ECM-2.5 ELECTRONIC CONTROL MODULE

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ECM-2.5 Electronic Control Module Instructions

Covers Part #9785

WARNING! CAUTION! DANGER!

FIRE HAZARD!

The ECM-2.5™ electronic control module requires use of Lithium Polymer (LiPo) batteries with nominal voltage not to exceed 8.4 volts (2s packs). Charging and discharging batteries has the potential for fire, explosion, serious injury, and property damage if not performed per the instructions. In addition, LiPo batteries pose a SEVERE risk of fire if not properly handled per the instructions and require special care and handling procedures for long life and safe operation. 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 18 use or handle LiPo battery packs without the supervision of a knowledgeable and responsible adult. DO NOT attempt to charge or use LiPo batterires if you do not understand these warnings. Dispose of used batteries according to the instructions.

- LiPo batteries have a minimum safe discharge voltage threshold that should not be exceeded. The electronic control module (ECM) 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 is just one part of a comprehensive plan for safe LiPo battery use. It is critical to follow all instructions for safe and proper charging, use, and storage of LiPo batteries. Make sure you understand how to use your LiPo batteries. If you have questions about LiPo battery usage, please consult with your local hobby dealer or contact the battery manufacturer. As a reminder, all batteries should be recycled at the end of their useful life.
- ONLY use a Traxxas iD charger to charge Traxxas iD batteries. ONLY use a Lithium Polymer (LiPo) balance charger with a balance adapter port to charge LiPo batteries. Never use NiMH or NiCad-type chargers or charge modes to charge LiPo batteries. DO NOT charge LiPo batteries with a NiMH-only charger. The use of a NiMH or NiCad charger or charge mode will damage LiPo batteries and may cause fire, personal injury, and/or property damage.
- NEVER charge LiPo battery packs in series or parallel. Charging packs in series or parallel may result in improper charger cell recognition and an improper charging rate that may lead to overcharging, cell imbalance, cell damage, and fire.
- ALWAYS inspect your LiPo batteries carefully before charging. Look for any loose leads or connectors, damaged wire insulation, damaged cell packaging, impact damage, fluid leaks, swelling (a sign of internal damage), cell deformity, missing labels, or any other damage or irregularity. If any of these conditions are observed, do not charge or use the battery pack. Follow the disposal instructions included with your battery to properly and safely dispose of the battery.
- DO NOT store or charge LiPo batteries with or around other batteries or battery packs of any type, including other LiPos.
- Store and transport your battery pack(s) in a cool dry place. DO NOT store in direct sunlight. DO NOT allow the storage temperature to exceed 140°F or 60°C, such as in the trunk of a car, or the cells may be damaged and create a fire risk.
- DO NOT disassemble LiPo batteries or cells.
- DO NOT attempt to build your own LiPo battery pack from loose cells.
- BEFORE you charge, ALWAYS confirm that the charger settings exactly match the type (chemistry), specification, and configuration of the battery to be charged. DO NOT exceed the maximum manufacturer recommended charge rate.
- DO NOT attempt to charge non-rechargeable batteries (explosion hazard), batteries that have an internal charge circuit or a protection circuit, batteries that have been altered from original manufacturer configuration, or batteries that have missing or unreadable labels, preventing you from properly identifying the battery type and specifications. ALWAYS use a Traxxas iD charger to charge Traxxas iD batteries. DO NOT use a non-Traxxas charger to charge Traxxas iD batteries. It is not recommended, but if you choose to use a non-Traxxas charger or battery, read and follow all of the manufacturer's warnings and instructions.
- DO NOT let any exposed battery contacts or wires touch each other. This will cause the battery to short circuit and create the risk of fire.
- While charging or discharging, ALWAYS place the battery (all types of batteries) in a fire retardant/fire proof container and on a non-flammable surface such as concrete.
- DO NOT charge batteries inside of an automobile. DO NOT charge batteries while driving in an automobile.
- NEVER charge batteries on wood, cloth, carpet, or on any other flammable material.
- ALWAYS charge batteries in a well-ventilated area.
- REMOVE flammable items and combustible materials from the charging area.
- DO NOT leave the charger and battery unattended while charging, discharging, or anytime the charger is ON with a battery connected. If there are any signs of a malfunction or in the event of an emergency, unplug the charger from the power source and disconnect the battery from the charger.
- DO NOT operate the charger in a cluttered space, or place objects on top of the charger or battery.
- If any battery or battery cell is damaged in any way, DO NOT charge, discharge, or use the battery.
- Keep a Class D fire extinguisher nearby in case of fire.
- DO NOT disassemble, crush, short circuit, or expose the batteries to flame or other source of ignition. Toxic materials could be released. If eye or skin contact occurs, flush with water.
- If a battery gets hot to the touch during the charging process (temperature greater than 110°F / 43°C), immediately disconnect the battery from the charger and discontinue charging.
- Allow the battery pack to cool off between runs (before charging).
- ALWAYS unplug the charger and disconnect the battery when not in use.
- ALWAYS unplug the battery from the electronic control module (ECM) when the model is not in use and when it is being stored or transported.
- DO NOT disassemble the charger.
- REMOVE the battery from your model or device before charging.
- DO NOT expose the charger to water or moisture. For indoor use only.
- DO NOT use an adapter of any kind or modify or change the battery plug/connector.
- ALWAYS store battery packs safely out of the reach of children or pets. Children should always have adult supervision when charging and handling batteries.
- Always proceed with caution and use good common sense at all times.

