TRF 2002 ESC

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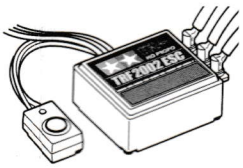


TAMIYA
KO PROPO

TRF 2002 ESC is a forward-only electronic speed control (ESC) intended for R/C car racing. Carefully read and fully understand instructions prior to use. Also make sure to read and adhere to the safety instructions mentioned below. Breakage and accident due to improper use will void warranty.

★Usable receiver: TAMIYA, KO, FUTABA, JR
※Specifications are subject to change without notice.

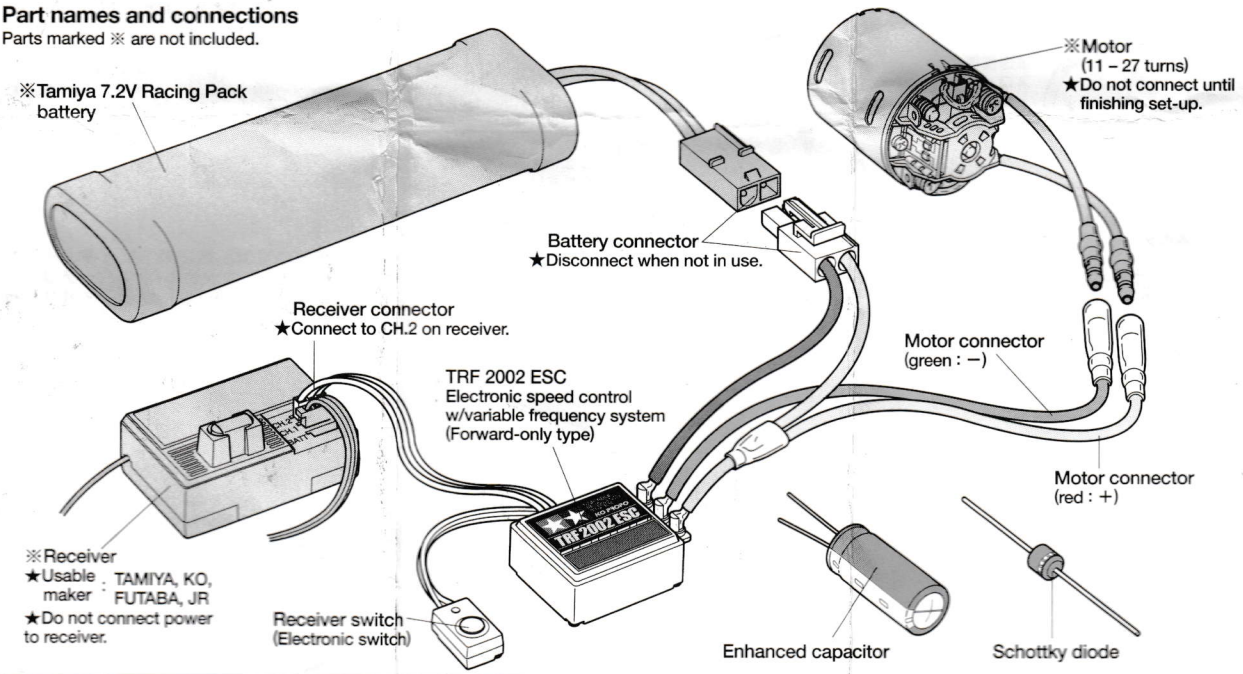
Variable frequency system
Enables adoption of motor output to fit motor type and circuit (requires PC interface cable and software). Acceleration range is divided into 32 steps from halt to maximum speed and the driving frequency (cycle of ON/OFF signal) in each step can be adjusted. In low speed range, it lowers frequency and creates running with high torque for plenty of punch. In high speed range, heightens frequency for sharp acceleration.

TRF 2002 ESC (Forward-only type)
- Control system: PWM control, variable frequency
- Max. instantaneous current: 728A (FET)
- Max. continuous current: 182A (FET)
- Power supply: 4.8 - 8.4V (with 4–7 cells)
- Applicable motor: TAMIYA electric motor for R/C cars (11-27 turns)
- Driving frequency: 500–6500Hz (with 32 steps)

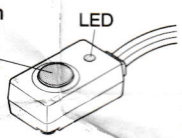
Initial setting TAMIYA Original
- Output voltage for receiver: 6V (input 7.2V)
- Output current for receiver: 2A (max. instantaneous)
- Dimensions: 32.5 x 29 x 15 mm
- Weight: 41g (body 37.9g)

Part names and connections

Parts marked ※ are not included.



