Xcelorin Brushless Electronic Speed Control

Thank you for purchasing the Losi™ Xcelorin™ Electronic Speed Control (ESC). This ESC will provide you the benefit of the latest in brushless technology. Featuring an advanced software interface with which you can finely tune the feel of the ESC to your needs, or use the 8th Quick Programming Card (8QPC) to make adjustments.

We believe it will be to your benefit to take the time and effort to read this manual.

We are confident you will be satisfied with the performance of the Xcelorin Sensorless ESC.

Losi/Horizon Support

If you have any questions concerning setup or operation of your Xcelorin ESC, please call Horizon customer support at 1-877-504-0233.

You are welcome to call us with any support issue or question you may have.

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Overview

The Losi Xcelorin electronic speed control (ESC) is specifically designed for operating sensorless brushless motors. Featuring low on-resistance, enhanced throttle response and strong brakes, this ESC has enough features to satisfy the most demanding driver. The pre-installed high airflow fan attached to the ESC heat sinks keep it cool and performing to the peak of its ability. In order to maintain 160A continuous current draw, the Xcelorin ESC uses very high-quality electronics and the best MOSFET transistors available.

A key feature is the three (3) stored settings within the ESC that are easily recalled for convenient use. These stored settings are referred to as "profiles." There are also two (2) user profiles that are written to by using the supplied software. These do not limit the functions of the ESC as you can easily use the included 8th Quick Programming Card (8QPC) to make changes to any desired setting.

The Low Voltage Cutoff (LVC) is preset for 4S LiPo batteries. For more experienced users, it can be changed to support NiMH, 3S, 4S and 5S LiPo batteries. Using the Quick Programming Card (8QPC), adjustments to the ESC can be made quickly and simply.

The Xcelorin ESC has a feature within it to prevent the vehicle from going into reverse before you have come to a complete stop. Once you have come to a stop, release the throttle trigger to the neutral position. Once you have been at neutral, push the trigger forward to engage reverse (if active). The ESC is also programmed to prevent going directly from reverse drive to forward. The ESC will have a short pause when changing from reverse to going forward to prevent damage to the motor or drivetrain of your vehicle.

Profile Overview

These stored settings, also referred to as "profiles," are defined as follows:

Profile #1 - "3S LiPo battery"

Cutoff Voltage - LiPo 3S
BEC – 6.0V
Brake/Reverse Role- Forward only **
Motor Timing- Low
Initial Acceleration- High
Drag Brake - 4% **
Brake - 20% **
Throttle Limit – 0% (No limit)
Reverse Throttle Limit – Not active

Profile #2 - (Default) "4S LiPo battery"

Cutoff Voltage - LiPo 4S
BEC – 6.0V
Brake/Reverse Role - Forward only **
Motor Timing - Low
Initial Acceleration - High
Drag Brake - 4% **
Brake - 20% **
Throttle Limit – 0% (No limit)
Reverse Throttle Limit – Not active

Profile #3 - "5S LiPo battery"

Cutoff Voltage - LiPo 5S
BEC – 6.0V
Brake/Reverse Role - Forward only **
Motor Timing - Low
Initial Acceleration - High
Drag Brake - 4% **
Brake - 20% **
Throttle Limit – 0% (No limit)
Reverse Throttle Limit – Not active

** 8QPC can change these settings

NOTE: You must use the supplied Xcelorin Setup Software to access all features of the ESC.

Initial Profile Setting from the Factory

Cutoff Voltage	LiPo 4S
Battery Elimination Circuit	6.0V
Brake/Reverse Role	Forward only
Throttle Limit	0% (no limiting)
Reverse Throttle Limit	Not active
Motor Timing	Low

Initial Acceleration	High
Drag Brake	4%
Brake	20%
Legacy or 2.4GHz	2.4GHz
Reverse Throttle Limit	Not active
Neutral Deadband	3
Reverse Rotation	Blank
Throttle Profile	Linear
Brake Profile	Linear

Overriding the Active Profile

There are three (3) saved, and two (2) user profiles within the ESC that were previously described. To override a setting within the active profile, select a saved profile that resembles your needs, or make further changes to the current profile. Review the 8QPC and set jumpers to your choice. You must make a choice for each area of the 8QPC, Cutoff Voltage, Brake, Drag Brake, Throttle Limit, Reverse Throttle Limit and Motor Timing.

