S3000

Instruction Manual

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1 TERMS OF USE

This guide deals with the functions and details of the Injepro product. Read it carefully so that you will be able to make the most of what the product can offer to you.

The installation of the product implies acceptance of our terms of use and indicates that you assume, at your own risk and responsibility, that the uses of the product do not violate any law or rule in the country that it will be used only for competition and/or closed track competitions purposes and is not intended for use on public roads.

2 INTRODUCTION

The INJEPRO S3000 module professionally manages 1 to 12 cylinder engines with high resolution full injection map.

Its configuration can be done through the dedicated software INJEPRO or by the module itself through the keys and display. It is also possible to configure by Bluetooth with the INJEPRO Connect Pro and Injepro Handset applications.

3 FEATURES

3.1 Signal Inputs

6 Signal inputs with white wires numbered 1 to 6, configurable between options:

1- TPS Signal;
2- AIR Tempeture;
3- Engine Tempeture;
4- External Map;
5- Narrowband Probe;
6- Two-Step Button;
7- Burnout Button;
8- Nitro Button;
9- Boost Button;
10- Fuel Pressure;
11- Oil Pressure;
12- Pressure Sensor Air Conditioner;
13- Air Conditioner Button;
14- Analog 0-5v;
15- RPM Reference.
16- Phase Sensor

Note: The digital signal inputs can be configured as negative or positive signal input.

3.2 Blue wires activation outputs

03 Negative activation outputs with the possibility of setting between options:

1- Injector 1;
2- Injector 2;
3- Injector 3;
4- PWM Nitro
5- Boost
6- PWM Variable Command
7- Idle Solenoid

Note: The activation current of these outputs is 5A

3.3 Gray wires activation outputs

08 Negative activation outputs with (1 to 6 with 5v, 7 and 8 with 12v) current supply, with the possibility of setting between the options:

1- Ignition A;

2- Ignition B;

3- Ignition C;

4- Ignition D;

5- Ignition E;

6- Ignition F;

7- Ignition Distributor 5v;

8- Ignition Distributor 12v;

9- Idle Solenoid;

10- Electro-fan 01;

11- Electro-fan 02;

12- Shift Light;

13- Variable Command ON/OFF;

14- Nitro;

15- Fuel Pump;

16- Tachometer;

17- Air Conditioning.

Note 1: Gray outputs 7 and 8 have 12V current supply and are recommended for distributor ignition.

Note 2: The maximum current of gray outputs is 1A.

Features of the S3000

- USB Type C port;

- Communication with the dedicated software;
- CAN Communication;
- Communication with the AIM, Racepak VNET, Racepak FT, Racepak, and Dash Pro panel and InjePro modules;
- Integrated MAP sensor of 7 bar;
- Integrated Bluetooth, (medium range without harness connector plugged 2 meters, with connector plugged 10 meters clear of obstacles);
- Led Indicator (Alerts).

Functions

- Correction by closed loop Lambda probe;
- Internal Datalogger;
- Semissequential injection for engines up to 6 cylinders, 4 cylinders semi-sequential with the possibility of a bench to supplement, Boost, nitro PWM or Command PWM;
- Three (03) different configurable injection maps (Benches A, B, C);
- Sequential ignition for engines up to 6 cylinders and wasted spark up to 12 cylinders;
- Complete Injection Map (Injection Time Map x Rotation x MAP)
- A complete map for PWM controls with 1300 definition points (Table 50x26), which can activate variable command (VTI), nitro progressive and/or PWM Boost;
- Injection and ignition correction by engine temperature and air temperature with adjustable 11-point scale;
- Ignition and injection correction by TPS;
- Ignition and injection correction by MAP;
- Quick injection adjustment and full ignition;
- Quick injection;
- Injection correction by battery voltage;
- Injection correction after start;
- Ignition point map for slow running;
- Injection and ignition map for engine starting;
- Two-speed electro-fan control by engine temperature and fuel enrichment;
- Timed fuel pump control;

- 3-stage Boost control with activation by button, time or RPM;
- Configuration for air conditioning compressor activation;
- Burnout function with enrichment and point delay;
- Two-step function with enrichment and point delay;
- Starting control by rotation and time;
- Fuel cut on deceleration (*cut-off*);
- Rotation limiter by ignition, ignition and fuel or only fuel;
- Active torque control for start-up by time, unlocking, RPM variation or gear change when in conjunction with EGS 2-PRO.
- Point delay and fuel enrichment for nitro;
- Visual warnings for excess speed, pressure, engine temperature, excess injector opening and engine switch-off for minimum oil pressure (using SPI sensor 10/13/17);
- Anti-Lag for turbo;
- Output for Shift-Light;
- Led with configurable Alert functions.

