Visite la página TRAXXAS.com/manuals para descargar el instructiones en su idioma.

Auf TRAXXAS.com/manuals können Sie anleitung in Ihrer Sprache downloaden.

VXL-3m Electronic Speed Control Instructions

Covers Parts #3375, 3370

Thank you for purchasing the Traxxas VXL-3m™ electronic speed control. The Velineon™ VXL-3m forward/reverse electronic speed control simplifies brushless technology with easy, built-in profiles and intuitive programming. The VXL-3m uses advanced circuit design that allows sensorless brushless motors to operate with the smoothness and precision of the best brushed systems. The VXL-3m comes with the peace-of-mind of the Traxxas Lifetime Electronics Warranty and unmatched Traxxas customer support. The VXL-3m is not a toy. It is a sophisticated electronic device capable of delivering large amounts of current. Children under 14 years of age require adult supervision for use of the VXL-3m. If you have questions or need assistance call us at 1-888-TRAXXAS.

Specifications:

Input Voltage	6 to 12 cells NiMH, 2S to 3S LiPo
Motors	Sensorless Brushless
Motor Limit	None
Continuous Current	52A
Peak Current	326A
BEC Voltage	6.0 volts DC
Transistor Type	MOSFET
On-Resistance	0.0005Ω
PWM Frequency	12,000Hz
Battery Connector	Traxxas High-Current Connector
Motor Connectors	TRX 3.5mm Bullet Connectors
Motor / Battery Wiring	16-Gauge
Thermal Protection	Two-Stage Thermal shutdown
Weight	38g (1.34 oz)

Profiles: **Sport Mode (Profile 1)** - 100% Forward, 100% Brakes, 100% Reverse
Race Mode (Profile 2) - 100% Forward, 100% Brakes, No Reverse
Training Mode™ (Profile 3) - 50% Forward, 100% Brakes, 50% Reverse

Important Precautions

VXL-3m Speed Control

- **Water and Electronics Do Not Mix**: Your VXL-3m brushless power system is waterproof for use in mud, snow, puddles and other wet conditions. Make certain the other components of your model are waterproof or have sufficient water resistance before driving in wet conditions.
- **Disconnect the Batteries**: Always disconnect the battery pack from the speed control when not in use.
- **Transmitter on First**: Switch on your transmitter first before switching on the speed control to prevent runaways and erratic performance.
- **Don't Get Burned**: The heat sink can get extremely hot, so be careful not to touch it until it is cool. Supply adequate airflow for cooling.
- **Use Stock Connectors**: If you decide to change the battery or motor connectors, only change one battery or motor connector at a time. This will prevent damage from accidentally mis-wiring the speed control. Please note that modified speed controls can be subject to a rewiring fee when returned for service. Removing the battery connector on the speed control or using the same-gender connectors on the speed control will void the product's warranty.
- **Insulate the Wires**: Always insulate exposed or damaged wiring with heat shrink tubing to prevent short circuits

Batteries and Battery Charging

The Velineon Power System uses rechargeable batteries that must be handled with care for safety and long battery life. Make sure to read and follow all instructions and precautions that were provided with your battery packs and your charger. It is your responsibility to charge and care for your battery backs properly. In addition to your battery and charger instructions, here are some more tips to keep in mind.

- Never leave batteries to charge unattended.
- Remove the batteries from the model while charging.
- Allow the battery packs to cool off between runs (before charging).
- Always unplug the battery from the electronic speed control when the model is not in use and when it is being stored or transported.
- Do not use battery packs that have been damaged in any way.
- Do not use battery packs that have damaged wiring, exposed wiring, or a damaged connector.
- Children should have responsible adult supervision when charging and handling batteries.