For example if you have the ESC active profile set to Profile #2 (Default) and would like a little more brake but would like nothing else changed, place the jumpers on the following choices.

Brake - 30%   (default is 20%)

Drag Brake – 4%

Brake/Reverse Role- Forward only

Radio System - 2.4GHz

Then follow the instructions for using the Quick Programming Card. You can change one setting at a time or any combination. Making the above change is ONLY overriding the active profile. At any time, you can reset the ESC to profile #3 and the active profile is returned to the original profile #3 settings.

Selecting Profiles

Notice that Profile #2 is set from the factory as the DEFAULT.

1. Turn the Transmitter on.

2. Turn the vehicle on.

3. With the ESC turned on and ready for operation, press and hold the setup button until both the Yellow and Blue LEDs flash.

4. Release setup button.

5. The status LEDs flash to indicate the current profile setting.

LED status for each Profile below:

        Profile 1 Yellow and Blue LEDs flash

        Profile 2 Yellow, Blue and Green LEDs flash **(default setting)**

        Profile 3 Yellow, Blue, Green and Red LEDs Flash

        Profile 4 Red and Blue LEDs flash

        Profile 5 Yellow and Green LEDs flashing quickly

6. To make a change, quickly press the setup button, which will advance you to the next profile.

7. When you are finished, press and hold the setup button for 2 seconds, the four status LEDs will scroll and the new selection will be stored to the active memory of the ESC.

8. If you do not press the setup button within 15 seconds, the four status LEDs will scroll to indicate you are exiting programming. The ESC will return to neutral and be ready for use without any change.

Modifying the ACTIVE Profile

The Xcelorin 8th Quick Programming Card (8QPC) is used to make all adjustments to the active profile in your ESC. Any ACTIVE profile can be modified.

Using the Advanced 8QPC, you can set the following:

Brake/Reverse
- Forward w/o Reverse
- Forward pause then Reverse

Operating Mode
- Legacy Radio System
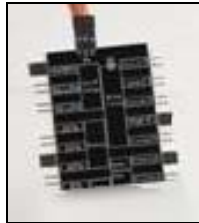- 2.4GHz Radio System

Braking Strength
- 10%
- 20%
- 30%

Drag Brake
- 0%
- 4%
- 8%
- 15%

Using the Quick Programming Card

With the 8QPC in your hand and the back facing you, notice the small jumper connectors. The jumpers are used to indicate which function you want to activate.

To change the settings rearrange the small jumpers to the desired settings.

To upload to the ESC do the following:

1. Ensure the transmitter and vehicle are turned off.
2. Make sure a battery pack is installed that has some charge in it.
3. Connect the battery to the ESC.
4. Turn the power on to the ESC, wait for the Blue (or Blue/Yellow) LED to come on.
5. Disconnect the Signal wire for the ESC from the receiver.

6. Connect the Signal wire to the top of the 8QPC, ensure it is connected correctly.

7. Pay close attention to the ESC LEDs and you will notice the Red LED flash, and on the 8QPC the Red LED will come on. If you do not notice the ESC Red LED flash, you can unplug the Signal wire from the 8QPC and reconnect again to verify the operation of the Red LEDs. Once you see the ESC Red flash and the 8QPC turn on Red, the ESC has accepted the programming.

8. Disconnect the Signal wire from the 8QPC, turn off the power switch.

9. Reconnect the signal wire into the receiver.

10. The ESC has been updated and you are ready.

Note: If you should happen to lose any of your jumpers they are the same jumpers used with computers and easily obtained at a computer store.

