



Team Corally REVOC II XTR-160 Sensorless Motor Instruction Manual

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REVOC II XTR-160 Sensorless Motor

REVOC II XTR-160

INSTRUCTION MANUAL



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Introduction

The Team Corally REVOC II XTR-160 electronic speed controller for sensored and sensorless motors is being fine-tuned for today's high-power brushless motors. Everything can be set up on these controllers to provide you with the best functionality and performance. The REVOC II XTR-160 is manufactured with the highest grade components to ensure the lowest possible internal resistance resulting in optimized performance. These controllers give the competition racer what he needs. You will experience the best controllability of your RC car, no matter you use it in an on-road or off-road car.

Features

- For sensored and sensorless motors
- Manufactured with the highest grade components
- Ultra-compact design
- Aluminum case for improved heat dissipation
- Waterproof power switch
- Advanced boost & turbo timing system for improved acceleration performance
- Enhanced throttle & brake control function.
- 10 programmed profiles can be stored in the ESC
- High power 5A BEC
- Powerful TC Link software to test motor timing and advise the best ESC timing setting

Technical Specifications

Application	1/8 Off-Road & 1/8 On-Road
Cont. Current (A)	160A
Burst (A)	900A
N° of Li-roc Cells	2 – 6S
BEC	6V – 5A
Motor Type	Sensored & Sensodess
Motor Limits	2S – 4S Lipo = < IO/ 3000 • 4-6 Poles 2S – 6S Lipo = < VK 2200 • 2-4 Poles
Resistance	0.00020 ohm
Dimensions	60x42x38mm
Weight	117g

Safety Notes

- This ESC is not a toy and only suitable for users from age 14+
- Never allow water, moisture, oil, or other materials to get in contact with or inside the ESC, motor, or in contact with the PC Boards. It may damage the ESC completely.
- Never disassemble the ESC or modify the components on the PC board
- We strongly suggest using the original wires and connectors supplied in the ESC packaging
- Never run the ESC without load at full throttle. This may damage the motor bearings and other parts.
- Please select carefully the location of the ESC in your car. Ensure the ESC is mounted in a well-ventilated place and with good airflow so that the heat can dissipate quickly.
- To avoid short circuits, please keep the ESC connectors away from any metal parts.
- Never connect a battery with reversed polarity.
- Please remove the pinion from the motor before you start the calibration and programming of this ESC. Please keep hands, hair, clothes away from the moving gear train.
- Before you start the first testing and calibration of your ESC, make sure all cables and connectors are properly soldered. Keep cables away from all moving parts.
- Select carefully the correct motor timing. The incorrect motor timing will increase the temperature of your ESC and motor. Avoid overloading and overheating at anytime.
- Incorrect Boost and Turbo timing settings may cause permanent damage to the ESC and motor. please refer to the proper gear ratio and timing settings according to the motor specifications.
- Always switch on the transmitter first and arm then the ESC. To power off, switch off the ESC first and then the transmitter.
- Never use faulty or damaged accessories which may damage the ESC.
- Always insulate exposed wirings with heat shrink tubing or electrical insulation tape to prevent short- circuits. Short-circuits will damage the ESC.
- Always disconnect the battery pack from the ESC when not in use, to avoid any short-circuits and possible fire hazards. Even when the ESC is switched off, there is still a small current drain and this may cause a complete

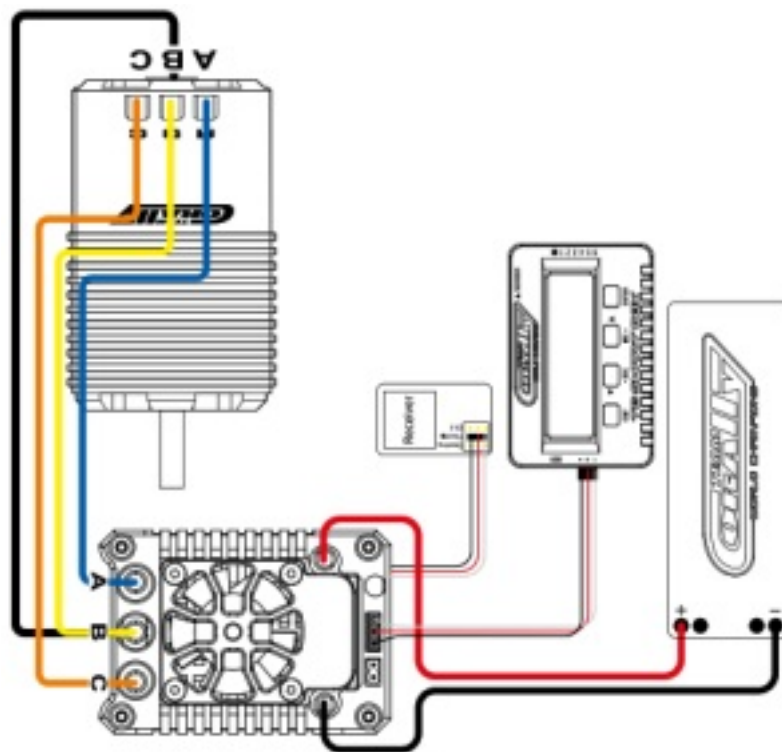
discharge of the battery after some period of time.

