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1/10 BRUSHLESS PRO ESC
USER MANUAL

Thank you for choosing the Team Exalt Xscend X Pro Competition Electronic Speed Control.

The Xscend X Pro represents Team Exalt's latest generation of high-performance sensored brushless electronic speed controls, engineered specifically for competitive RC racing. Designed with advanced hardware, intelligent software, and extensive tuning capabilities, the Xscend X Pro delivers exceptional power, precision, and reliability for racers seeking the highest level of performance. To ensure safe operation and achieve the best possible performance, please read this instruction manual before installing or operating your ESC. Proper installation, programming, and maintenance will maximize both performance and product longevity. Team Exalt is committed to continuous innovation and product improvement. As a result, we reserve the right to modify product design, appearance, specifications, firmware, software, or operating requirements without prior notice. Team Exalt makes no warranties or representations regarding the suitability of this product for any specific application beyond its intended use. Team Exalt assumes no responsibility for modifications, repairs, or alterations performed by third parties, nor for any damage, injury, or loss resulting from improper installation, misuse, incorrect programming, or operation of this product. By using the Xscend X Pro, you acknowledge that you understand the inherent risks associated with high-performance RC vehicles and accept full responsibility for the installation and operation of this product. Thank you for your confidence in Team Exalt. We appreciate your support and are proud to be part of your racing program. **RACE HARD. RACE SMART. RACE EXALT**.

CAUTION

1. Do not let children use this product without the supervision of an adult.
2. The ESC might get hot during use, be careful when handling it.
3. When soldering input/output wires and connections, set the iron to 60W minimum.
4. Always disconnect the battery after use, do not store with the battery connected.
5. Do not use near flammable materials
6. If the ESC overheats, emits smokes or burns, immediately discontinue use, disconnect the battery and seek assistance.

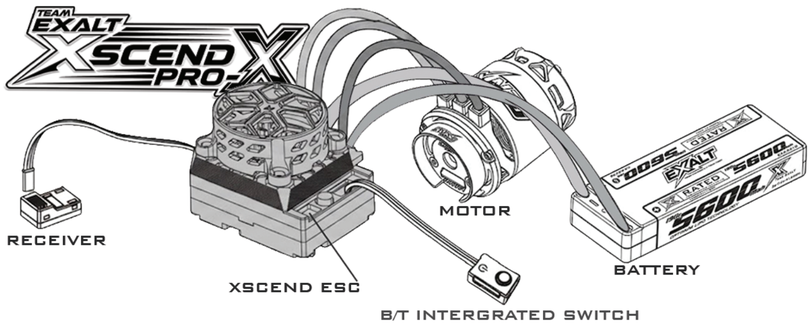
FEATURES

1. Reverse polarity protection and multi-layer PCB design ensure low internal resistance and strong overcurrent capability.
2. Built-in current-sensing hardware monitors operating current in real time for enhanced protection.
3. Synchronous rectification reduces ESC operating temperature and eliminates the drag effect during deceleration.
4. The cooling fan supports always-on, always-off, and automatic start/stop modes, reducing noise and power consumption.
5. Adjustable BEC voltage from 6.0V to 7.4V in 0.1v increments,
6. Compact Bluetooth module connects to the ESC within 5 seconds and completes firmware upgrades in about 20 seconds.
7. Supports parameter settings and firmware upgrades via the mobile APP over Bluetooth using real-time data; supports real-time tuning without restarting the ESC.
8. Supports high-speed data logging at 50Hz, stores up to 32 data segments, allows exporting as TXT files, and supports offline viewing.
9. Both throttle and brake offer 17 curve modes each (exponential, linear, logarithmic) to suit different driving preferences.
10. Built-in RPM limiting function meets the requirements for drift competition.
11. Provides 8-levels of boost mode, capable of holding the wheels even when stationary; drag brake frequency and boost are independently adjustable.
12. Optimized Boost trigger method: timing advances by 1 degree for every 0.5k RPM increase, delivering more linear power output.

SPECIFICATIONS

Product Name	1/10 Xscend Pro-X 180A Brushless Esc
Motor Type	Sensored Brushless Motors
Burst/Cont. Current	1200A/180A
Input Voltage	2-3s Lipo
BEC Output	6.0-7.4v/10a
Size (LxWxH)	38x32x32mm
Weight	95g
ESC Programming	via B/T Module
Firmware Upgrade	Supported
Reverse Polarity Protection	Yes
Car Application	1/10 Stock/Modified Offroad/Onroad,Oval,Drifting

CONNECTIONS



WIRING CONNECTIONS

BATTERY CONNECTION

When connecting the battery, always verify the polarity before powering on the ESC. Incorrect polarity will damage both the ESC and the battery.

* Connect the positive (+) battery wire to the ESC positive (+) terminal.
* Connect the negative (-) battery wire to the ESC negative (-) terminal.