ESC Warning LEDs

• If the Battery low voltage cutoff (LVC) is reached the Red LED will blink.

• The Red LED will automatically stop blinking should the battery voltage recover above the chosen low voltage cutoff.

• If the ESC has detected a thermal overload, the Yellow LED will blink. Let the ESC cool down.

Setup/Calibration to Transmitter

To perform the setup/calibration between the ESC and Transmitter follow these steps:

1. Turn on the transmitter.
2. While turning on the vehicle Press and Hold the setup button, notice the Yellow LED is now ON solid. When the Yellow LED is on solid, you can release the setup button.

Note: If you cannot get the ESC to Calibrate, you may need to reverse your Throttle Servo on the transmitter.

3. Using the throttle trigger pull Full Throttle until the Green LED is ON solid.

4. Next push the throttle trigger to Full Brake until the Red LED is ON solid.

5. Now return the throttle trigger to the Neutral position and the Blue LED will be ON solid.

6. Turn off the vehicle/ESC power switch.

7. Turn the vehicle/ESC back ON; you are now ready to use the ESC.

Normal Operation

• After turning on the vehicle, the Blue LED will be on for normal operation.

• If reverse is active then you will notice the Yellow LED is also on.

Confirmation of Full Throttle and Brake

• While the ESC is on and operational, if you pull the throttle trigger to Full Throttle the Green LED will turn ON solid.

• Push the throttle trigger to Full Brake, the Red LED will turn ON solid.

Note: If the transmitter's brake endpoint adjustment is reduced after calibration then the Red LED will not turn on.

ESC Reverse Operation

Should you get into a situation that requires reverse, after you have applied any brakes you may have needed, return the throttle trigger to the neutral position. Wait a moment or two and then push the trigger forward for reverse.

Note: There is automatic protection within the Xcelorin ESC. Only after you have stopped and returned the trigger to neutral will reverse become available. If while traveling in reverse, pull the trigger to go forward. This is to help prevent serious damage to the drivetrain.

Connect the Xcelorin ESC and Sensorless Motor

There are three wires from the ESC a black, blue and white for the motor. Each wire will be soldered to a single motor tab. Make certain there is not a short across any of the motor connections. If shorted together, you will damage the ESC when the batteries are connected.
If the motor you are using runs backwards after installation, you can correct this in one of two ways:
- Switch any two motor wires on the ESC.
- Using the ESC Software, you can select the Reverse Rotation feature.

Connecting the Xcelorin ESC to your Receiver

The Receiver wire will connect to nearly all current receivers. Plug it into the Throttle Channel of the receiver.

Brown	Negative
Red	Positive
Orange	Signal

Xcelorin Software Installation

In the box along with your Electronic Speed Control, you will find:

- Xcelorin Software CD
- USB Cable
- USB Adapter

Requirements:

- Windows Operating System preferably Windows XP or higher
- USB Port to be available compatible with USB 1.0 or higher
- You must have FULL Administrator rights on your computer to install
- You may need to temporarily disable your Anti Virus program to complete the install

Before installing the Losi Xcelorin Setup Software, ensure that there is no prior version(s) installed using the ADD/REMOVE Programs function found in your CONTROL PANEL.

To install the Xcelorin software make sure you have **FULL** Administrator rights on the machine you want to install to. If not, the install will complete but will not connect with the USB Adapter.
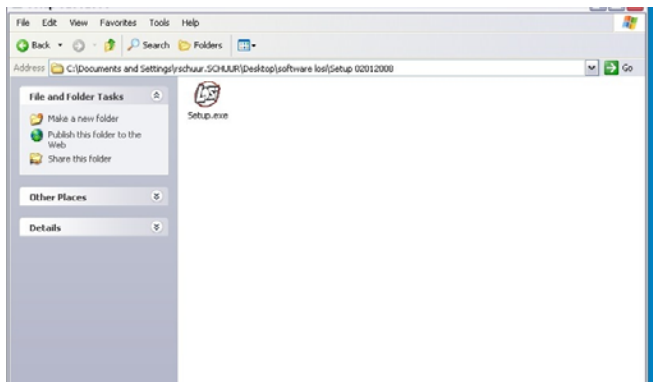
1. Now, insert the CD into your CD/DVD Player.