LiPo Batteries

Lithium Polymer (LiPo) batteries are becoming popular for use in R/C models due to their compact size, high energy density, and high-current output. However, these types of batteries require special care and handling procedures for long life and safe operation. **Warning:** LiPo batteries are intended only for advanced users that are educated on the risks associated with LiPo battery use. **Traxxas does not recommend that anyone under the age of 16 use or handle LiPo battery packs without the supervision of a knowledgeable and responsible adult.**

The VXL-3m electronic speed control is able to use LiPo batteries with nominal voltage not to exceed 11.1 volts (3S packs). LiPo batteries have a minimum safe discharge voltage threshold that should not be exceeded. The Velineon VXL-3m electronic speed control is equipped with built-in Low-Voltage Detection that alerts the driver when LiPo batteries have reached their minimum voltage (discharge) threshold. **It is the driver's responsibility to stop immediately to prevent the battery pack from being discharged below its safe minimum threshold.**

Low-Voltage Detection on the speed control is just one part of a comprehensive plan for safe LiPo battery use. **It is critical for you, the user, to follow all other instructions supplied by the battery manufacturer and the charger manufacturer for proper charging, use, and storage of LiPo batteries.** Make sure you understand how to use your LiPo batteries. Be aware that Traxxas shall not be liable for any special, indirect, incidental, or consequential damages arising out of the installation and/or use of LiPo batteries in Traxxas products.

If you have questions about LiPo battery usage, please consult with your local hobby dealer or contact the battery manufacturer.

Installation

The VXL-3m uses a special case design that allows it to slide into the chassis of the 1/16 E-Revo VXL and 1/16 Slash VXL 4WD models. To mount the VXL-3m speed control in non-Traxxas models, double-sided servo tape may be used to secure the speed control.

Here are some tips for choosing a location for the speed control:

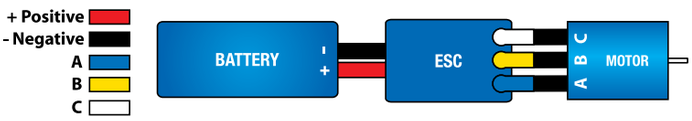
- The VXL-3m does not use a conventional on/off switch. Pressing the EZ-Set button on the speed control turns it on and off. It is not necessary to install an on/off switch into the wiring harness.
- If you are planning to operate the speed control at the higher limits of its capabilities, cut ventilation holes into the body for the heat sinks. Monitoring temperatures will extend the lives of the batteries and motors and proper ventilation and cooling will prevent premature thermal shutdown.
- Mount the speed control where it will be protected from crash damage. Also protect the speed control from dirt and debris kicked up by the tires.
- Mount the speed control where you will have easy access to the plugs and the on/off (EZ-Set) button without having to remove the body.
- Mount the speed control so that none of the power components (wiring, motor, ESC) contacts any part of the radio system, particularly the antenna wire.

VXL-3m Wiring

The VXL-3m electronic speed control is capable of controlling sensorless brushless and sendored brushless motors.

Sensorless brushless motors

Sensorless motors are the easiest and most reliable brushless motor type. The VXL-3m is optimized to deliver the smoothest possible sensorless motor performance. The Velineon 380 is a sensorless brushless motor. The wiring (phase alignment) of the motor determines its direction of rotation. Refer to the wiring diagram below.



Sensored brushless motors

The VXL-3m is compatible with sensored brushless motors, but does not use the sensor harness. install the motor and connect the motor's power wires as shown above. If the motor's sensor harness is not removeable, be sure secure the harness away from any of the car's moving parts.

Transmitter Setup

Traxxas TQ Radio Systems

Before attempting to program your VXL-3m, it is important to make sure your TQ transmitter is properly adjusted (set back to the factory defaults). Otherwise, you may not get the best performance from your speed control.

The transmitter should be adjusted as follows:

1. Set the throttle neutral switch to the 50/50 setting. This adjusts the transmitter's throttle trigger throw to 50% for throttle and 50% for braking and reverse. Experienced users may wish to use the 70/30 setting if more broad proportional control is desired in forward than with braking and reverse. This might be desirable in a racing environment where reverse is disabled.
2. Set the throttle trim control to the middle "0" setting.
3. Set the Channel 2 servo reversing switch to the left position. Do not change the position of any of the servo reversing switches after programming the VXL-3m.
4. You are now ready to program your speed control.

Aftermarket (Non-Traxxas) Transmitters

The following instructions are provided as a general reference only for those who are using non-Traxxas transmitters. Consult your transmitter's instructions for information on how to change the settings.