Receiver switch / Electronic switch



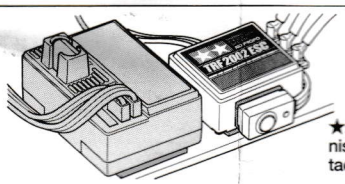
- Switch ON
Keep pushing power switch until LED lights on.
★Continuing to push switch brings set-up mode.

- Switch OFF
Keep pushing power switch until LED lights off.
★Always turn off switch and disconnect battery when not in use.

⚠ CAUTIONS
- ○Always turn ON transmitter first, then receiver.
- ○Always turn OFF receiver first, then transmitter.
- ★Opposite switching order may lead to out of control car and an unexpected accident.

Installation

- Devices circulating much current, such as ESC, motor, running battery and cables generate interference. Putting receiver and receiver antenna near these devices may result in loss of control. Place receiver and receiver antenna so that they do not contact with ESC, and the antenna does not cross ESC cables. Note that carbon and metal chassis are also affected by interference.



★Chrome plating on ESC body is delicate. Be careful not to damage the surface.

★Attach ESC to chassis or mechanism deck with double-sided tape. Attach switch to easily accessible place.

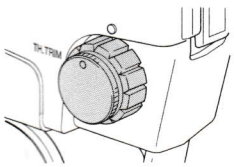
⚠ WARNING
- This product is an electronic speed control for ground-used R/C models. Do not substitute for other use.
- Securely connect receiver to electronic speed control and servo. Connector may be detached due to running vibration and result in out of control car.
- Make sure that no one else is using the same frequency in your running area. Using the same frequency at the same time can cause serious accidents.
- Stop operation if lightening or thunder occurs. Lightening may strike transmitter antenna.
- Do not operate R/C models in puddles or in rain. R/C devices may catch water and result in loss of control.
- Always remove running battery after use. Run-away car or fire may occur if R/C model is left switch on.
- Keep transmitter, battery, and R/C model away from small children to prevent personal injury, burn, intoxication, and suffocation etc.

⚠ CAUTIONS
- ○Always connect battery and motor in correct polarity. Improper connection may damage R/C devices.
- ○Running motor possessing wire with few turns at low frequency may damage electronic speed control and the motor.
- ○Avoid continuous operation: battery connector may melt or be deformed by heat. Do not touch motor and electronic speed control right after operation to prevent burning yourself.
- ○Do not short circuit cables to prevent damage to R/C devices and chassis.
- ○This product contains precision electronic devices. Shock, water, and humidity may cause breakage.
- ○Do not disassemble and modify. Use designated parts only (capacitors, diode). Foreign parts may cause breakage.
- ○Do not operate R/C model in the street or crowded place.

Set-up ★When set-up, disconnect motor cable.

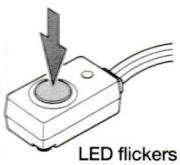
① Securely connect cables according to connections on page 1. Turn on transmitter first, then position throttle trim to neutral and reverse switch to normal.

★If your transmitter can install programmed setting, such as ABS or acceleration function, turn off all settings.



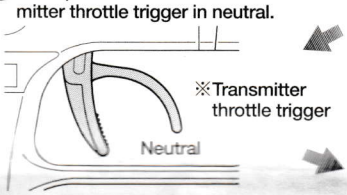
Keep pushing until LED turns off.

② Turn on receiver (LED lights up), then keep pushing power switch until LED turns off.

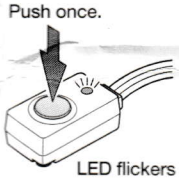


LED flickers once when switch is released.

③ Push power switch once with transmitter throttle trigger in neutral.

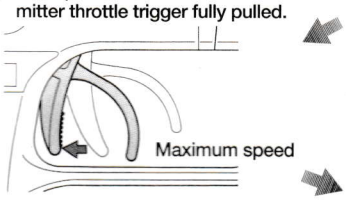


Push once.

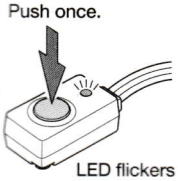


LED flickers twice.

④ Push power switch once with transmitter throttle trigger fully pulled.

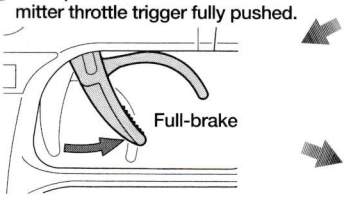


Push once.

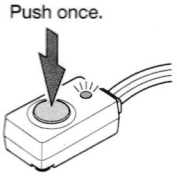


LED flickers three times.