The following should automatically display.

2. When ready select the Next button. If you wish to cancel, select the Exit button.

If you do not get the previous panel, click on My Computer and then select (click on) the CD/DVD Drive to open it.

You should then have a panel similar to the one below.

Select and click on the Losi Setup.exe program icon. (You will now see the panel expected in step 1 above.)

3. The following should now be presented. You can change the default directory if desired, we recommend using this default.

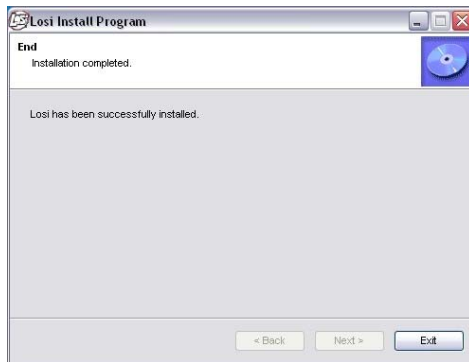When ready select the Next button. If you wish to cancel, select the Exit button.

4. The following should now be displayed and confirms the install location. When ready, select the Start button. If you wish to cancel, select the Exit button.
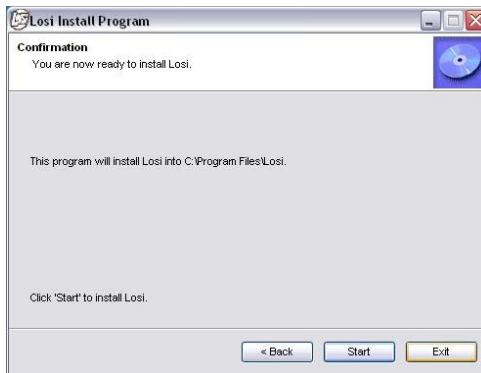
5. The following panel should now be presented, and confirms install was successful.

Select the Exit button to finish.

6. Connect the USB cable to your Windows PC or Laptop computer.

7. Connect the Xcelorin USB Adapter to the mini USB connector on the USB Cable.

You will be prompted to install the device drivers. They are both unsigned so select OK and continue. After a few moments, the USB adapter LED will turn from Red to Green.

If your Adapter LED remains Red, then disconnect the Adapter, wait a minute and then reconnect. If the Green LED does not come on, please reboot before calling Horizon support at 1 877-504-0233.

Note: If you have Windows 2000, you will be required to reboot before the USB Adapter will connect and the small LED on the adapter turns from Red to Green.

8. With the Xcelorin USB adapter LED now green, you are ready to start the Xcelorin software. Locate and select the Losi icon on your desktop.

Notice in the Connection box the USB is Green and the ESC is still Red.

9. You are ready to connect the Adapter to the ESC, using the Signal Wire.

WARNING:

Disconnect the battery from the ESC before connecting the Xcelorin USB adapter to the speed control.

Failure to do so may result in DAMAGE TO YOUR COMPUTER

Please note the label on the USB adapter; there are 3 color bars each marked which indicate how to connect the signal wire to the adapter.

10. With the ESC connected to the USB Adapter, the Xcelorin Software Connection status icons should now both be GREEN.

The Losi Xcelorin software is now installed and ready for use.

Xcelorin Software Overview

Using this you will find it quite easy to configure your new speed control. On the main panel, you will notice this button 🔵 , if you click on this the specific help for that function will display.

