

Reversible High Frequency Hyper Digital Electronic Speed controller

Please read this manual carefully for safe use of this product.

Note on Usage In this manual, warnings are classified into two levels depending on the severity of the danger posed by failure to observe the proper procedure, as follows



Warning!

Failure to observe the matter discussed in such an item poses a serious threat of danger or severe injury.

•This product is only designed for use with radio controlled models. •Do not use for any other purpose. •Ensure all equipment is connected correctly. Loose connections may cause loss of control. •Ensure other users are not operating on your frequency before turning on the power switch. •Do not use the model during thunderstorms - there is a possibility of lightning striking the antenna. •Do not use the model in the rain or in a location where water might get on it. The unit may become wet and cause loss of control. •Do not run the model when you experience difficulties in concentration through tiredness, alcohol or medication. The misjudgment may result in an accident. •Ensure Ni-cd battery is disconnected after use. Accidental switching on of the unit may cause fire or cause the model to run out of control. •When storing the transmitter, batteries and model, ensure they are kept out of children. It may result in damage by chemicals.



Caution!

Failure to observe the matter discussed in such an item poses a possibility of injury and a great likelihood of damage to the equipment of property.

•Do not short-circuit the battery terminals. It is dangerous and could cause a fire or explosion. •Ensure genuine KO Propo products are used e.g. transmitter, receiver, servo and other option parts. We cannot assume any responsibility for the use of other company's products with this unit. •Always switch on the transmitter first, then the ESC, when turning off after use, always switch off ESC first followed by the transmitter. •Do not touch the motor or ESC as heat is generated and may result in burning.

"From the view of quality for radio controlled model, we cannot assume any responsibility for the result by use of our products, please understand in advance."

Installation

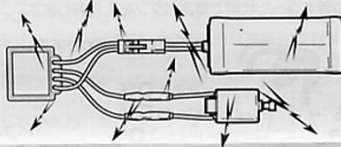
Attach KSC1000FR(or 1100FR) to chassis plate using double sided tape.

In case of crash during use, always install the switch in a safe place



Caution!

Install KSC1000FR(or 1100FR) away from antenna lead or receiver(especially crystal position).



Wiring diagram for the receiver, servo, Ni-cd and motor

Note that where electrical currents that can cause noise exist i.e. motor, speed controller, Ni-cd, and cables, the antenna must be routed away from such devices to prevent possible interference. Location of a high frequency speed controller requires careful attention to these factors.

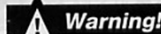
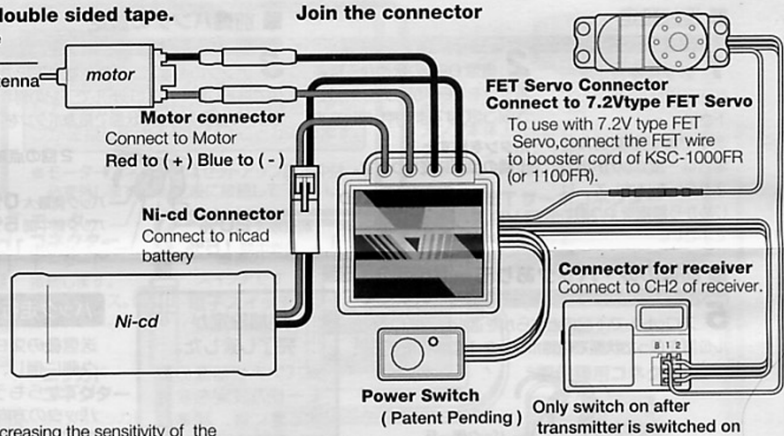
Install the unit away from receiver.

Do not bundle the aerial wire with silicone cables. This may result in decreasing the sensitivity of the receiver and could cause the model to run out of control.

Install the unit away from the receiver. If too close to the receiver it may be affected by noise and cause the model to run out of control.

Do not install the KSC-1000FR(or 1100FR) near to the antenna holder. It may cause the antenna to pick up noise and cause malfunction.

Join the connector

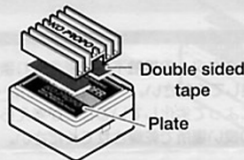


Warning!

Ensure all connectors for the receiver, servo and switch are plugged together correctly.

Overheating

High temperature will make speed controller inefficient. In order to ensure best conditions by controlling increased temperature, it may be necessary to install optional heat sink and to make a ventilation slot in the bodyshell.



Installation of Heat Sink (optionally available)

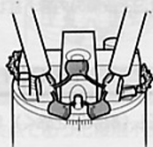
For safety, please disconnect Ni-cd battery. Remove dust and dirt from heat sink (using alcohol cleaner). Attach double sided tape to Heat Sink before attaching to plate.

Heat by overload will activate the heat protector within the speed controller, which will stop operation to prevent further problems.

Motor Maintenance

Motor can cause 'noise' leading to misoperation.

Installation of noise filter condenser
KSC1000FR is a High Frequency Speed Controller. In order to control high frequency noise, install noise filter condenser to motor before use.



Cleaning Inside brush holders

Dirt inside the motor brush holders will not allow brush to move freely which may cause noise during operation. Clean inside the brush holder with a swab dipped in alcohol cleaner.



Caution!

Ensure diode and/or tantalum capacitor is removed before use if fitted to the motor operating with it may cause irreparable damage.



Caution!

KSC1000FR-Do not use with motor of less than 16 turns, KSC-1100FR-Do not use with motor of less than 10 turns. Overload will activate heat protector and stop operation.

