

The IONIC NRG operation is based on a sensor, conceived and patented by Starlane, that can detect the instantaneous energy produced by the driver's action on the gears lever.

WARNING! INSTALLATION AND ADJUSTMENT MUST BE CARRIED OUT BY COMPETENT STAFF OF THE BRANCH. STARLANE DOES NOT ASSUME LIABILITY FOR DAMAGES OF ANY KIND DUE TO INCORRECT ASSEMBLY OR SETTING.

INSTALLATION

1. Remove the original bolt intended to fasten the lever and replace it with the one supplied in the kit.
In case of assembly on the transmission rod, unscrew the uniball and insert the sensor, as it is shown by the figure.
2. According to the vehicle leverage, install the sensor, as it is shown by the figure. The sensor direction and orientation represent no decisive factor.



Please Note: In case of assembly on levers complete with a socket head screw, insert the spacer supplied with the kit to balance the original seat height.

**Attention: the tightening torque must be 10 Nm (according to the standards for M6 bolts) tol. + / - 2
In any case, never exceed the maximum tightening torque of 12 Nm to avoid damaging the sensor!**

3. On roadracing motorcycles arrange the control unit beneath or close to the motorcycle saddle. On cross or supermoto motorcycles fasten it to the chassis, close to the steering area.
4. Connect the sensor to the connector on the IONIC control unit.

ELECTRICAL CONNECTION

Carefully follow the diagram attached to the package to connect IONIC NRG with the electrical installation of the motorcycle.

SETTING THE MINIMUM ENGINE SPEED ACTIVATION THRESHOLD

To avoid the engine stopping in maneuvers at idle RPM, IONIC NRG inhibits the cut below a factory set engine speed (typically 3000 RPM for phased 4 stroke engines). Meanwhile the engine runs in the inhibition range the LED blinks RED continuously. You can set the RPM threshold below which you wish to inhibit the intervention with the following procedure:

1. Move momentarily the circular selector to position "E".
2. Run the engine, in neutral, to the speed you want the system start cutting (eg. 4000RPM), and keep it at that speed.
3. Meanwhile the engine runs at the desired speed press the button for 2 seconds, the LED will start blinking.
4. If the RPM setting is completed, the LED will stop with a last GREEN flash, in case of errors or missing RPM signal the last flash will be RED.
5. The procedure is now complete, if you had already set the sensor sensitivity, remember to reposition the circular selector to the defined value.

Attention: the features related to engine speed are active only if the BLACK-RPM wire is correctly connected or if you use the specific optional Plug-Kits coming with that feature. So the connection of the BLACK-RPM wire can be avoided if you don't need RPM related features.

THE MOST IMPORTANT SETTING: THE LEVER SENSITIVITY

The force at which you wish the system to cut off is set by the 16 steps selector on which the minimum value (high sensitivity) is indicated by "0", setting a higher value will result in a stiff behaviour of the lever till the maximum value reached on the "F" position.

NOTE: the value measured by the sensor depends upon the shift energy and not simply upon the force. As a consequence, a slow action on the lever may fail to be detected or it may produce a weaker signal compared to the driver's usual action. This aspect shall be considered at the time of the setup (by means of a rapid and resolute movement of the lever as if you were driving) and by the driver who will resolutely shift the gears by releasing the gears lever after every single operation.

Please read the following carefully ...

VERY IMPORTANT!

The setting must be carried out with a dynamic road or track test;

in order to avoid the intervention being influenced by possible dumps, vibrations or unwanted actions by the rider,

THE OPTIMAL SETTING IS ALWAYS REACHED LOOKING FOR THE HIGHEST VALUE ON THE SELECTOR,

try various gear up-shiftings while driving, gradually setting the circular selector to increasing values, until the effort on the lever during the shift becomes excessive and the gear struggles to enter, at which point lower the value of the selector by one point to return to the last value deemed usable.

So it's always necessary to opt for a higher threshold if you notice undesired cuts or possible gears coming out after a shifting.

Never base the calibration on a low, convenient value, which is not obtained by seeking the maximum hardness and then decreasing by 1 point.

Before carrying out the dynamic setting it is possible to do a pre-calibration, aimed only at avoiding that the quick shifter intervenes without reason when you go out on the road: while the engine is off move by hand the gearshift lever, in upshift direction, till you feel the gear "sticking", the red LED must light on just while you are feeling the "stiffness", if the red LED keeps off move the selector anticlockwise, if it lights on before the gear is engaged move it in clockwise direction. The correct setting is reached when the red LED lights on at the moment of the gear engaging, the green LED lighting on means the cut off has happened.

Attention: If the engine is in the inhibition range with the RED LED blinking, the action on the sensor will be shown in GREEN even if the cut is not performed.

