

Thank you purchasing a Proton Control System's product.

Pulse 2 is an on board type Glow Plug Ignition Unit that is installed inside your models. It can be conveniently and safely activated from a transmitter without having to connect an external battery.

Specification

Voltage range	:	4.8 V (4 cells), 6.0 V (5 cells)
Current drain	:	8 mA (Standby), 0.6 A (Ignition)
Size	:	65 X 40 X 18 mm (2.56" X 1.57" X 0.71")
Weight	:	Pulse 2 - 40.5 g (1.43 oz), LED harness - 12.7 g (0.45oz)
Contents	:	Pulse 2 X 1 pcs, LED harness X 1 pcs, Velcro type X 1 pcs, plastic washer X 2 pcs, screws X 2 pcs

Feature

- Activate from Transmitter

Pulse 2 utilizes receiver's unused channel (Gear, Flap or AUX) to receive signal from the transmitter to ignite a glow plug. An engine can be started right from your controller by switching on an appropriate channel, without having to connect an external startup battery.

- On board type

Pulse 2 is installed inside your model with the plug cable connected at all times. An engine can be easily started even when it is mounted in reverse position or when the plug is not easily reachable.

- Monitors receiver's voltage

Pulse 2 monitors the receiver's voltage level at all times so that you can prevent an uncontrollable situation due to a low voltage level.

- Receiver signal supervision

Pulse 2 monitors the receiver signal by comparing the standard signal kept in the memory against the current servo signal so that you can prevent an uncontrollable situation due to malfunction of receiver caused by damaged parts or connection problem with a crystal.

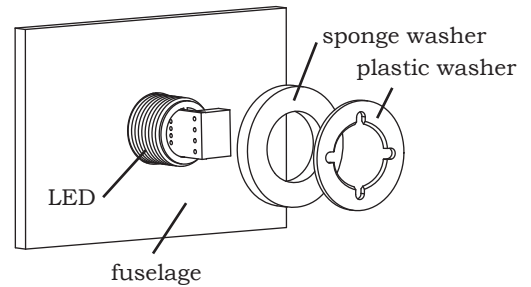
Caution : Receiver signal supervision is for the signal between receiver and servo. It does not monitor or supervise the signal between receiver and transmitter. Therefore, when Fail Safe function is activated due to a malfunction of transmitter or an interference, receiver locks the servo based on the fail safe data stored within the receiver. In this case, even though the transmitter will not be able to control, the signal between the receiver and the servo is still being sensed normally.

Installation

- Installing LED harness

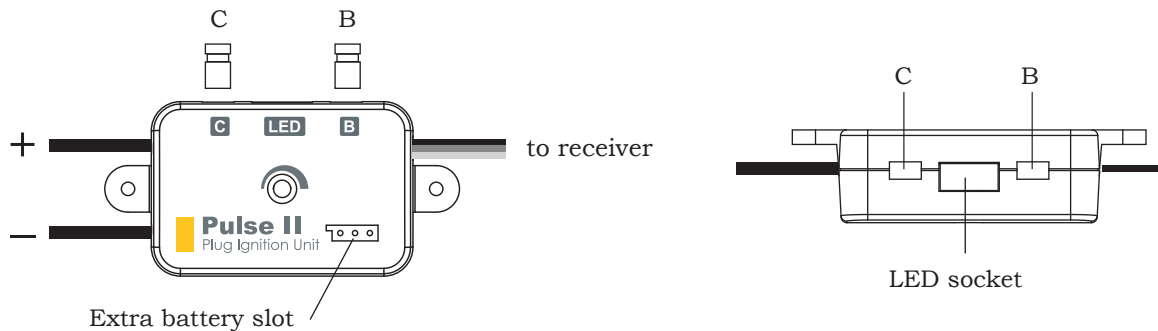
Make a 13mm hole on the fuselage of model and position the LED harness. From inside the fuselage, insert a soft washer and then a plastic washer. By pressing in the plastic washer evenly, fix the LED harness to the fuselage. (Extra soft and plastic washers are for spares in case they break.)