MOTOR CONNECTION

SENSORED BRUSHLESS MOTOR

1. Connect the ESC motor wires A, B, and C to the corresponding A, B, and C motor terminals.
2. Connect the motor sensor cable to the Sensor port on the ESC.
3. Do not change the A/B/C wire sequence unless troubleshooting motor rotation.

RECEIVER CONNECTION

The ESC includes a built-in 6.0 V BEC, which supplies power to the receiver and servo. An additional receiver battery is not required.

Warning: Do not connect an external power supply directly to the receiver while the ESC is connected. Doing so may damage the ESC.

SOFTWARE SETTINGS & FUNCTIONS

DOWNLOAD EXALT APP HERE!

App Store | Google Play

POWER ON / OFF ESC

Power On

1. Press the Power button once to turn on the ESC.

Power Off

1. Ensure the throttle trigger is in the neutral position (within ±10%).
2. Press and hold the Power button until all LEDs turn off.
3. Release the button. The ESC is now powered off.

Note: The ESC cannot be turned off if the throttle is not in the neutral position.

THROTTLE CALIBRATION

Perform throttle calibration whenever using a new transmitter, receiver, or after changing transmitter throttle settings.

1. Connect the ESC to the battery and receiver, then turn on the transmitter.
2. Press and hold the Power button until:
   * The blue LED turns solid.
   * The motor emits a long beep.
3. Release the Power button. The red LED will remain solid, indicating the ESC has entered Throttle Calibration Mode.

SET FULL THROTTLE

1. Pull the throttle trigger to the full throttle position.
2. The blue LED will flash three times and the motor will beep once.
3. Full throttle is now stored.

SET FULL BRAKE

1. Push the throttle trigger to the full brake position.
2. The blue LED will flash three times and the motor will beep twice.
3. Full brake is now stored.

SET NEUTRAL

1. Return the throttle trigger to the neutral position.
2. The blue LED will flash three times and the motor will beep three times.
3. Throttle calibration is complete.

REVERSE THROTTLE SUPPORT

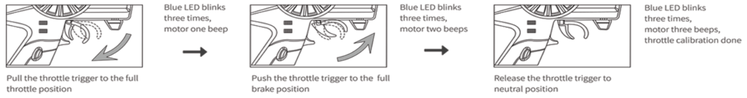
The ESC supports calibration with transmitters that use reversed throttle channels.

* If the transmitter throttle is reversed, pulling the trigger will register as full brake, and pushing the trigger will register as full throttle.
* Complete the calibration using the same procedure described above.
* After calibration, the ESC will operate correctly regardless of whether the transmitter throttle channel is set to Normal or Reverse.

Important Notes

* *The ESC does not need to be restarted after throttle calibration.*
* *Do not move the throttle trigger while the blue LED is flashing.*
* *For best performance, recalibrate the throttle whenever changing transmitters, receivers, or throttle endpoint settings.*





LED STATUS

DURING OPERATIONS

Throttle Position	Blue LED	Red LED
Neutral	Blinking	OFF
Full Throttle	ON	ON
Full Brake	OFF	ON

Note: When you pull the throttle from neutral position to full throttle position, the Blue LED will blink, and the blink frequency will go faster when the throttle goes higher.

WHEN SOME PROTECTION IS ACTIVATED

* The RED LED is always on solid once the power button is pressed.
* The RED LED blinks, single flash between every one second. Repeat like "• • •" indicates that the voltage is abnormal.
* The RED LED blinks, double flash between every one second. Repeat like "•• •• ••" indicates that the temperature is abnormal.
* The RED LED blinks, single and double flash alternately between every one second. Repeat like "• •• • ••" indicates that both the voltage and temperature are abnormal at the same time.
* The RED LED will not have any response even the voltage or temperature is abnormal if it does not detect the signal.
* The BLUE LED blinks, double flash between every two seconds. Repeat like "•• ••" indicates that the throttle is abnormal.
* (No throttle, or the throttle is not on the neutral position.)

THROTTLE SIGNAL

1. The ESC throttle protection will be activated under the following situations, and the BLUE LED blinks double flash:
   * The throttle trigger does not place on the neutral position when the ESC turns on.
   * Lost the throttle signal.
2. If the ESC lost throttle signal during the operation, the BLUE LED will blink double flash, and the ESC will start to work again until the throttle signal is back to normal.

SENSORED & SENSORLESS

1. The sensored mode is activated once the ESC detected the hall sensor signal at any time.
2. The ESC will work on sensorless mode once the ESC didn't detect the hall sensor signal at any time.
3. The ESC will have a slight power drop and restored soon during the moment of sensored and sensorless mode switching.
4. Boost and turbo functions are not available on sensorless mode.