- Never use Ni-xx battery packs with more than 14 cells or Li-xx battery packs with more than 6 cells.

Team Corally can never be held responsible for any damage caused or related to non-compliance with the above instructions.

ESC Connection diagram

1. Solder the motor wires to the ESC.
 - Phase A from the motor to the A-phase connector of the ESC
 - Phase B from the motor to the B phase connector of the ESC
 - Phase C from the motor to the C phase connector of the ESC
2. Solder the battery wires to the ESC
 - Red = + (Positive) connector of the ESC
 - Black = – (Negative) connector of the ESC
3. Connect the motor sensor harness to the ESC. Insert the 6 pin connector into the ESC sensor connector.
4. Connect the throttle servo lead to the throttle channel of the Receiver



Soldering the wires

Cut the silicon power wires to the desired length and strip about 3 to 6mm of insulation from the end.

Pre-Tin the wire by heating the ends and applying good quality solder until the ends are covered in solder.

Never solder parts to the ESC for more than 5 seconds as some components will come loose or get damaged by the high soldering temperature.

ESC Installation

Choose a location in the car for the ESC where the ESC is most protected from dust and moisture. To prevent radio interference, place the ESC as far as possible away from the receiver and keep all power wires as short as possible. Select also a location that has a good airflow for optimized ventilation. The cooler the ESC remains, the higher the efficiency. Use double-sided tape to mount the ESC. Never use glue.

ESC Calibration

The ESC must be calibrated when it is connected for the first time with a new transmitter. The different brands of transmitters have individual signals for full throttle, full brake, and neutral position. The calibration of the ESC guarantees the ESC works properly with your transmitter.

How to calibrate the ESC?

- ESC is switched-off
- Connect the ESC to the battery
- Switch-on the transmitter
- Press and hold the ESC on/off switch for a few seconds, the ESC will ring a long beep once. Afterward, the LED will blink RED and the ESC will ring like beep – beep -beep in a row indicating it is ready to set the transmitters input signals for the neutral position, full throttle, and full brake step by step. You can release the ESC on/off switch now.
- Keep the throttle trigger of the transmitter in a neutral position, press the ESC on/off to switch once (1X), the LED will blink GREEN once (1X) and the ESC will ring beep once (1X) which indicates the neutral position is being set and recorded.



- Keep the throttle trigger of the transmitter in full throttle position, press the ESC on/off to switch once (1X), the LED will blink GREEN twice (2X) and the ESC will ring beep twice “beep – beep” (2X) which indicates the full throttle position is being set and recorded.



- Keep the throttle trigger of the transmitter in full brake position, press the ESC on/off switch once (1X), the LED will blink GREEN three times (3X), and the ESC will ring beep three times “beep-beep-beep” (3X) which indicates the full brake position is being set and recorded.



- After the calibration is finished, keep the throttle trigger of the transmitter in a neutral position, the LED will illuminate RED. The ESC and motor is set and ready.

ESC ON/OFF

When the ESC is OFF, press the on/off switch once. The ESC will beep once and the LED will blink RED.

When the ESC is on, press and hold the switch for 1 second, the LED will extinguish and the ESC is OFF.

Important;

- After running at full load, the ESC can be very hot. In this case, only turn off the ESC after it cooled down.
- When the motor is running, the ESC can not be powered off by pressing the on/off switch. Only when the motor stopped running, the ESC can be powered off. In an emergency, just disconnect the battery power.
- When the motor is running, you can also keep the throttle trigger of the transmitter to full brake position for 8 seconds, the ESC will turn off automatically.

ESC LED indication

Throttle trigger in a NEUTRAL position	Led is BLINK
The motor is running while the throttle trigger is not moved to the highest throttle/brake position	Led is BLINK
The motor is running while the throttle trigger is moved to the highest throttle/brake position	Led is continuous

ESC programming

The ESC can be programmed by the TC Smart Box or by the PC using the TC Wif-Fi module.