1. Set the High ATV (adjustable travel volume) or EPA (end point adjustment) to the maximum setting. This is the amount of servo throw at full throttle.
2. Set the Low ATV, EPA or ATL (low side only trim adjustment) to the maximum setting. This is the amount of servo throw at full brakes or reverse.
3. Set the throttle trim to the middle (neutral setting).
4. Set the throttle channel reversing switch to either position. Do not change the switch position after programming.
5. Set the trigger throw adjustment to 50% throttle and 50% brake (either mechanical or electronic).
6. Set the exponential setting (if equipped) to the zero or fully linear setting.

Aftermarket Receivers

The VXL-3m is compatible with most aftermarket receivers. By removing the tab on the edge of the power connector, the VXL-3m can be plugged directly into some models of Futaba,® Airtronics,® Hitec,® and JR® receivers. Please refer to the manufacturer's wiring diagrams that came with your receiver. On the VXL-3m, the red wire is positive, the black wire is negative, and the white wire is the control wire. **Warning**: On some older Airtronics® radio systems, the positive and negative terminals are opposite of the VXL-3m and an adapter is required. Crossing the red (+) and black (-) wires could damage the receiver and the VXL-3m. Study the manufacturer's wiring diagrams closely, or consult your hobby dealer.

Low-Voltage Detection Setting

The VXL-3m ESC is equipped with built-in Low Voltage Detection **for safe use with Lithium Polymer (LiPo) batteries.** The Low Voltage Detection circuitry constantly monitors the battery voltage. When the battery voltage begins to reach the minimum recommended discharge voltage threshold for LiPo battery packs, the VXL-3m will limit the power output to 50% throttle. When the battery voltage attempts to fall below the minimum threshold, the VXL-3m will shut down all motor output. The LED on the speed control will slowly blink red, indicating a low voltage shutdown. The VXL-3m will stay in this mode until a

Traxxas, 6250 Traxxas Way, McKinney, TX 75070, Phone: 972-549-3000, Fax: 972-549-3011, e-mail: support@Traxxas.com

KC1684-R02 Rev 151207

fully charged battery is connected. The electronic speed control is factory set with Low Voltage Detection turned off. Be certain to activate Low Voltage Detection if you install LiPo batteries in your model.

To turn Low Voltage Detection on (LiPo setting):
1. Make sure the LED on the ESC is on and red.
2. Press and hold the EZ-Set button for ten seconds. The LED will turn off and then light green. Also, a "rising" musical tone will be emitted from the motor.
3. Low Voltage Detection is now ON.

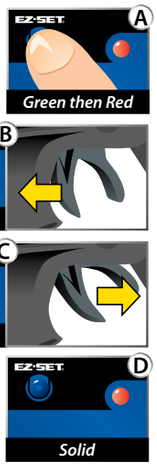
To turn Low Voltage Detection off (NiMH setting):
1. Make sure the LED on the ESC is on and green.
2. Press and hold the EZ-Set button for ten seconds. The LED will turn off and then light red. Also, a "falling" musical tone will be emitted from the motor.
3. Low Voltage Detection is now OFF.

Never use LiPo batteries while Low Voltage Detection is turned off.

VXL-3m Setup Programming (Calibrating your ESC and transmitter)

Read through all of the following programming steps before you begin. If you get lost during programming or receive unexpected results, simply unplug the battery, wait a few seconds, plug the battery back in, and start over.

1. Disconnect each of the motor wires between the ESC and the motor. This is a precaution to prevent runaway when the speed control is turned on before it is programmed.
2. Connect a fully charged battery pack to the ESC.
3. Turn on the transmitter (with the throttle at neutral).
4. Press and hold the EZ-Set button (A). The LED will first turn green and then red. Release the EZ-Set button.
5. When the LED blinks RED ONCE. Pull the throttle trigger to the full throttle position and hold it there (B).
6. When the LED blinks RED TWICE. Push the throttle trigger to the full reverse and hold it there (C).
7. When the LED starts flashing GREEN, programming is complete. After the throttle is returned to neutral, the LED will then shine solid green or red (depending on the low-voltage detection setting, *see note below)* indicating the VXL-3m is on and at neutral (D).



VXL-3m Operation

Note: In steps 1-7 below, Low Voltage Detection is turned off (factory default) and the LED shines RED. If Low Voltage Detection is on, the LED will shine GREEN instead of RED in steps 1-7 below.