DIRECTION OF OPERATION

IONIC NRG can be easily used without requiring any special setup. It can detect the signal in both directions of operation of the lever. When set up by default, IONIC will act at the time of engaging or shifting the gears (please remember that – when shifting the gears - the action of the electronic gears has no effect on the engagement thereof). However, you can limit the action to one of the two directions by carrying out the operations here below:

1. Power off IONIC NRG.
2. Press the button and hold it down while supplying. The LED will turn on for one second. Never release the button.
3. While holding the button down, the LED will turn on after about 10 seconds and assume one single colour (e.g. GREEN). This means that the system has been set up to act in one direction only. As soon as the LED turns off, release the button. If you repeat the same operation, the LED will assume another colour (e.g. RED) next time. In this case, the system will act in the opposite direction. If the operation is performed once again, the LED will turn on in a two-colour mode (ORANGE). This means that the system has been set to the bidirectional mode. The operation intended to set up the direction can be repeated at will, with no limit.
4. Once set the direction, at every action on the lever, the LED will display one of the following colors: **ORANGE**=Bidirectional, **GREEN**=Compression, **RED**=Traction. N.B. Within the RPM inhibition range the LED will always show the gear shift in green.

Please Note: For an easier setting and a smoother operating it is recommended to keep the system set to the bidirectional mode.

SETTING THE CUT OFF TIME

For the best combination between smoothness at low RPM and maximum performance at high RPM, IONIC NRG features the dynamic management of the Cut Off which increases at low RPM. The Cut Off time is preset at an optimal value for the most part of the engines at 5 hundredths of second (50 milliseconds) at high RPM, anyway it's possible to set it at will between 4 and 15 hundredths of second. Keeping the button pressed for at least 3 seconds you enter the Cut Off setting mode, release the button as soon as the LED lights on. The LED will blink as many times as the hundredths of second actually set, after a 1 second pause they repeat the same sequence.

During the blinking sequence push the button as many times as the desired hundredths to be set.

Ex: with the factory setting of 5 hundredths of second the LED executes 2 sequences of 5 blinks separated by a 1 second pause. In order to set the Cut Off time of 4 hundredths, during the blinking, press the button 4 times, the LED will execute two sequences of 4 blinks and the procedure will be completed.

INVERTING THE ELECTRIC CONTACT TYPE (normally opened-normally closed)

Note: In the case it should be necessary to invert the cut contact, for particular applications, follow the steps below:

(Attention: before making this operation verify the electrical connections because the contact inversion could damage the motorbike electronics, harness or some fuses).

1. Power on IONIC NRG.
2. Move the selector to the "F" position.
3. Press and keep pressed the button for 15 seconds, during this time the LED will light on, light off and in a while will light on (Green or Red depending on the contact type just set).
4. Release the button.
5. Position the selector on the previous value you found out for the correct threshold setting.

Please Note: If you reverse the operation contact when IONIC NRG is not supplied, the motorcycle might fail to start or power off as soon as you engage the gears. In this case, make sure that the IONIC NRG control unit is properly supplied.

RESET TO FACTORY DEFAULT SETTINGS

You can reset the system to factory defaults by moving the selector to position "0" and keeping the button pressed for 20 seconds, the complete reset is confirmed by 3 blinks of the RED LED.

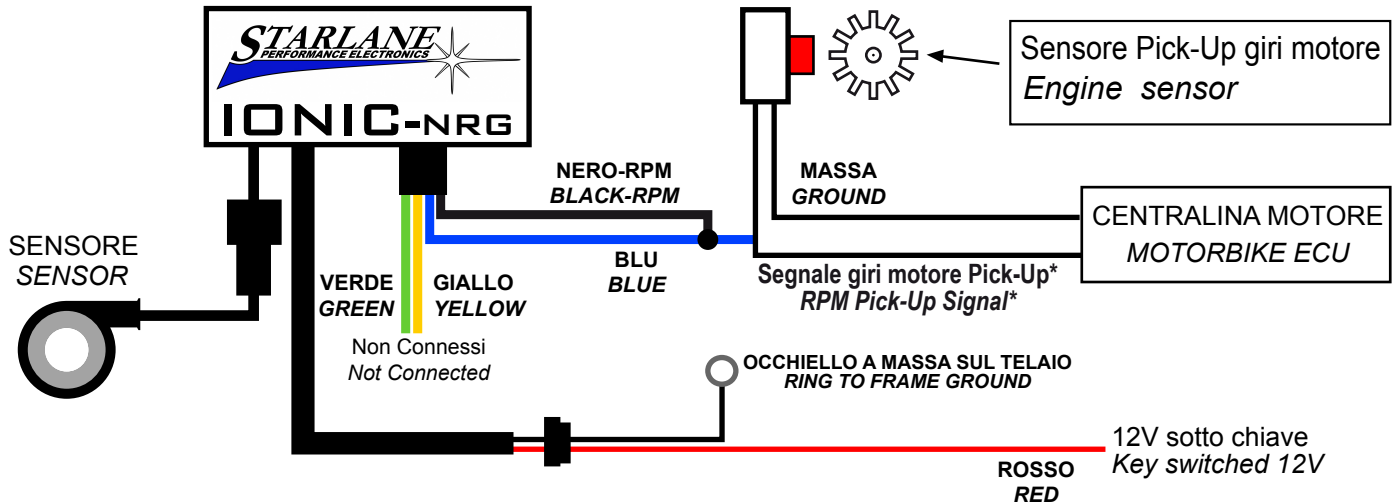
IONIC NRG is covered by a 24 month warranty against manufacturing defects. - not homologated for public road use.