⑤ Push power switch once with transmitter throttle trigger fully pushed.



Push once.



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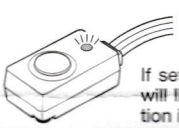


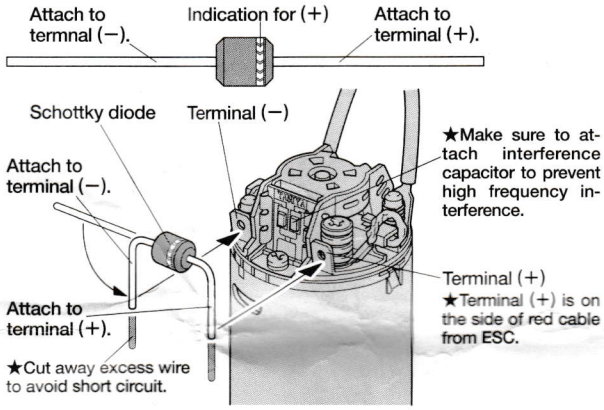
LED lights up. Set-up finished. (Standard setting)

If set-up procedure is performed correctly, LED will lights up according to throttle trigger operation in each stage: neutral, maximum speed (forward), and full-brake.

★Schottky diode and enhanced capacitor should be attached with solder. Take extra care when using soldering iron to prevent burning yourself or causing fire. Pay attention to polarity (+,−) when attaching. Opposite attachment may cause critical malfunction.

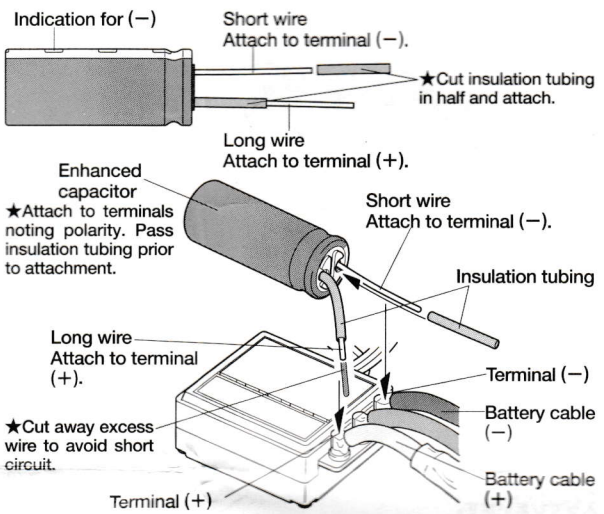
Schottky diode

★Attach Schottky diode to prevent interference from motor. Note polarity of Schottky diode. Do not attach Schottky diode when using C.P.R. unit or other devices with reverse operation.



Enhanced capacitor

★If using modified motor or Ni-MH battery, make sure to attach enhanced capacitor to prevent loss of control due to depression of voltage and current caused by sudden acceleration.



Frequency settings Combination with PC interface cable and software (available separately) enables adoption of motor output to suit your driving style. Refer to the instructions on PC interface device for detailed information.

Trouble shooting

★Before sending your R/C model in for repair, check it again using the below diagram.

PROBLEM	CAUSE	REMEDY
Motor does not work. No brake control.	★Set-up error. ★Glitch with motor. ★Connection error. ★Glitch with ESC.	●Perform set-up procedure again. ●Replace motors. ●Inspect cable and connection. ●Contact your local dealer/agent.
Disturbed control. No control.	★Glitch with Schottky diode or interference capacitor. ★No attachment of enhanced capacitor. ★False position of ESC and/or receiver.	●Replace the diode or capacitor with new one. Replace motor if it is causing interference. ●Always attach when using modified motor or Ni-MH battery. ●Change ESC or receiver position, or antenna cable layout.
Overheating on ESC. (Heat protection device is on.)	★Cooling shortage. ★Glitch with driving gear of chassis. ★Improper gear ratio.	●Create better ventilation by making holes on body shell, etc. ●Inspect rotating area of chassis. Reassemble if required. ●Set proper gear ratio.

If any troubles...
★In case of glitch or malfunction, consult your local agent/dealer.

www.tamiya.com

AFTER MARKET SERVICE CARD

When purchasing Tamiya replacement parts, please take or send this form to your local Tamiya dealer so that the parts required can be correctly identified and supplied. Please note that specifications, availability and price are subject to change without notice.

Parts code ITEM 49254

7804044·····Enhanced Capacitor
7804045·····Schottky Diode
7804046·····PC Interface Device

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