To operate the speed control and test the programming, place the vehicle on a stable block or stand so all of the driven wheels are off the ground. Reconnect the motor wires. Always make sure that objects and fingers are clear of the wheels.

1. With the transmitter on, press the EZ-Set button for ½ second, until the LED shines GREEN, then immediately release the button. This turns on the ESC. If you press and release too quickly, you may hear the steering servos jump but the LED may not stay on.
2. Apply forward throttle. The LED will turn off until full throttle power is reached. At full throttle, the led will shine RED.
3. Move the trigger forward to apply the brakes. Note that braking control is fully proportional. The LED will turn off until full braking power is reached. At full brakes, the LED will shine RED.
4. Return the throttle trigger to neutral. The LED will shine RED.
5. Move the throttle trigger forward again to engage reverse (Profile #1). The LED will turn off. Once full reverse power is reached, the LED will shine RED.
6. To stop, return the throttle trigger to neutral.
7. To turn the ESC off, press the EZ-Set button until the RED LED turns off.

VXL-3m Thermal Shutdown Protection

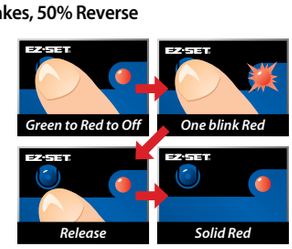
The VXL-3m is also equipped with thermal shutdown protection. If the operating temperature exceeds safe limits, the ESC will reduce power to 50% and the LED will flash red. Additional heating will cause the speed control to shut down completely until it reaches a safe operating temperature. Traxxas encourages you to stop driving as soon as the thermal overload protection is activated.

VXL-3m Profile Selection

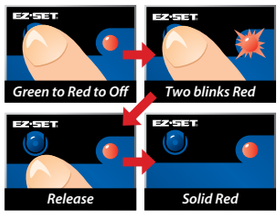
The speed control is factory set to Profile #1. To change the profile, follow the steps below. The speed control should be connected to the receiver and battery, and the transmitter should be adjusted as described previously. The profiles are selected by entering the programming mode.

ESC Profile Description
Profile #1 (Sport Mode): 100% Forward, 100% Brakes, 100% Reverse
Profile #2 (Race Mode): 100% Forward, 100% Brakes, No Reverse
Profile #3 (Training Mode): 50% Forward, 100% Brakes, 50% Reverse

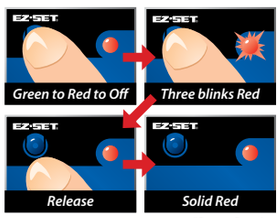
Selecting Sport Mode (Profile #1)
1. Connect a fully charged battery pack to the ESC and turn on your transmitter.
2. With the ESC off, press and hold the EZ-Set button until the light turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the light blinks red once, release the EZ-Set button.
4. The light will then turn red and the model is ready to drive.



Selecting Race Mode (Profile #2)
1. Connect a fully charged battery pack to the ESC and turn on your transmitter.
2. With the ESC off, press and hold the EZ-Set button until the light turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the light blinks red twice, release the EZ-Set button.
4. The light will then turn red and the model is ready to drive.



Selecting Training Mode* (Profile #3)
1. Connect a fully charged battery pack to the ESC and turn on your transmitter.
2. With the ESC off, press and hold the EZ-Set button until the light turns solid green, then solid red and then begins blinking red (indicating the Profile numbers).
3. When the light blinks red three times, release the EZ-Set button.
4. The light will then turn red and the model is ready to drive.



*Patent Pending

Note: If you missed the mode you wanted, keep the EZ-Set button pressed down and the blink cycle will repeat until a Mode is selected.

Traxxas High Current Connector

Your VXL-3m is equipped with the Traxxas High-Current Connector. Standard connectors restrict current flow and are not capable of delivering the power needed to maximize the output of the VXL-3m. The Traxxas connector's gold-plated terminals with a large contact surfaces ensure positive current flow with the least amount of resistance. Secure, long-lasting, and easy to grip, the Traxxas connector is engineered to extract all the power your battery has to give.