SCHEMI DI CONNESSIONE IONIC NRG IONIC NRG CONNECTION DIAGRAMS



-A-

MOTO STRADALI A CARBURATORE CARBURETOR STREET BIKES

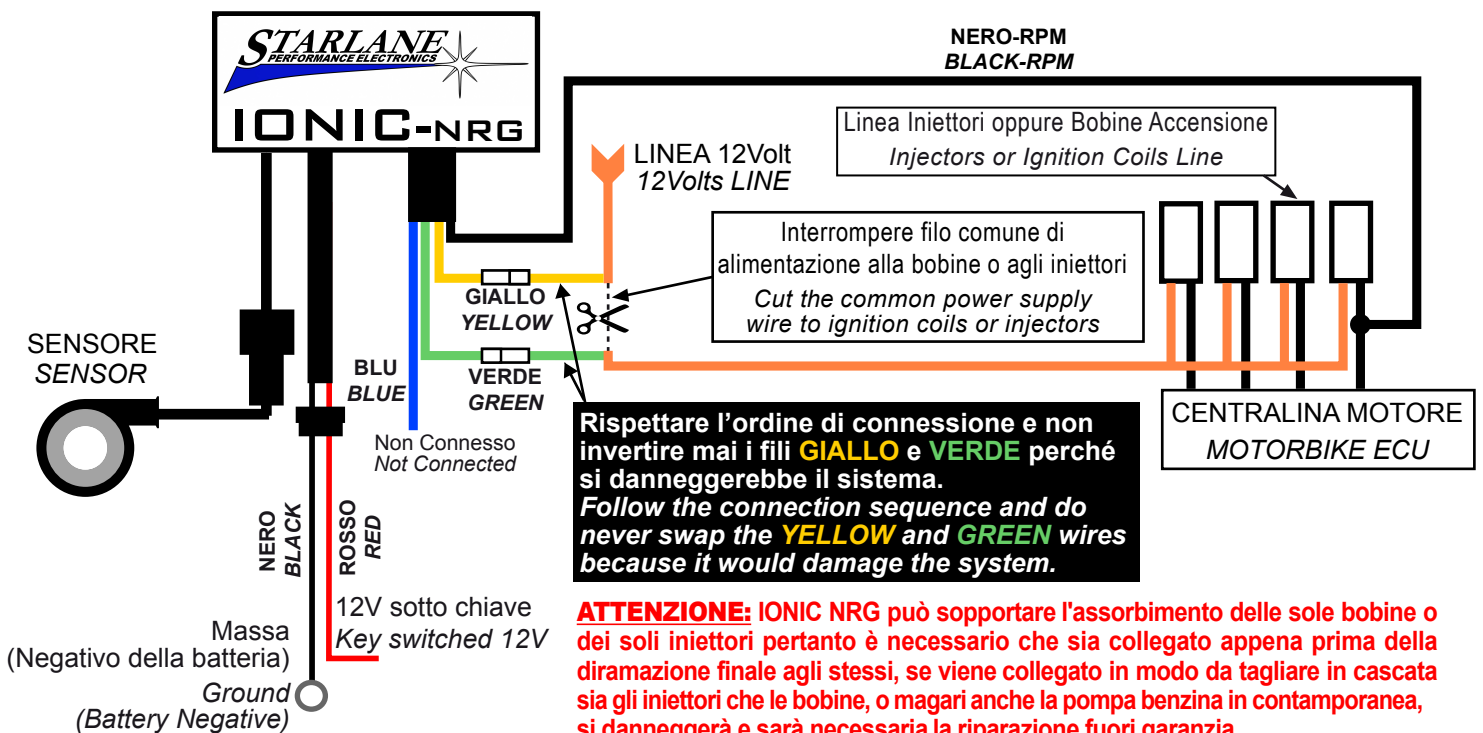


***Nota:** Generalmente uno dei due fili del Pick-Up è collegato a massa sull'impianto di serie; IONIC NRG va quindi collegato sul secondo filo, che è quello di segnale. Se non si avverte lo spegnimento dei cilindri durante la cambiata, è sufficiente collegarlo sull'altro filo del Pick-Up in quanto è possibile che lo si fosse collegato su quello già a massa.