Take a moment to review the selectable functions, and read the specific help text for each to become familiar with them. To make configuration changes to a function select the setting you want, and from the drop down menu select your new choice or option. When you are satisfied and finished with this configuration, click the "SEND Settings" button located on the bottom (off center) of each tabbed page.

Note the four tabs down the right hand side, **General**, **Throttle**, **Brake** and **About**.

General Tab: Here you will find the following configuration settings:

Battery Type and Cutoff Voltage, Brake/Reverse, Motor Timing, Initial Acceleration, Percent Drag Brake, ESC operating mode, Deadband adjustment, Braking Percentage, Throttle Limit, Reverse Throttle Limit and Motor Rotation. All changes are done at your own risk.

Throttle Tab: Only recommended for more experienced Electronic Speed Control users. You can remap the throttle profile from the default linear line. Changes are done at your own risk.

Brake Tab: Only recommended for more experienced Electronic Speed Control users as well. You can remap the brake profile from the default linear line. Changes are done at your own risk.

About Tab: Here you will see the Setup software version installed, and date of last update. This will be helpful information should you have questions or support concerns.

Connection: This section is displayed on every Tab. There are two icons; one for the USB connection, the other indicates the Electronic Speed Control connection. They are RED in color when disconnected and GREEN on connection.

Note: Without an understanding of a specific function and reason, it is not recommended that you make changes to the default configuration. There have been defaults selected as a direct result of our testing, which were used to establish these settings. Changing of the configuration will be at your own risk.

Read Settings: Use of this button will read the current Electronic Speed Control (ESC) configuration and present it on the current tabbed page only.

Send Setting: Use of this button will send (write) the current selected configuration to the ESC for the current tabbed page only.

Upgrade Firmware: Use of this button will begin the firmware upgrade process. The following pop up will be displayed, and you need to select the location of the firmware update file. You may cancel this process here without any effect to the ESC firmware.
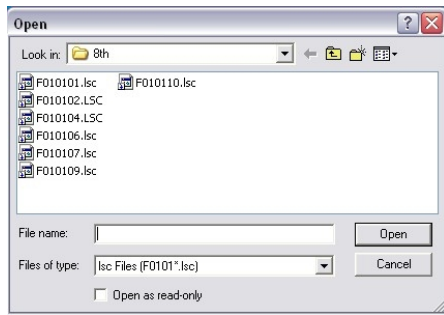
After finding and selecting the file, this confirmation screen will then display. You may still cancel at this time without any effect to the ESC firmware.

If you select OK, the progress status percentage of the upgrade will be displayed in the lower right. Please do not unplug your computer **or** the ESC while the upgrade is in progress or damage to the ESC may result.

If no problems were encountered, OK will be displayed and the configuration redisplayed. You are finished with the upgrade and you can re-configure the ESC or end the program.

If a problem is encountered and the upgrade fails, simply restart the upgrade process again. If there should be another failed upgrade, then end all other programs on your computer and possibly re-download the file from the Losi website.

If the problem persists, please call Losi/Horizon Product Support at 1-877-504-0233.

Updating ESC Firmware

Description: By providing you this ability to upgrade your firmware, the Xcelorin ESC will provide you with the benefits of future enhancements or quickly allow you to realize a software fix. Within a short period, you can upgrade your ESC firmware rather than packaging your ESC and sending it in for upgrade or repair. When you update the software, you are literally getting a new and improved ESC.

We have the ability to offer NEW configuration parameters, introduce finer adjustments and many more items with this capability.

DO NOT load previous versions of firmware without contacting support first or you may damage your ESC.

Current Software: grayed out, shows the software currently on the controller.

Xcelorin ESC Model is indicated by the first character in the Software Level.

C0101**XX**.LSC   - 18th Xcelorin
D0101**XX**.LSC   - 10th Xcelorin Sensored
E0101**XX**.LSC   - 10th Xcelorin Sensorless
F0101**XX**.LSC   - 8th Xcelorin Sensorless
G0101**XX**.LSC   - Reserved

Note: **XX** denotes the incremental release level

Toolbar File, Commands and Help

File – you can Export ESC settings to a file, Import ESC settings from a file.