KSC-1000FR Technical data based on standard data for each parts

Operation method: CPU control
Maximum peak current: Forward 400A/Reverse 200A
Operating input voltage: 7.2-8.4V
Continuous peak current: Forward 100A/Reverse 50A
Drive frequency: 1.8KHz
Suitable motor: a motor with 16 turns or above
BEC voltage: 6V
Dimension: 32.5x33x17.5mm
Maximum BEC current: 2A
Gross weight: 38g

KSC-1100FR Technical data based on standard data for each parts

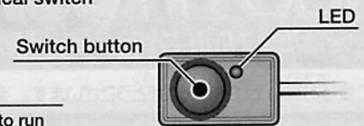
Operation method: CPU control
Maximum peak current: Forward 800A/Reverse 400A
Operating input voltage: 7.2-8.4V
Continuous peak current: Forward 200A/Reverse 100A
Drive frequency: 1.8KHz
Suitable motor: a motor with 10 turns or above
BEC voltage: 6V
Dimension: 32.5x33x17.5mm
Maximum BEC current: 2A
Gross weight: 45.5g (Except for heat sink)

Power Switch

The power switch for KSC1000FR(or 1100FR) is a 'touch type' which offers advantage over a mechanical switch

To switch on Ensure transmitter battery and model Ni-cd batteries are fully charged. Ensure correct connection.
Press and hold touch button until LED flashes, holding further will enter the set up menu.

To switch off Press and hold touch Button until LED goes out



Power Switch
(Patent pending)

Warning! Ensure Ni-cd is disconnected when not in use. Accidental switching on may cause the model to run out of control.

Caution! Always ensure transmitter is switched on first followed by model. When switching off ensure model is switched off first, followed by the transmitter. Incorrect procedure may cause the model to run out of control.

Setting up

Please refer to connection diagrams before Set up procedure and ensure transmitter is Switched on. Normal set up procedure should be completed first. Mode set up cannot be performed before or without normal set up procedure. Ensure ABS and Acceleration functions are disabled on your transmitter if fitted-the Forward and brake high points cannot be set properly with these functions switched on.

△ Forward punch

Improves response to forward side of throttle

△ Brake punch

Improves response of brake

▽ Forward only

Disable the reverse function

△ Forward and reverse

Forward and reverse function available

First make standard setting

Before start setting

Connect speed controller referring to previous 'installation' column

Change both transmitter and model battery before use.

Switch on at transmitter side

Factory preset for KO transmitter is 100%

If the throttle turning angle has been adjusted at the transmitter return to factory default settings.

Ensure ABS and Acceleration functions are disabled on your transmitter.

Normal Set Up



Electric Power Switch



Transmitter Throttle

1 Press and hold the power switch until the LED lights, goes out then release.

2 Whilst the LED single flashes, press the switch once whilst the throttle position is at neutral.

3 When the LED double flashes, press the switch once whilst the throttle is at the maximum forward position.

4 When the LED triple flashes, press the switch once whilst the throttle is at the maximum reverse position. LED goes out then remains permanently on.

End of Set Up.

If no additional set up changes are required the ESC is ready for use.

In order to go for additional mode settings Switch off ESC by depressing power switch for at least 1 second



Power Switch Button



Neutral



Full forward position



Full reverse position

Set Up for additional Mode Settings.

1 Normal set up procedure should be completed first. If there are any mistakes during set up, disconnect the Nicad battery and do it again.

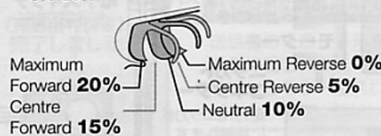
2 Press and hold the power switch until the LED lights, goes off and comes on then release. LED flashes.



Power Switch

Set up for Forward Punch

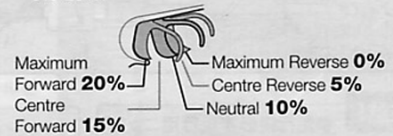
3 Press the switch once at the following throttle positions. Forward Punch can be selected between 0%-20%.



End of Forward Punch Set up. LED changes to two Flashes

Set up for Brake Punch

4 Press the switch once at the following throttle positions. Brake Punch can be selected between 0%-20%.



End of Brake Punch Set up. LED changes to three Flashes

Selecting the mode with or without reverse function.

5 Without Reverse Function: Press the switch once whilst the throttle position is at maximum forward. Operation set when LED remains permanently on. With reverse mode: Press the switch once whilst the throttle position is at maximum reverse. Operation set when LED remains permanently on.



Full forward position.
Forward only mode.



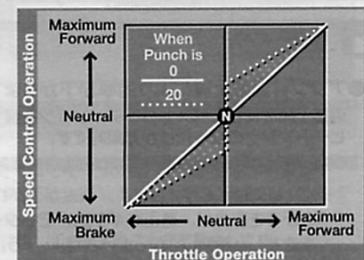
Full reverse position.
With reverse mode.

End of Additional Set Up

ESC is ready for use

For reverse driving.

To activate - Push the throttle to maximum reverse then return to neutral position momentarily before pushing throttle again to a maximum reverse. (KSC1000FR(or 1100FR) has built in circuit protection and is programmed reverse movement whilst driving forwards).



Repairs

After long use wear can occur on the cable connector. This may result in a loose connection between Ni-cd and speed controller. Dirt can cause the same effect.

Please change connector (ensuring polarity).

Should the case suffer heat damage, we would suggest you return it for inspection to KO Propo Service Dept. - initial components may also be heat damaged.

Should the unit become wet, please dry thoroughly. We suggest you to return it for inspection to KO Propo Service Dept.

If the item still does not function correctly, bad condition, once again refer to this instruction manual for further checking.

If the fault persists, please contact our Service Dept.

When consulting, please place following information in detail.

- Name of TX, RX, servo, motor, Ni-cd, chasis
- Situation when trouble occurred
- Your Name, address or phone (or fax) number we can contact to

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