***Note:** Generally one of the two Pick-Up wires is grounded in the original harness; thus IONIC NRG must be connected to the second wire, which is the signal one. If you don't get the engine cut-off while shifting, you just need to connect it to the other Pick-Up wire for it's possible you previously connected it to the already grounded wire.

-B-

MOTO CON INIEZIONE ELETTRONICA O ACCENSIONE INDUTTIVA A TRANSISTOR ELECTRONIC INJECTION OR INDUCTIVE TRANSISTORIZED IGNITION MOTORBIKES



**Rispettare l'ordine di connessione e non invertire mai i fili GIALLO e VERDE perché si danneggerebbe il sistema.
Follow the connection sequence and do never swap the YELLOW and GREEN wires because it would damage the system.**

ATTENZIONE: IONIC NRG può sopportare l'assorbimento delle sole bobine o dei soli iniettori pertanto è necessario che sia collegato appena prima della diramazione finale agli stessi, se viene collegato in modo da tagliare in cascata sia gli iniettori che le bobine, o magari anche la pompa benzina in contemporanea, si danneggerà e sarà necessaria la riparazione fuori garanzia.

ATTENTION: IONIC NRG can tolerate the absorption of ignition coils only or injectors only, therefore it's necessary to connect it just before the very last final branch of the wiring, if you connect it cutting many actuators together (injectors+ignition coils or fuel pump) the unit will be damaged and it will need a repairing out of warranty.

SEGUE TABELLA RIFERIMENTI MOTO
BIKE REFERENCE TABLE FOLLOWING

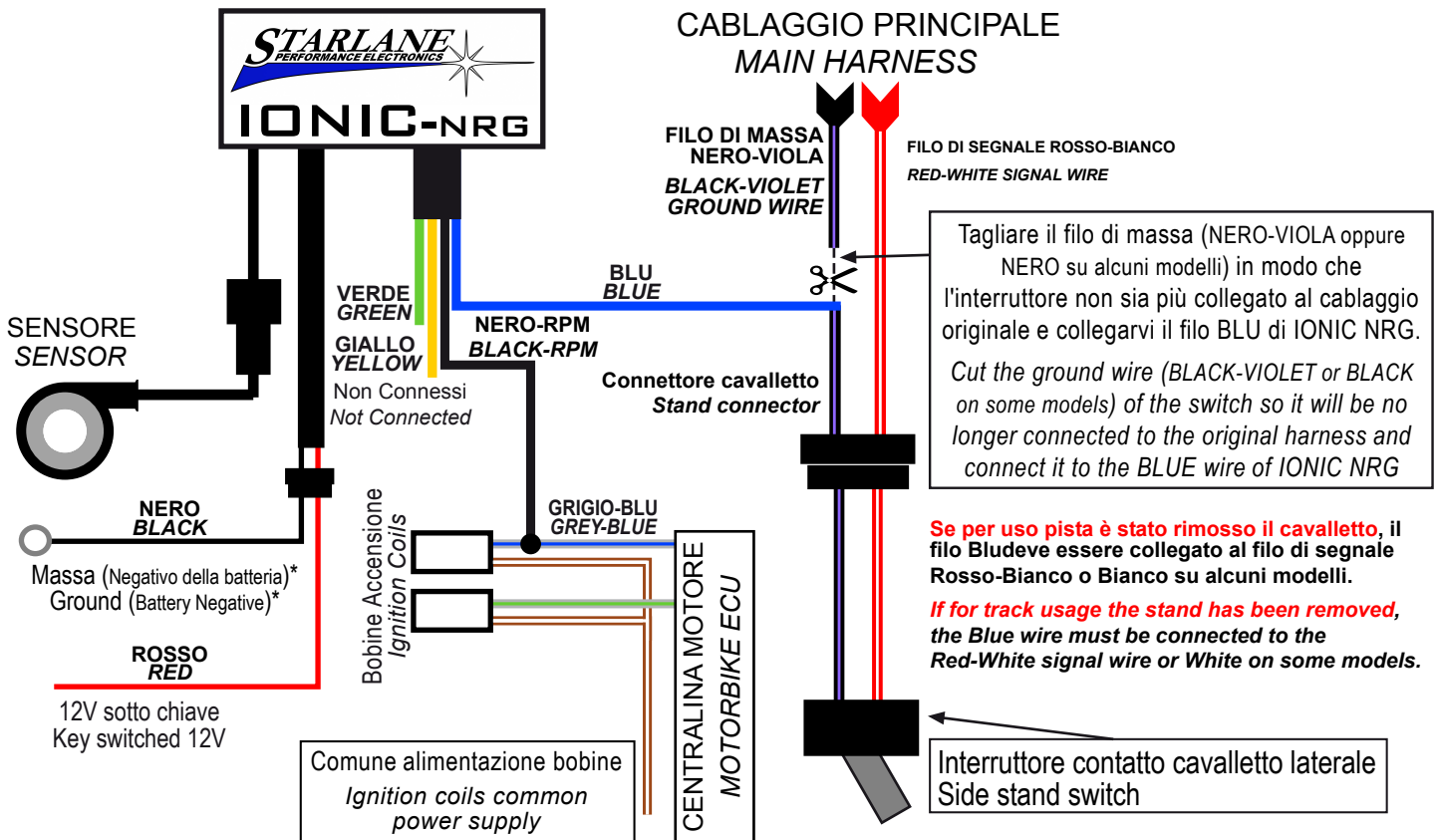
CONNESSIONI PIÙ DIFFUSE PER IL TAGLIO DELLE BOBINE - MOST COMMON CONNECTIONS FOR IGNITION COIL CUT

