connect the receiver lead to the throttle socket at the receiver.
  When the Roxxy BL-Control 7xx BEC is connected to the battery, it emits an audible signal according to the set battery type (LiPo battery: 2 x or 3 x beep, depending on cell count. If connected to a NC or NiMH pack, you will hear a melody instead of the beeps).

## Programming the Stop / Full throttle position

- To program the full-throttle position, switch the transmitter on and pull the throttle stick upwards.
- 2. Connect the controller to the battery and wait for about two seconds
- (power-on melody followed by beep sequence for cell count). 3 The unit emits a long beep, this means that the full-throttle position
- The unit emits a long beep: this means that the full-throttle position has been detected.
- 4. Move the throttle stick down and wait about one second: the unit emits a melody. The Stop position is now set.
- 5. If no confirmation signal is emitted, check that the receiver is working; alternatively operate servo reverse for the throttle channel.
- Move the throttle stick from the Stop position in the direction of full-throttle: the motor now starts running.

### Programming the parameters

- 1. Connect the speed controller to the motor and receiver. Do not connect a battery.
- 2. Switch transmitter on and move throttle stick to full-throttle.
- 3. Connect the battery: three-tone melody sounds (only for LiPO:) beep sequence for cell count - long beep - three-tone melody - beep for the first programming parameter (see Parameter table). If no confirmation signal is emitted, check that the receiver is working; alternatively operate servo reverse for the throttle channel.
- 4. Programming mode consists of a constantly repeating cycle of the eight available parameters. These eight parameters are indicated by different beep sequences (see Parameter table).
- 5. To select a particular parameter, move the throttle stick to the Stop position before the beep signal for the next parameter is emitted.
- 6. You are now in the Settings menu, where you can select one setting from a maximum of three, depending on the parameter. The various settings are also represented by different beep sequences (see Settings table).
- 7. If you wish to change a setting, simply move the throttle stick upwards after the beep for the appropriate setting. A confirmation melody indicates that the setting has been adopted. Further parameters are indicated by beeps and can be selected. Or you can leave the programming mode by unplugging the battery.
- After selecting parameter 7 or 8 the controller leaves the programming mode and works in the normal mode.

### Key to the settings

- 1. Brake: Brake on / Brake off. Default setting is Brake "Off".
- 2. Battery type: Lixx / NC / NiMH. Default setting is "Lixx".
- 3. Cut-off mode (low battery voltage): Slow reduction / Switch off. Default setting is "Slow reduction".
- 4. Cut-off threshold: Low / Medium / High. Default setting is "Medium". Lixx batteries: the cell count is determined automatically. The cut-off voltage for Low, Medium and High are: 3.0 V, 3.2 V and 3.4 V per cell. Nixx batteries: Low, Medium and High are: 0%, 50% and 60% of the initial voltage.
- 5. Motor start: Normal / Soft / Super-soft. Default setting is "Normal". "Normal" mode is a good choice for fixed-wing model aircraft. "Soft" mode is suitable for model helicopters. In "Super-soft" mode the motor starts very slowly (approx. six seconds from Stop to full-throttle position). Special feature: if the throttle stick is moved once from the full-throttle position to the Stop position, then back to the full-throttle position within three seconds, the motor starts with the "Normal" setting.
- 6. Motor Timing: Low / Medium / High. Default setting is "Medium". The "Low" mode can be selected for most applications. For high-efficiency two-pole motors we recommend the Medium setting. The "High" setting is suitable for motors with six or more poles. Caution: please test the settings on the ground before flying the model.

# Parameter table

Beep sequence	Parameter
1x	Brake
2x	Battery type
3x	Cut-off mode
4x	Cut-off threshold
5x	Motor start
6x	Motor timing
7x	Reset all data
8x	Exit

## Settings table

Parameter	Beep 1x	Beep 2x	Beep 3x
Brake	Off	On	-
Battery type	LiPo	NC/NiMh	-
Cut-off mode	Slow reduction	Switch off	-
Cut-off threshold	Low	Medium	High
Motor start	Normal	Soft	Super-soft
Motor timing	Low	Medium	High