PROTECTION

1. High Voltage Protection
   If the ESC detected the voltage too high (higher than the ESC standard voltage), when the ESC turns on, and the voltage protection was not set "OFF", then the voltage protection will be activated, and the maximum throttle output will be limited within 50%.
   (The high voltage protection only worked on the moment of the ESC turns on, and it will not work on the other stages even it detected the high voltage, once the high voltage protection opened, even though the voltage comes down to the normal voltage, the protection will not be relieved.)
2. Low Voltage Protection
   If the ESC detected the voltage less than the set value at any time, and this voltage keeps for a while, then the low voltage protection is activated, and the maximum throttle output will be limited within 50%.
   (Once the low voltage protection activated, even though the voltage comes back to normal, the protection can not be relieved.)
3. Thermal Protection
   The output throttle from the ESC will be limited (not over 50%) with the thermal value you have preset.
   (The thermal protection will be dismissed when the ESC temperature drops to 65°C.)
4. If the voltage protection and temperature protection set off, and when the voltage and temperature become abnormal, the LED status will indicate the problems correspondingly, but will not limit the throttle output and will not close all ESC timing.
5. If some issues happen, causing the ESC drive the motor failure, it will go into a protection; you will hear motor "beep beep beep", and it will stop beeping until release throttle to neutral position at least 0.2 seconds.

BLUETOOTH

1. Reset password:
   When the ESC turns on, press and hold the power button around 10 seconds, the ESC will restore the Bluetooth password to default setting 0000.
2. With Bluetooth connected to the Xcsend app the user can program parameters, upgrade firmware and check the real-time data of the ESC on the app.
3. Due to the range limit of Bluetooth, the operational distance range up to 30ft..
   (If there are many metals or other strong interference signals or obstacles around, it will shorten the operational distance.)
4. The Bluetooth name can be chnaged.
5. The Bluetooth connecting will disconnect during the ESC calibration process.

PROGRAMMABLE ITEMS

1. The user can program parameters at any status if the ESC turns on, and new programmed parameters will take effect immediately, no need to restart the ESC. It means the programming parameters can be completed online, so it can provide a very intuitive feeling between before programming and after programming.

There will be some impacts on the battery/ESC/motor if you program some parameters when the motor is in high-speed rotation.
For example:
* If you changed the motor rotation when the motor is in high-speed rotation, then the ESC will drive the motor reverse immediately, but the motor can not reverse immediately because of its inertia, then it will cause a big current and vibration.
* Or when the Boost or Turbo timing opened, but you set it off when the motor is in high-speed rotation, it also will cause a big current.

So we would like to recommend not programming parameters when the motor is in high-speed rotation.

REAL-TIME DATA (TELEMETRY)

1. The real-time data can be read only when the ESC has the throttle signal.
2. The real-time data is just a reference data with ±10% accuracy. If you want more accurate real-time data, you need to use more professional equipment.
3. The description of the real-time data items:

PROGRAMABLE FEATURES & DESCRIPTIONS

	Setting	Description
Throttle Settings	Thr. Response	How quickly the motor responds when you pull the throttle. A shorter time means faster acceleration.
	Coast	Keeps the motor running slightly for a brief moment after you let go of the throttle (return to neutral).
	Neutral Range	The lower the value is set the more "sensitive" on the trigger throttle will be applied, were a higher value would cause the trigger to be applied at a higher percentage for throttle to start being applied to the motor.
	Init. Thr.	The starting power applied as soon as you touch the throttle. For example, 10% gives an instant 10% power bump.
	Max Fwd. Force	The maximum speed or power allowed when driving forward (up to 100%).
	Max Rev. Force	The maximum speed or power allowed when driving in reverse (up to 100%).
	Rpm Limit	Sets a maximum speed limit (RPM) for the motor. Often used as a 'Rev Limiter' for drifting.
	PWM Freq start	The drive frequency used when the motor is at the starting RPM.
	PWM Freq End	The drive frequency used when the motor reaches the ending RPM.
	PWM Freq start rpm	The motor RPM at which the starting frequency begins.
	PWM Freq end rpm	The motor RPM at which the ending frequency is fully applied.
	Thr. Curve	Selects the throttle curve profile used by the ESC. Changes how power is delivered throughout trigger travel. Standard - Linear throttle response. 10%-90% Trigger - Adjusts throttle output at each specific trigger position. 100% Trigger - Sets the maximum throttle output at full trigger.
Brake Settings	Brk. Response	How quickly the brakes engage. A shorter time makes the brakes feel more aggressive right away.
	Brk. Enhance	Adds extra stopping power when braking. Higher settings brake harder; lower settings are smoother and easier to control.
	Init. Brk	The starting brake power applied as soon as you hit the brakes. Higher values give a strong initial 'bite', while lower values are smoother.
	Max. Brk Force	The maximum stopping power at full brake. Higher values stop faster; lower values help keep the car stable.
	Brk. PWM Freq	Changes how the brakes feel. Lower frequencies feel more aggressive and immediate; higher frequencies feel smoother.
	Drag Brk Force	Automatic braking applied when you let off the throttle. Higher values slow the car down quickly; lower values let it coast more.
	Drag Brk. Response	How fast the automatic drag brake kicks in. A faster response slows you down instantly, while a slower response is smoother.
	Drag PWM Freq	Changes how the drag brake feels. Lower frequencies give a stronger hold, while higher frequencies are smoother.
	Brk Curve	Allows you to create a custom brake curve by assigning a brake output value to each trigger position. 10%-90% Trigger - Adjusts brake output at each specific brake trigger position. 100% Trigger - Sets the maximum brake force applied when full brake is reached.
Boost Settings	Bst. Timing	The maximum extra timing added by Boost. More timing gives higher top speed and RPM, but makes the motor and ESC run hotter.
	Activation	How Boost is activated. It can be triggered by how far you pull the throttle, the motor's speed (RPM), or both.
	Thr. Activation Percentage	The throttle point where Boost kicks in. A lower percentage starts Boost earlier; a higher percentage requires more throttle.
	RPM Activation	The motor speed (RPM) where Boost kicks in. A lower RPM starts Boost earlier; a higher RPM starts it later.
	Init. Bst	An instant burst of timing added the moment Boost starts, making the car feel more responsive.
	Bst Inc. Rate	How fast Boost builds up. A faster rate is more aggressive; a slower rate is smoother.
	Bst. Dec. Rate	How fast Boost turns off. A faster rate drops power instantly; a slower rate fades it out smoothly.
Turbo Settings	Trb. Timing	The maximum extra timing added by Turbo, usually at full throttle, to give you the highest top speed.
	Trb. Inc rate	How fast Turbo builds up. A faster rate hits harder; a slower rate builds power gradually.
	Trb. Dec. Rate	How fast Turbo turns off. A faster rate shuts off instantly; a slower rate fades out smoothly.
	Delay	How long to wait before Turbo starts. A short delay is almost instant; a long delay requires you to hold full throttle longer.
General Settings	Motor Rotation	The direction the motor spins to move forward. Change this if your car goes backward when you pull the trigger forward.
	Motor Poles	Allows you to choose the motor poles used in the vehicle to correspond when using boost and frequency start and end rpm to allow the esc to read rpms correctly
	Running Mode	Choose your driving mode. For example, 'Forward/Brake' disables reverse, while 'Forward/Reverse/Brake' allows it.
	Reverse delay	A delay before reverse engages when you push the trigger forward.
	Cutoff Voltage	The battery voltage at which the ESC cuts power to protect your battery from over-discharging.
	Cutoff Thermal	The temperature at which the ESC cuts power to prevent overheating and damage.
	Bec Output	The voltage sent to your receiver, servo, and other accessories (BEC Output).
	A,C Swap	Swaps motor wires A and C. 'No' connects A-A, B-B, C-C. 'Yes' connects A-C, B-B, C-A.
	Fan Mode	Controls the cooling fan. It can run constantly or use 'smart' mode to turn on only when the ESC gets warm.

TROUBLESHOOTING

Trouble Shooting	Possible causes	Solutions
The ESC was unable to start the status LED, the motor, and the cooling fan after it was powered on.	1. No power was supplied to the ESC. 2. The ESC switch was damaged.	1. Check if all ESC & battery connectors have been well soldered or firmly connected. 2. Replace the broken switch.
The motor suddenly stopped or significantly reduced the output in operation.	1. The receiver was influenced by some foreign interference. 2. The ESC entered the battery LVC (Low Voltage Cut off) protection. 3. The ESC entered the thermal (over-heat) protection.	1. Check all devices and try to find out all possible causes, and check the transmitter' s battery voltage. 2. The RED LED blinks, single flash between every one second. 3. The RED LED blinks, double flash between every one second.
The motor stuttered but couldn' t start.	1. Some soldering between the motor and the ESC was not good. 2. The ESC was damaged (some MOSFETs were burnt).	1. Check all soldering points, please re-solder if necessary. 2. Contact the distributor for repair or other customer services.
The car ran forward/backward slowly when the throttle trigger was at the neutral position.	1. The neutral position on the transmitter was not stable, so signals were not stable either. 2. The ESC calibration was not proper.	1. Replace your transmitter 2. Re-calibrate the throttle range or fine tune the neutral position on the transmitter.

Need Assistance?
Contact Team Exalt Technical Support at Sales@TeamExalt.com or (407) 755-2771. For setup videos, firmware updates, and product tutorials, visit the Team Exalt YouTube Channel "HOWTUBE".

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