| | |
|---|--|
| <p>YAMAHA R6*-R1: Collegare il kit Plug&Play accessorio cod. PK4CJ, oppure interrompere il filo Rosso-Nero su connettore a 12 vie sotto serbatoio. <i>*Attenzione:</i> su Yamaha R6 fino al 2005 incluso, non è possibile installare il kit Plug&Play PK4CJ ma bisogna interrompere il filo comune degli iniettori Rosso-Blu, sul connettore a 12 vie sotto il serbatoio.</p> | <p>- Connect the Plug&Play optional kit code PK4CJ, or cut the Red-Black wire on 12 way connector under fuel tank. <i>*Attention:</i> on Yamaha R6 till 2005 included, you can't install the Plug&Play PK4CJ kit but you must cut the Red-Blue injectors common wire on 12 way connector under fuel tank.</p> |
| <p>HONDA CBR 1000: Collegare il kit Plug&Play accessorio cod. PK4CH, oppure interrompere il filo Bianco-Nero su connettore ramo bobine.</p> | <p>- Connect the Plug&Play optional kit code PK4CH, or cut the White-Black wire on the connector of the last wiring branch to the coils.</p> |
| <p>HONDA CBR 600: Collegare il kit Plug&Play accessorio cod. PK4CH, oppure tagliare entrambi i fili Bianco-Giallo su connettore ramo bobine e collegarli al giallo e al verde di IONIC NRG come se fossero un filo solo.</p> | <p>- Connect the Plug&Play optional kit code PK4CH, or cut both White-Yellow wires on the connector of the last wiring branch to the coils and connect them to the green and yellow of IONIC NRG as if they were a single wire.</p> |
| <p>KAWASAKI: Collegare il kit Plug&Play accessorio cod. PK4CJ, oppure interrompere il filo Rosso su connettore ramo bobine.</p> | <p>- Connect the Plug&Play optional kit code PK4CJ, or cut the Red wire on the connector of the last wiring branch to the coils.</p> |

-C-

MOTO DUCATI DAL 2004 IN POI
CON TAGLIO AL CONTATTO DEL CAVALLETTO LATERALE
DUCATI MOTORBIKES FROM 2004 ONWARD
WITH CUT ON THE SIDE STAND SWITCH

ATTENZIONE: Questo collegamento è applicabile solo su moto con centralina Magneti Marelli.
ATTENTION: This connection can be used only on bikes fitting Magneti Marelli ECU



*Nota: il sistema può funzionare solo se il negativo dell'alimentazione viene messo in comune con l'impianto o il telaio del veicolo
 *Note: the system can work only if the negative on the power supply is connected to the original harness ground or to the vehicle frame

ATTENZIONE!

Per il corretto funzionamento in questa applicazione, è necessario effettuare "L'INVERSIONE DEL CONTATTO DI AZIONAMENTO" come indicato sul manuale di IONIC NRG allegato. Così facendo IONIC NRG mantiene a massa il contatto e, nell'istante della cambiata, lo rilascia per il tempo di taglio impostato. Se non viene effettuata tale operazione, appena inserita la marcia il motore si spegnerà.

Sul modello DESMOSEDICI non deve essere effettuata l'inversione del contatto.

ATTENTION!

For the correct operation in this application, provide for the "INVERTING THE ELECTRIC CONTACT TYPE", as it is specified on the IONIC NRG manual attached hereto. In doing so, IONIC NRG will keep the contact to ground and release it for the set cut off time at the time of shifting. If you don't do the inversion, as soon as you engage the gear the engine will stop.

On DESMOSEDICI model the contact inversion is not needed.