Programmable Settings

Section	Program Item	Description			
	Running Mode	Forward / Brake • Forward / Brake / Reverse • Forward / Reverse			
	Motor Direction	Normal	Reverse		
	ESC Overheat Protection	85°C / 185°F	105°C / 221°F	125°C / 257°F	Disable
	Motor Overheat Protection	85°C / 185°F	105°C / 221°F	125°C / 257°F	Disable
	BEC Voltage	6.O V			
	Reverse Speed	25% – 100% • 1% Increments			
	Voltage Cut-Off	6.OV – 25.0V • 0.1V Increments		Auto Cut-Of • 3.2V Cells	
Throttle Settings	Throttle Input Curve	Linear		Custom	
	Punch Rate Switch Point	1% – 99% • 1% Increments			
	1st Stage Punch Rate	1 – 30.1 Increments			
	2nd Stage Punch Rate	1 – 30.1 Increments			
	Throttle Dead Band	0.002 – 0.150ms			
Brake Settings	Brake Input Curve	Linear		I Custom	
	Drag Brake	0% – 99% • 1% Increments			
	Brake Strength	0% – 99% • 1% Increments			
	Initial Brake	= Drag Brake		1 0% – 50% • 1% Increments	
	Brake Rate Switch Point	1% – 99% • 1% Increments			
	1st Stage Brake Rate	1 – 20.1 Increments			
	2nd Stage Brake Rate	1 – 20.1 Increments			
Turbo Timing Settings	Turbo Timing	0 deg° -15 deg° • 1° Increment			
	Turbo Activation Method	Full Throttle I	Rpm	I Full Throttle + Rpm	
	Turbo Full Throttle Delay	0.05 – 1.00 Sec • 0.01 Sec Increments			
	Turbo Engage Slope	1 deg°/0.1S – 64 deg°/0.1S° • 1° Increment			

Important;

If you set the cut-off voltage manually, please note the adjustable voltage is the TOTAL cut-off voltage of the battery pack. In AUTO mode, the default cut-off voltage is 3.2V per cell.

- The output power of the motor will be improved when you adjust the motor timing. Electronic motor timing will increase the temperatures of ESC and the motor. Please be careful when setting up and testing your application to avoid overloading and overheating. Incorrect Boost and Turbo timing settings may cause permanent damage to the ESC and motors.
- The program items and setting selections vary due to different programming methods.

Profiles Preset

10 Sets of profiles can be programmed and stored in the ESC. The factory default settings are all MODIFY preset which can be used for modified class racing. The racer can pre-program 10 different sets of profiles according to his needs and the data can be called out at any time without any extra special programming.

Profile One (1) Setting Values (Default)

For 1/8 Off-Road, Sensored motor TC Dynotorq 815-4P 2350KV 4S Lipo

Section	Program Item	Description
	Running Mode	Forward / Brake
	Motor Direction	Normal
	ESC Overheat Protection	105°C / 221°F
	Motor Overheat Protection	105°C / 221°F
	Reverse Speed	25%
	Voltage Cut-Off	Auto Cul-Off • 3.2V Cell
H	Throttle Input Curve	U11801
	Punch Rate Switch Point	50%
	1st Stage Punch Rate	3
	2nd Stage Punch Rate	3
	Throttle Dead Band	0.080ms
	Throttle Status	
Brake Settings	Brake Input Curve	Linea
	Drag Brake	10%
	Brake Strength	75%
	Initial Brake	Drag Brake
	Brake Rate Switch Point	50%
	1st Stage Brake Rate	10
	2nd Stage Brake Rate	16
Turbo Tuning Settings	Turbo Timing	0°
	Turbo Delay	0.10 Sec
	Turbo Start RPM	20.000 Rpm
	Turbo Engage Slope	15° / 0.1Sec

Trouble Shooting

Problem	Cause	Solution
ESC sounds like B-8-8-...	It signals Iran transmitter	Check the siren *e. corrector and transrritter
ESC sounds tike B8-68-5B-...	Low voltage protection	Change battery
ESC sounds like BBB-868-588-...	ESC overheat protection	1.Add ESC or Motor cooling fan 2.Let ESC cool down 3 Reset the ESC temperatwe overheat Prot ection
ESC sounds tike BEIBEI-138155-58138-...	Motor overheat protectio n	1.Add ESC or Motor cooling fan 2.Let ESC cod down 3.Reset the motor temperature overheat pro tection
ESC/Motor protection occurs even th e temperature overheat protection is set at 125°C! 257°F	The power system is ove r-loaded die to over gear ratio. over motor Rpm or over timing settings	1.Adjust the gear ratio 2.Change Motor 3.Reset the timing