Commands – you can Restore the ESC to factory settings, helpful to trouble shoot. Read/Write to the two (2) user profiles.

Help – you can access all help information.

General TAB Information

Battery Type –Select NiMH, or Lithium-Ion/Lithium Polymer batteries

Cutoff Voltage – This is a critical option to understand and used to protect Lithium or M1 batteries from being over-discharged, which will shorten the life, cause damage to the battery, or even result in Fire or Personal Injury.

When using **NiMH batteries** you do not need to set a cutoff voltage to protect the batteries. NiMH batteries typically stop operating your vehicle before any damage occurs. If you are using more than 6-cell NiMH batteries, you must adjust the cutoff voltage, for example if you are using an 8-cell pack of NiMH batteries you would use a cutoff of 5.6V volts (8 x 0.7V = 5.6V). If you are using fewer cells of NiMH batteries, a cutoff voltage of 4.0V will provide power for your radio system to operate and reduce the chance of losing control.

- **No Cutoff**   The choice for racing used along with quality NiMH battery packs.
- **Customize Voltage Cutoff** (for NiMH Batteries) you can select a cutoff voltage of 4, 5, 6, 9, 12 or 15 volts. Then using the up/down to the right of the voltage you can increase the voltage stepping up 0.1V between the selectable settings. Following the above example for an 8-cell NiMH battery, you would select 5.0V and then increase 6 steps up to 5.6V.

DO NOT USE the above setting with any type of Lithium battery pack

When using any **Lithium or M1 (A123) batteries,** they must not be discharged to less than 3.0V per cell.

- **No Cutoff** The choice is not available and NOT recommended when using any type of Lithium battery.
- **Customize Voltage Cutoff** (for Lithium Batteries) after selecting the number of cells (2 thru 5) the default voltage is displayed. For example, you select a 2S battery; the default cutoff voltage will be 6.0V (# of cells multiply by 3.0V). You may raise this to protect your expensive batteries in 0.1V increments up to 7.0V. For 4S, the default cutoff is 12.0V and you may increase these values but NOT decrease.

Brake/Reverse – This is only to determine if reverse is to be enabled or not.

You will find in racing, most tracks will not allow racing with reverse enabled.

- **Forward w/o Reverse: (DEFAULT)**

This is a Race setting - Reverse is disabled.

- **Forward with pause then Reverse**

General bashing around (FUN) or racing if reverse is allowed for the event. The Electronic Speed Control requires 2 seconds of continuous neutral from the transmitter prior to allowing reverse to operate.

Throttle Limit – Use this to limit the power available using forward throttle. The lower the percent the less forward throttle speed will be available.

(Default)
- **0%**   100% of forward speed
- **10%**   90% of forward speed
- **20%**   80% of forward speed
- **30%**   70% of forward speed
- **40%**   60% of forward speed
- **50%**   50% of forward speed
- **60%**   40% of forward speed
- **70%**   30% of forward speed
- **80%**   20% of forward speed
- **90%**   10% of forward speed

Reverse Throttle Limit - Use this to limit the power available using reverse throttle. The lower the percent or level the less speed will be available in reverse.

- **10%**   10% of reverse speed
- **20%**   20% of reverse speed
- **30%**   30% of reverse speed
- **40%**   40% of reverse speed
(Default)
- **50%**   50% of reverse speed
- **60%**   60% of reverse speed
- **70%**   70% of reverse speed
- **80%**   80% of reverse speed
- **90%**   90% of reverse speed
- **100%**   100% of reverse speed

Motor Timing - This option affects the power band and efficiency (run time) of an electric motor. The default is "Normal" and is a good starting point to deliver power and provide good run time.

- **Very Low** Provides power for running through soft surfaces, having fun and longer run time.