-D-

CROSS-SUPERMOTARD CON PULSANTE DI SPEGNIMENTO MOTORE VERSO MASSA MOTOCROSS AND SUPERMOTO WITH ENGINE KILL BUTTON TO GROUND

ATTENZIONE: Il presente schema è utilizzabile solo su moto con pulsante di spegnimento verso massa e non con interruttore a due posizioni che interrompa la linea di alimentazione.

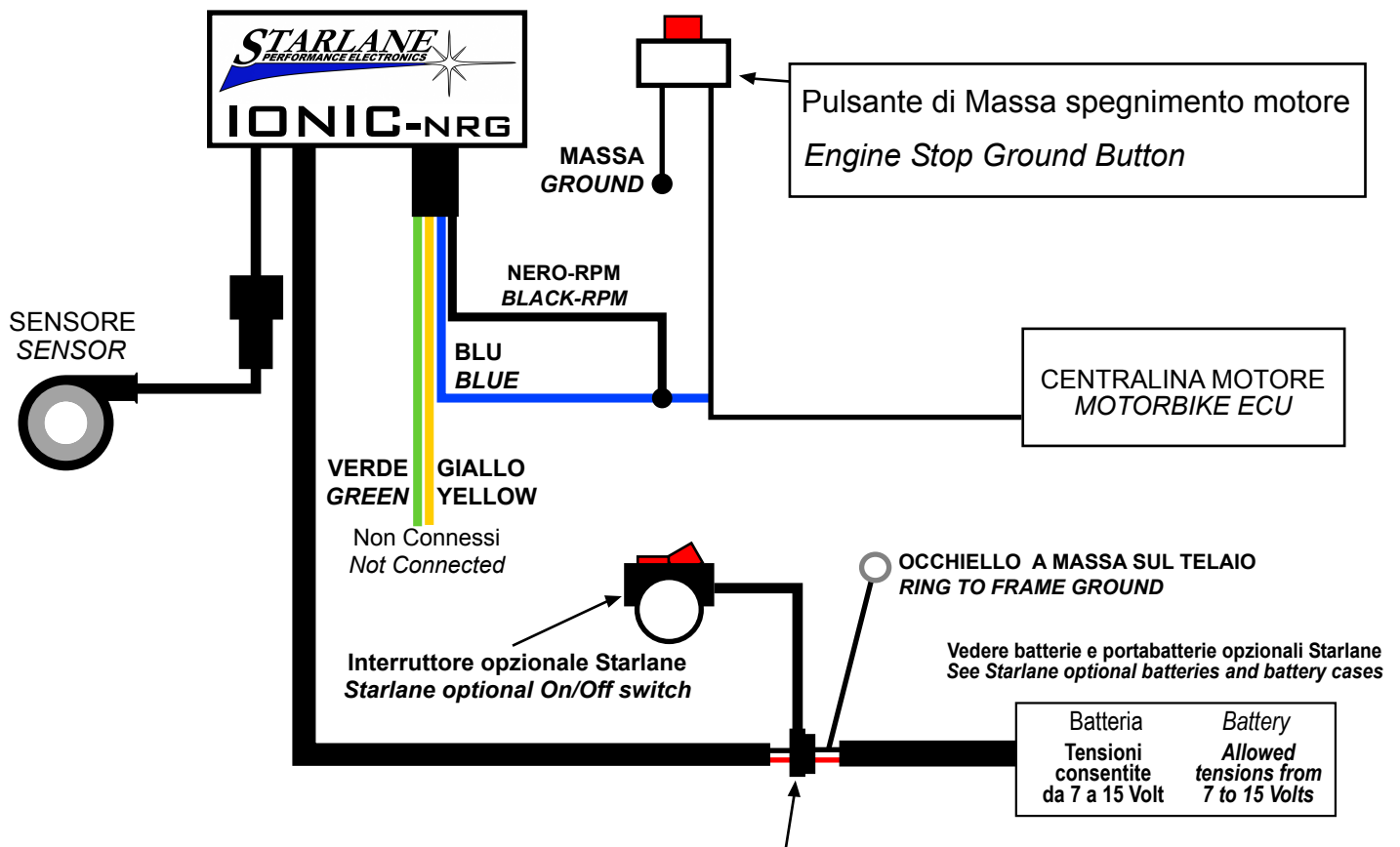
Se il filo blu di IONIC NRG viene collegato alla linea di alimentazione a 12V, il sistema si danneggerà.

Per installazioni su **HONDA CRF**, la presente soluzione è applicabile **SOLO** sulla versione a **CARBURATORE**, mentre, per la versione ad iniezione è necessario seguire lo specifico schema al punto -E-.

ATTENTION: This diagram can be used only on motorbikes with engine kill button to ground and not with 2 positions-switch on the power supply line.

If the blue IONIC NRG wire will be connected to the 12V power supply line, the system will be damaged.