Thank you for purchasing the Traxxas ECM-2.5™ electronic control module. The ECM-2.5 incorporates all the features of an XL-5™ speed control, TQ™ receiver, and Pro Scale® Lighting Control Module into one sleek waterproof package. ECM-2.5 features low voltage detection for 2s LiPo batteries and EZ-Set® one-button programming to select three realistic driving modes that deliver smooth, precise control and outstanding throttle response.

The ECM-2.5 comes with the peace-of-mind of the Traxxas Lifetime Electronics Warranty and unmatched Traxxas customer support. The ECM-2.5 is not a toy. It is a sophisticated electronic device capable of delivering large amounts of current. Children under 18 years of age require adult supervision for use of the ECM-2.5.

If you have questions or need assistance, call us at 1-888-TRAXXAS.*

Specifications:

Input voltage	2s LiPo (max. 8.4 volts)
Thermal protection	3-stage low voltage shutdown
Case size (l/w/h)	45.5mm (1.8")/ 31.9mm (1.25")/ 15.25mm (0.6")
Weight	XXg (XXoz)

Profile Selection:

Profile #1 (Sport Mode):	100% Forward, 100% Brakes, 100% Reverse
Profile #2 (Trail Mode):	100% Forward, 100% Brakes, 100% Reverse, 50% Hill Hold Brakes at Neutral
Profile #3 (Crawl Mode):	100% Forward, 100% Hill Hold Brakes at Neutral, Immediate Reverse

*U.S. Customers Only

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

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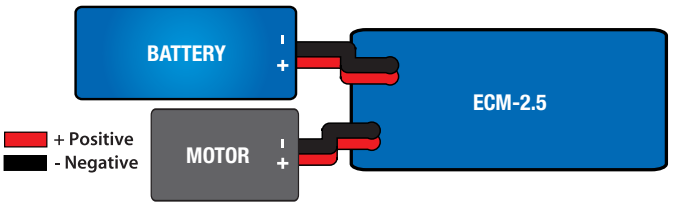
Important Precautions

Your model's electronic control module (ECM) is an extremely powerful electronic device capable of delivering high current. Please closely follow these precautions to prevent damage to the ECM or other components.

- **Disconnect the Battery:** Always disconnect the battery from the ECM when not in use.
- **Insulate the Wires:** Always insulate exposed wiring with heat shrink tubing to prevent short circuits.
- **Transmitter on First:** Switch on your transmitter first before connecting the battery to the ECM. Disconnect the battery before turning off the transmitter.
- **2 LiPo cells (2s) Only:** The ECM-2.5 can accept a maximum input voltage of 8.4 volts (LiPo).
- **Don't Get Burned:** The motor can become extremely hot during use, so be careful not to touch it until it cools. Supply adequate airflow for cooling.
- **Use the Factory-Installed Connectors:** Do not change the battery and motor connectors. Improper wiring can cause fire or damage to the ECM.
- **No Reverse Voltage:** The ECM is not protected against reverse polarity voltage.
- **Only** use the ECM with the #2821 Traxxas 2-cell LiPo iD® battery and #9775 Titan® 180 87-turn motor.

ECM-2.5 Wiring



Transmitter Setup

Traxxas TQ or TQi Radio Systems

Before attempting to program your ECM-2.5, it is important to make sure your transmitter is properly adjusted (set back to the factory defaults). Otherwise, you may not get the best performance from your electronic control module.

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.
2. Set the throttle trim control to the middle 0 setting.
3. You are now ready to program your control module.

Low Voltage Detection

The ECM-2.5 electronic control module is designed to operate on 2s LiPo battery power and is equipped with three-stage Low Voltage Detection (LVD). The Low Voltage Detection circuitry constantly monitors the battery voltage and alerts the driver when LiPo batteries have reached their minimum voltage (discharge) threshold. Stop immediately to prevent the battery pack from being discharged below its safe minimum threshold. Unplug the battery and recharge. Leaving the battery connected to the vehicle when not is use can cause permanent battery damage. **Always unplug the battery after use.**

LOW VOLTAGE DETECTION

STAGE	ECM LED	ECM	LIGHTS	EXPLANATION	ACTION
1	Slow blinking red	On	On	Vehicle speed reduced to 25%	Unplug the battery and recharge
2	Fast blinking red	On	On	Vehicle will not drive	Unplug the battery and recharge
3	Off	Off	Off	Stage 3 shutdown	Unplug the battery and recharge

ECM-2.5 Operation

To operate the control module and test programming, place the vehicle on a stable block or stand so that all of the drive wheels are off the ground.