Warranty and Service

If material defects or manufacturing faults should arise in a product distributed or manufactured by Team Corally, a division of JSP Group Intl BVBA, and purchased by a consumer, we Team Corally acknowledge the obligation to correct those faults or defects within the limitations described below. This manufacturer's warranty is in addition to, and does not affect, the legal or contractual rights of the consumer which arise from the purchase of such products. Team Corally guarantees the consumer that its products are free from material, manufacturing, and construction faults, as determined by the general state of knowledge and technology valid at the time of manufacturing. The fault responsible for causing the damage must be proven to have been present in the product at this time. Claims for compensation arising from consequential damage or product liability will not be considered valid unless they fall under peremptory provisions of the law. If material defects or manufacturing faults should arise in a product distributed or manufactured by Team Corally in the European Community (EC) and purchased by a consumer, then Team Corally undertakes to correct those defects within the limitations described below. This manufacturer's declaration does not affect the consumer's legal or contractual rights regarding defects arising from the purchase contract between the consumer and the dealer or reseller.

Extend of the Warranty

If a claim is made under warranty, we take at our discretion to repair or replace the defective goods. We will not consider supplementary claims, especially for reimbursement of costs relating to the defect (e.g. installation/removal costs) and compensation for consequent damages unless they are allowed by statute. This does not affect claims on legal regulations, especially according to the product liability law.

Provisions of the Warranty

The purchaser is required to make the warranty claim in writing and must enclose original proof of purchase (e.g. invoice, receipt, delivery note) and the appropriate warranty card. He must send the defective goods to our local representatives or directly to Team Corally, a division of JSP Group Intl BVBA, Geelseweg 80, 2250 Olen, Belgium at his own risk and cost.

The purchaser should state the material defect or manufacturing fault, or symptoms of the fault, as accurately as possible so that we can check if our warranty obligation is applicable. The goods are transported from the consumer to us, and from us to the consumer, entirely at the risk and cost of the consumer.

Invalidation of the Warranty

The consumer cannot make a claim under warranty when the fault is affecting the use of the product arising from natural wear, competition use, or improper use (including installation), or external forces. The consumer's adherence to the building and operating instructions relevant to the model, including the installation, operation, use of, and maintenance of, model-related components cannot be supervised by Team Corally. Therefore Team Corally is in no way liable for loss, damage, or costs resulting from improper use, or behavior in any way connected to the above-described provisions. Unless otherwise required by law, Team Corally is in no way liable to provide compensation for damages arising from the improper use of the model (including personal injury, death, damage to buildings, loss of turnover, loss of business, or interruption of business, or any other direct, or indirectly

caused, consequential damage).

Duration of Validity

The claim period is 24 months from the date of purchase of the product by the consumer from a dealer in the European Community (EC) counted from the date of purchase. The claim period is 12 months from the date of purchase of the product by the consumer from a dealer outside the European Community (EC) counted from the date of purchase. If a defect arises after the end of the claim period, or if evidence or documents required according to this declaration in order to make the claim valid are not presented until after this period, then the consumer forfeits any rights or claims from this declaration. The guarantee period is not prolonged by the granting of any claims within the framework of this warranty, especially in the case of repair or replacement. The guarantee period also does not restart in such cases.

Warranty Expiration

If we do not acknowledge the validity of a claim based on this declaration within the claim period, all claims based on this declaration will expire after six months from the time of registering the claim; however, this cannot occur prior to the end of the claim period.

Applicable Law

This declaration, and the claims, rights, and obligations arising from it, are based exclusively on the pertinent Belgium Law, without the norms of international private law, and excluding UN retail law. The place of fulfillment for liabilities arising from this declaration is Olen, Belgium. The Court of jurisdiction is Turnhout, Belgium.

Copyright

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WEEE: At the end of this device's useful life, please remove all the batteries and dispose of them separately. Take electrical appliances to the local collection points for waste electrical and electronic equipment. Other components can be disposed of in domestic refuse.

Thank you for your co-operation!

Declaration of Conformity

Team Corally REVOC II XTR-160 Controller

Declaration of conformity in accordance with the statutory rules 426/2000 and directive 1999/5/EC (R&TTE)

Team Corally, a division of JSP Group Intl BVBA declares under sole responsibility that the electronic speed controller Revoc II

XTR-160 with reference nr C-53010 to which this declaration relate, conforms with the following harmonized standards and EU legislations;

EN 60950-1 ed. 2

EN 61000-6-3 ed. 2



Olen – Belgium

02 November 2020

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