For installation on **HONDA CRF**, this solution can be applied **ONLY** on the **CARBURETOR** version, while, on the fuel injection version you must follow the specific diagram at position -E-.



Nota: Qualora non si volesse installare la batteria opzionale, è possibile alimentare IONIC NRG collegando direttamente i fili NERO e ROSSO rispettivamente al NEGATIVO e al POSITIVO (bassa tensione - 12V) in uscita dal regolatore della moto. In tal caso, ovviamente, sarà necessario avviare il motore per effettuare le tarature di IONIC NRG.

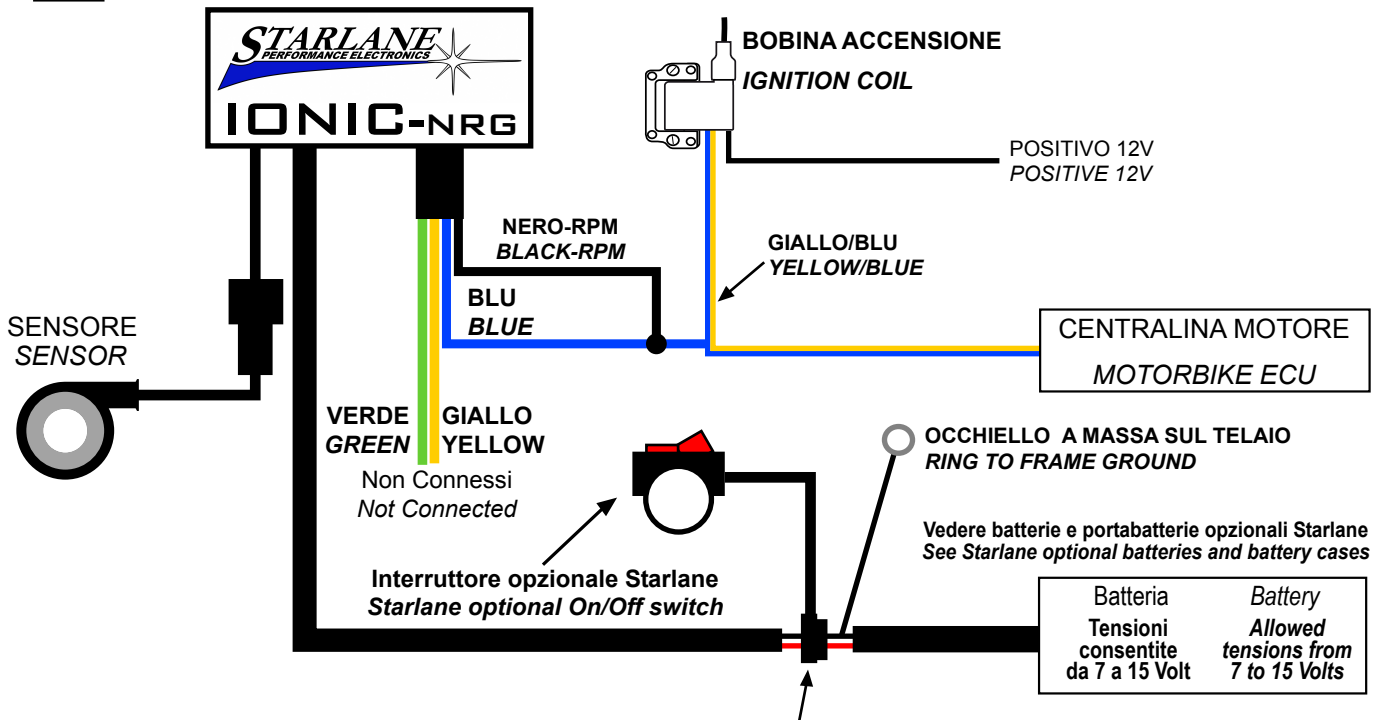
Note: If you do not want to install the optional battery, you can supply IONIC NRG directly connecting the BLACK and RED wires respectively to NEGATIVE and POSITIVE (low voltage - 12V) output of the bike rectifier. In this case, you'll need to start the engine in order to set IONIC NRG.

ATTENZIONE: il sistema può funzionare solo se il negativo dell'alimentazione viene messo in comune con l'impianto o il telaio del veicolo. L'accensione del veicolo con la mancata connessione del negativo a massa può danneggiare IONIC NRG.

ATTENTION: the system can work only if the negative on the power supply is connected to the original harness ground or to the vehicle frame. Starting the engine without ground connection can damage IONIC NRG.

-E-

HONDA CRF A INIEZIONE FUEL INJECTION HONDA CRF



Nota: Qualora non si volesse installare la batteria opzionale, è possibile alimentare IONIC NRG collegando direttamente i fili NERO e ROSSO rispettivamente al NEGATIVO e al POSITIVO (bassa tensione - 12V) in uscita dal regolatore della moto. In tal caso, ovviamente, sarà necessario avviare il motore per effettuare le tarature di IONIC NRG.