Caution: Plastic washer should be pressed with an even force all around the surface of washer, or it can break.



- Settings according to the number of cells/batteries

If the number of cells is 5, remove the jumper tap "C" on the upper left side of Pulse 2. If Pulse 2 does not share the battery with receiver and has its own battery, remove the jumper tap "B" on the upper right side.

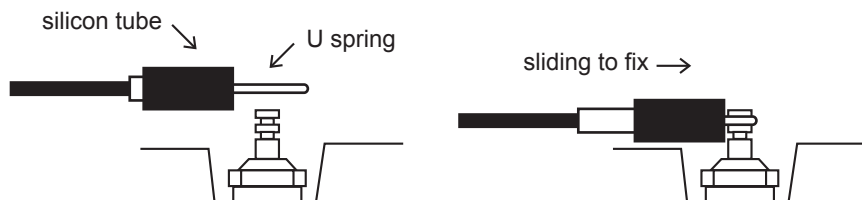


- Mounting Pulse 2 to a model

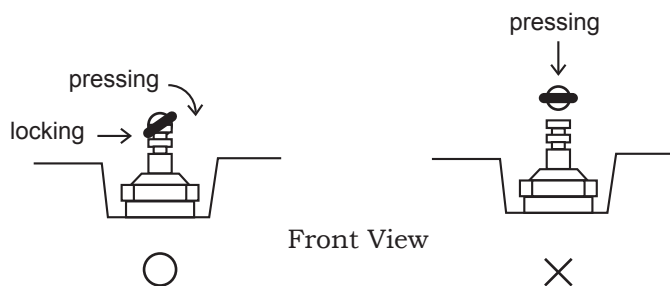
Insert the connector from LED harness to the LED slot on the upper side of Pulse 2. Position the plug cable towards the engine and JR connector towards the receiver. Mount Pulse 2 using Velcro™ type fastener or screws at a suitable location.

- Installing plug cable to an engine

Place the red wire tip onto the plug connector and push a silicon tube into the plug connector to hold. Connect the black ground wire to one of the screws holding the engine.



Tip! : U spring can be easily placed on the gloove by locking one side of U spring then pressing another side as below.



- Connection

Insert JR connector to one of the available slots on the receiver (Gear, Flap or AUX)

Operation

- Power on the transmitter and then power on the receiver.

- Check the battery level of receiver

	blue	green	red
4.8 V (4 cells)	over 5.3 V	5.1 ~ 4.5 V	below 4.4 V
6.0 V (5 cells)	over 6.7 V	6.4 ~ 5.5 V	below 5.4 V

Warning : When LED displays red, turn the power off to the model immediately and recharge the battery. If you are running many servos or expect high loading, prevent the low voltage situation by fully charging the battery even before the LED turns red.

- Confirm signal between receiver and servo

If the LED blinks, there is an abnormal condition with servo's signal to the receiver. Turn all power off and check all system including crystal connections and try again.

- Glow plug ignition

By operating the channel switch for the glow plug, confirm that the red LED blinks (if the plug is igniting.) If the LED does not blink with the appropriate channel switch on, plug coil could be cut off. Remove the plug from the head, check and replace as necessary. Plug ignition continues for 10 seconds each time the switch is activated.

Warning : Do not activate the glow plug ignition in the middle of flying or driving. Sudden draw of battery power can cease the operation of receiver.

- Ignition power control

If the LED blinks but the engine still does not start, remove the plug from the engine head and visually inspect the ignition. If the ignition is not strong enough, turn clockwise the potentiometer located inside the hole located in the middle of Pulse 2 to increase the ignition power.

Compatible Batteries for Receiver

NiCd : 500 mA ~ 2400 mA

NiMH : 2700 mA ~ 4500 mA

If the battery spec is lower, it may not glow. If the battery spec is higher, it may short the coil.

Caution: With a higher ignition power, an engine may start easier but the current draw can be excessive and shorten the life of plug. Try to set the lowest ignition power, just enough to start the engine.



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