- **Low (Default)** Provide**s maximum** efficiency with less power. Higher timing produces significantly more power but at the expense of efficiency (less run time) and typically the motor will generate more heat. Each brushless motor will respond to timing differently. Good for running around on paved, or harder surfaces, and racing with high Kv rated or low-turn motors.

- **Normal** Good mix of power and efficiency using any motor.

- **High** More power than efficiency so run time will reduce, and you should be monitoring motor heat. The higher Kv or lower turn motors will generate heat quickly using this setting. A safe high temperature range is 165F to 180F (74° - 82° Celsius), going higher may damage your motor.

- **Very High** This is maximum power and must be used with **caution**.

- Any motor has the potential to over-heat in this setting. Frequently check the motor temperature and make sure you're not operating higher than 165° and 180° Fahrenheit (74° - 82° Celsius), which may damage your motor, or damage your Electronic Speed Control (ESC).

Initial Acceleration - Use this to limit the initial power that is sent to the motor when starting from a complete stop.

Using the LOW option, the vehicle will launch very slowly and provide the longest run times. When using the HIGH choice, you will have wheel-spinning acceleration at the cost of run time.

This is also very tough on the batteries as the amperage draw can be very high.

- **Low** Using this option will provide longer run times and is easiest on the batteries. It is a good choice for beginners.
- **Medium** Medium requires more from your batteries, and is good for low traction surfaces.
- **High** This option will provide full acceleration and requires stout batteries to supply the load required in this setting.

Braking Percent - Gives you the ability to have full control over the amount of brake your vehicle will have.

NOTE: Selecting the advanced function "BRAKE CURVE" and using this method to adjust the feel of the desired brake strength will override the "Braking Percent" parameter.

- **10%**   Effect will be 10% of full brakes
- **20%**   Effect will be 20% of full brakes.
- **30%**   Effect will be 30% of full brakes
- **40%**   Effect will be 40% of full brakes.
- **50%**   Effect will be 50% of full brakes

Percent Drag Brake – The drag brake function provides the driver a set percentage of brake when you have the transmitter resting in neutral. This will create the "feel" of a brushed motor.

Drag brake is used in racing to slow a vehicle as you let off approaching a corner versus the driver having to push the brake at every corner.

Try working with this to get a sense of how you might use this for your track.

If you are running on a high-traction track with tight corners, a stronger setting should work best.

If you are running in an open area, you will find a smaller percentage will result in better control.

If you are running in dusty or slippery surfaces, you will more than likely want to use the lowest option.

- **0%**
- **4% (Default)**
- **8%**
- **10%**
- **12%**
- **15%**
- **20%**
- **25%**
- **30%**

Note: Higher motor temperatures occur with each increase in Drag Brakes.

Battery Elimination Circuit (BEC) – Can be adjusted to provide any of the following voltages thru the receiver to the radio system. Generally 6.0V is used to power the receiver and servo.

- **5.2V**
- **6.0V**
- **5.6V**
- **6.5V**

Legacy or 2.4GHz – This setting is intended to reflect what type of Radio System you are using, i.e. Transmitter and Receiver.

Default is **2.4GHz** because there are many of these systems in use.

If you use a Legacy system, then you can select this setting (27MHz, 40MHz, or 75MHz).

The Electronic Speed Control internal switching rate is increased with the 2.4GHz selection and may cause interference with Legacy Radio Systems.

Neutral Deadband – This setting adjusts the amount of Deadband off neutral on the throttle trigger. This is in milliseconds (MS) and is the amount of neutral when you pull the trigger.

The smaller the value the less Deadband or movement is required off-center for the ESC to begin throttle functions.

Using a higher value for this setting will provide a wider Deadband.

- **2**
- **3 (Default)**
- **4**
- **5**
- **6**

Reverse Rotation – If you would like to change the direction of the motor without changing any wiring, then select or de-select this box.

This will be useful for applications where removing the motor wiring is impractical or difficult.