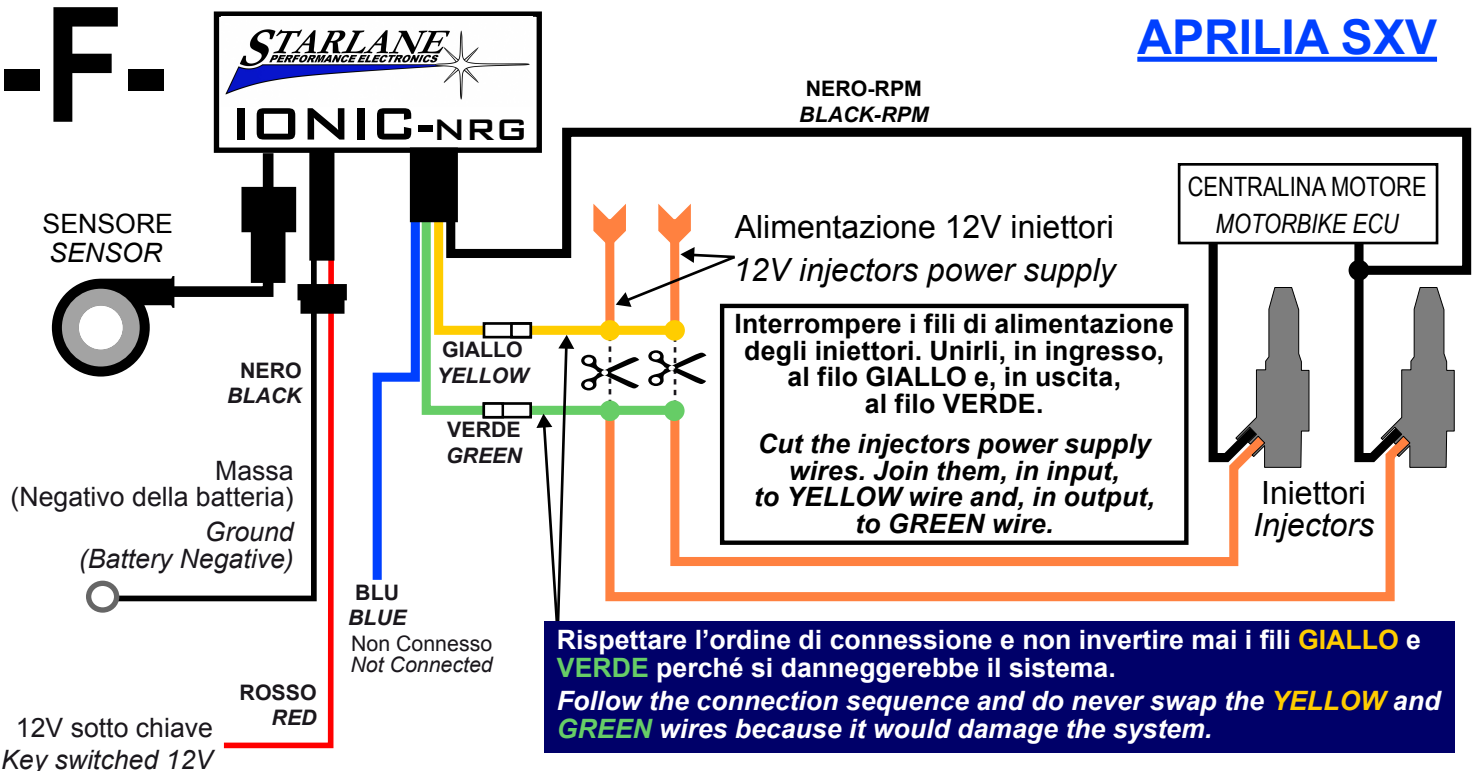
Note: If you do not want to install the optional battery, you can supply IONIC NRG directly connecting the BLACK and RED wires respectively to NEGATIVE and POSITIVE (low voltage - 12V) output of the bike rectifier. In this case, you'll need to start the engine in order to set IONIC NRG.

ATTENZIONE: il sistema può funzionare solo se il negativo dell'alimentazione viene messo in comune con l'impianto o il telaio del veicolo. L'accensione del veicolo con la mancata connessione del negativo a massa può danneggiare IONIC NRG.

ATTENTION: the system can work only if the negative on the power supply is connected to the original harness ground or to the vehicle frame. Starting the engine without ground connection can damage IONIC NRG.

-F-

APRILIA SXV



Rispettare l'ordine di connessione e non invertire mai i fili GIALLO e VERDE perché si danneggerebbe il sistema.
Follow the connection sequence and do never swap the YELLOW and GREEN wires because it would damage the system.