To run this system, your batteries must be equipped with Traxxas High-Current Connectors. Batteries can either be purchased new with Traxxas connectors installed or Traxxas connectors can be purchased to install on battery packs you already own.

VXL-3m Warranty Information

Traxxas warrants your Traxxas electronic component to be free from defects in materials or workmanship for a period of thirty (30) days from the date of purchase. Before returning any product for warranty service, please contact our service department (**1-888-TRAXXAS**)* to discuss the problem you are having with the product. After contacting Traxxas, send the defective unit along with your proof of purchase indicating the date purchased, your return address, e-mail, a daytime phone number, and a brief description of the problem to:

Traxxas
6200 Traxxas Way
McKinney, TX 75070

If the component is found to be defective, it will be repaired or replaced at no charge.
The warranty does not cover damage caused by the following:
- Allowing foreign material to enter speed control or get onto PC board.
- Using other than 6 to 12-cells NiMH or 2S to 3S LiPo input voltage.
- Removing the stock battery connectors.
- Using the same gender connectors on the speed control's motor and battery connections.
- Cross-connection of the battery/motor(s).
- Reverse voltage application.
- Incorrect installation or wiring.
- Components worn by use.
- Short-circuiting the heat sinks.
- Use without the heat sinks.
- Splices to the input wire harness.
- Disassembling the case.
- Excessive force when using the EZ-Set button.
- Tampering with the internal electronics.
- Incorrect wiring of an FET servo.
- Allowing exposed wiring to short-circuit.
- Any damage caused by crash, flooding, or act of God.

In no case shall our liability exceed the product's original cost.
We reserve the right to modify warranty provisions without notice. All warranty claims will be handled by Traxxas. Because Traxxas has no control over the use and future installations of the VXL-3m, no liability may be assumed nor will be accepted for damage resulting from the use of this product. Every ESC is thoroughly tested and cycled before leaving the Traxxas facility and is, therefore, considered operational. By the act of operating/connecting speed control, the user accepts all resulting liability. Traxxas makes no other warranties expressed or implied. This warranty gives you specific legal rights which vary from state to state. After the expiration of the standard 30-day warranty, use the Traxxas Lifetime Electronics Warranty to cover service and repairs. Documents and forms are provided with your VXL-3m.

VXL-3m LED codes

Solid Green: VXL-3m power on light. Low Voltage Detection is ON (LiPo setting).

Solid Red: VXL-3m power on light. Low Voltage Detection is OFF (NiCad/NiMH setting).

Fast Blinking Red: Thermal Shutdown Protection Stage 1. If the motor has lower than normal power and the VXL-3m is hot, the VXL-3m has entered Stage 1 Thermal Shutdown Protection to guard against overheating caused by excessive current flow. If the motor has no power and the VXL-3m is very hot, the VXL-3m has entered Stage 2 Thermal Shutdown Protection and has automatically shut down. Let the VXL-3m cool. Make sure your model is properly geared for the conditions.

Slow Blinking Red *(with Low Voltage Detection on)*: The VXL-3m has entered Low Voltage Protection. When the battery voltage begins to reach the minimum recommended discharge voltage threshold for LiPo battery packs, the VXL-3m will limit the power output to 50% throttle. When the battery voltage attempts to fall below the minimum threshold, the VXL-3m will shut down all motor output. The LED on the speed control will slowly blink red, indicating a low voltage shutdown. The VXL-3m will stay in this mode until a fully charged battery is connected.

Alternating; Blinks Red then Green: If the motor has no power, the VXL-3m has entered Over Voltage Protection. If a battery with too high voltage is used, the VXL-3m will go into a failsafe mode. **Warning**: If input voltage exceeds approximately 20 volts, the ESC may be damaged. Maximum peak input voltage limits are 12.6V in LiPo Mode and 18V in NiMH Mode.

Blinking Green: The VXL-3m is indicating the transmitter Throttle Trim is incorrectly set. Adjust the Throttle Trim to the middle "0" setting.

If you have questions or need technical assistance, call Traxxas at

1-888-TRAXXAS

(1-888-872-9927) (U.S. residents only)

Traxxas, 6250 Traxxas Way, McKinney, TX 75070, Phone: 972-549-3000, Fax: 972-549-3011, e-mail: support@Traxxas.com