1. With the transmitter on, plug a fully charged battery into the electronic control module to turn on the ECM-2.5. The LED will glow green.
2. Apply forward throttle. The LED will turn off until full throttle power is reached. At full throttle, the LED will glow green.
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 glow green.
4. Return the throttle trigger to neutral. The LED will glow green.
5. Move the throttle trigger forward again to engage reverse. The LED will turn off. Once full reverse power is reached, the LED will glow green.
6. Return the throttle trigger to neutral. (**Note:** There is programmed delay when changing from reverse to forward. This prevents damage to the transmission on high-traction surfaces.)
7. To turn the ECM-2.5 off, disconnect the battery.

ECM-2.5 Profile Selection

The ECM-2.5 electronic control module is factory set to Trail Mode (100% forward, brakes, and reverse; added brake drag when the throttle trigger is at neutral). To activate full power without the additional brake drag (Sport Mode) or set immediate reverse (Crawl Mode), follow these steps. The transmitter should be adjusted as described previously. The profiles are selected by entering the programming mode.

Profile Selection:

Profile #1 (Sport Mode): 100% Forward, 100% Brakes, 100% Reverse
Profile #2 (Trail Mode): 100% Forward, 100% Brakes, 100% Reverse, 50% Hill Hold Brakes at Neutral
Profile #3 (Crawl Mode): 100% Forward, 100% Hill Hold Brakes at Neutral, Immediate Reverse

Selecting Sport Mode (Profile #1: 100% Forward, 100% Brakes, 100% Reverse)

1. Connect a fully charged battery to the ECM-2.5 and turn on your transmitter. The LED will glow solid green.
2. Press and hold the EZ-Set button until the LED begins blinking red (indicating the Profile numbers).
3. When the LED blinks red once, release the EZ-Set button.
4. The LED will then turn solid green. The model is ready to drive.

Selecting Trail Mode (Profile #2: 100% Forward, 100% Brakes, 100% Reverse, 50% Hill Hold Brakes at Neutral)

1. Connect a fully charged battery to the ECM-2.5 and turn on your transmitter. The LED will glow solid green.
2. Press and hold the EZ-Set button until the LED begins blinking red (indicating the Profile numbers).
3. When the LED blinks red twice, release the EZ-Set button.
4. The LED will then turn solid green. The model is ready to drive.

Selecting Crawl Mode (Profile #3: 100% Forward, 100% Hill Hold Brakes at Neutral, Immediate Reverse)

1. Connect a fully charged battery to the ECM-2.5 and turn on your transmitter. The LED will glow solid green.
2. Press and hold the EZ-Set button until the LED begins blinking red (indicating the Profile numbers).
3. When the LED blinks red three times, release the EZ-Set button.
4. The LED will then turn solid green. The model is ready to drive.

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

Troubleshooting Guide

This guide describes possible control module problems, causes, and simple solutions. Check these items before contacting Traxxas.

Steering channel works, but the motor will not run:
- The control module is in Overcurrent Protection. Allow the control module to cool down. Check the drive train for binding or restrictions. To reset, disconnect and then reconnect the battery.
- Bad battery or motor. Check the operation with a known good battery (freshly charged) and motor.
- Possible internal damage. Return the ECM-2.5 to Traxxas for service.

Motor and steering servo do not work:
- Check the wires, radio system, battery and motor connectors.
- Possible internal damage; return the ECM-2.5 to Traxxas for service.

Motor runs as soon as the battery is plugged in:
- Internal damage; return ECM-2.5 to Traxxas for service.

ECM glitches/throttle stutters during acceleration:
- Check the motor and battery connectors.
- Bad battery or motor. Check the operation with a known good battery (freshly charged) and motor.
- Battery voltage low. Recharge and/or verify charged status.

Model runs slowly / slow acceleration:
- Check the motor and battery connectors.
- Check the drive train for binding or restrictions.
- Bad battery or motor. Check the operation with a known good battery and motor.
- ECM-2.5 has entered Low Voltage Protection.

ECM-2.5 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
6250 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 the control module
- Using other than 2s LiPo (max. 8.4 volts) input voltage
- Removing the stock battery connector
- Incorrect installation or wiring
- Components worn by use
- Splices to the input wire harness
- Disassembling the case
- Excessive force when using the EZ-Set button
- Tampering with the internal electronics
- 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 ECM-2.5, no liability may be assumed nor will be accepted for damage resulting from the use of this product. Every electronic control module is thoroughly tested and cycled before leaving the Traxxas facility and is, therefore, considered operational. By the act of operating/connecting the control module, 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.

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

1-888-TRAXXAS

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

*U.S. Customers Only