Throttle TAB information

Setting Throttle Profile – You can select either Linear (Default) or Curve. Using Curve will activate changes you may have made to the left for the throttle profile.

Using the Left Mouse Button, you may click to select a point on the throttle line and drag it into the desired position. Generally, movement to the upper left will cause accelerated throttle action, and movement to the lower right will slow (or delay) the throttle action.

Below is an example of a slow ramp up to full throttle versus the above linear graph.

Below is an example of an accelerated ramp up to full throttle.

Brake TAB Information

Setting Brake Profile – You can select either Linear (Default) or Curve. Using Curve will activate changes you may have made to the left for the throttle profile.

Using the Left Mouse Button, you may click to select a point on the throttle line and drag it into the desired position. Generally, movement to the upper left will cause accelerated braking action, and movement to the lower right will slow (or delay) the braking action.

Below is an example of a gradual increase in braking versus the above linear graph.

Below is an example of increase of braking action then leveling to full brake.

Xcelorin Sensorless Brushless ESC Specifications

Type: Sensorless Brushless ONLY

Cells w/BEC: 6-12 Cells (NiMH)/ 2S-5S (LiPo)

Auto Cutoff: Programmable

BEC Voltage: Programmable from 5.2V up to 6.5V at 6A

Forward: Y

Reverse: Y

Brake: Y

Continuous Maximum Current: 160A

Momentary Peak Current: 800A

Input Connector Types: Losi EC5 style

Motor Limit: Losi 8th scale 720 sensorless motors of 3000Kv or less

Dimensions (WxLxH): 2.40x2.56x1.80 in (61x65x46mm)

Weight: 5.5 oz (155 g)

Xcelorin Replacement Parts

LOSB9353	Heat Sink: 1/8 Xcelorin
LOSB9358	Rubber Grommets: 1/8 Xcelorin ESC
LOSB9359	Case and Hardware; 1/8 Xcelorin ESC
LOSB9363	Fan: 1/8 Xcelorin ESC
LOSB9364	Switch: 1/8 Xcelorin ESC
LOSB9368	Signal Wire: 1/8 Xcelorin ESC
LOSB9381	4mm Bullet Connector Set (2)
LOSB9382	4mm Bullet Connector Male (2)
LOSB9383	4mm Bullet Connector Female (2)
LOSB9384	Preassembled Battery Lead w/EC5 Connector
LOSB9385	Pre-Assembled Motor Leads: 1/8 Xcelorin
LOSB9620	EC5 Device Connector (2)
LOSB9621	EC5 Battery Connector (2)
LOSB9622	EC5 Device/Battery Connector Set

Warranty

Warranty Period

Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warranties that the Products purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase by the Purchaser.

Limited Warranty

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE

REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits:

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.   Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this Product immediately in new and unused condition to the place of purchase.

Law: These Terms are governed by Illinois law (without regard to conflict of law principals).

Safety Precautions:

This is a sophisticated hobby Product and not a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the Product or other property. This Product is not intended for use by children without direct adult supervision. The Product manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or injury.

Questions, Assistance, and Repairs:

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please direct your email to

productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to a service technician.

Inspection or Repairs

If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as **Horizon is not responsible for merchandise until it arrives and is accepted at our facility**. A Service Repair Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions

have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by warranty the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. **Please note: non-warranty repair is only available on electronics and model engines.**

United States:
Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other Products requiring warranty inspection or repair should be shipped to the following address:

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

Please call 877-504-0233 or e-mail us at productsupport@horizonhobby.com with any questions or concerns regarding this product or warranty.

United Kingdom:
Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Hobby UK
Units 1-4 Ployters Rd
Staple Tye
Harlow, Essex
CM18 7NS
United Kingdom

Please call +44 1279 641 097 or e-mail us at <u>sales@horizonhobby.co.uk</u> with any questions or concerns regarding this product or warranty.

Instructions for Disposal of WEEE by Users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to as designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

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