4 MODULE DIMENSIONS: 126mm x 86mm x 26mm

5 TIPS BEFORE THE INSTALLATION

1- Choose a good location to accommodate the INJEPRO S3000 power station preferably in the vehicle, avoiding humidity, excessive heat, and dirt;

2- Never pass the whip next to spark plug wires, coils, alternators, speakers, and sources that may cause electrical noise;

3- Always place protection for power whips, such as corrugated cover and retractable heat tube for wires;

4- All wires must be soldered and insulated with retractable heat tube;

5- Check that the engine grounding cable is securely connected and free from bad contact;

6- Use good quality sensors and components for correct operation of the INJEPRO S3000;

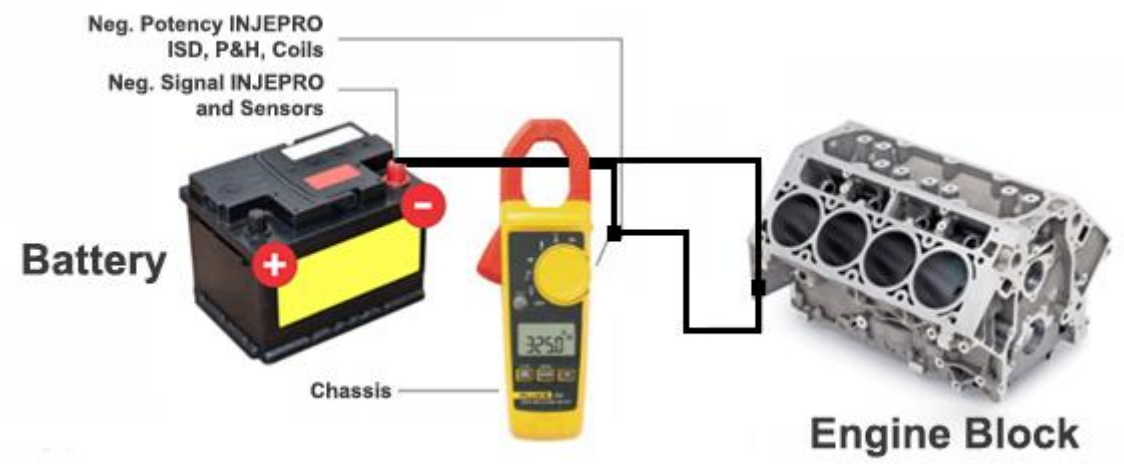
7- Use only spark plugs and resistive spark plug wires that equip original injected cars;

8- The power whip must have special attention because it is one of the main causes of problems in the operation of the engine.

6 GROUNDING

The grounding of the Injepro module as well as the chassis and engine of the vehicle are extremely important. To facilitate the formatting and arrangement of the cables as well as their gauges we create tables with voltage and current references where the objective is to have the best use of the module and to size the gauge according to its design. If you do not have the technical specifications of your starter engine or the total current consumption of the components you can use a Pliers Ammeter to make this measurement, just place the clamp transforming involving the cable and start with all the components actuated, in this way it is possible to identify the total current consumption and apply the correct gauge by following the tables below.

Example of current measurement using an ammeter.



Must consider the total current consumption at startup and not only of the starter engine.

Table A:

Considered values:

Battery voltage 12v

Battery voltage at start 10v

Conductor Resistivity 1 ,72E-008 Ω.m

Voltage drop Maximum on the cable 2.00%

Maximum Cable Length 1 meter

Cable Area	Cable Current
25 mm²	Up to 250 A
35 mm²	Up to 400 A
50 mm²	Up to 550 A
70 mm²	Up to 800 A
95 mm²	Up to 1000 A

Table B:

Considered Values:

Battery voltage 16v

Battery voltage at start 14v

Conductor Resistivity 1,72E-008 Ω.m

Voltage drop Maximum on the cable 2.00%

Maximum Cable Length 1 meter

Cable Area	Cable Current
16 mm²	Up to 250 A
25 mm²	Up to 400 A
35 mm²	Up to 550 A
50 mm²	Up to 800 A
70 mm²	Up to 1000 A

Batteries with average distances of 4 meters:

Table C:

Considered Values:

Battery voltage 12v

Battery voltage at start 10v

Conductor Resistivity 1,72E-008 Ω.m

Voltage drop Maximum on the cable 5.00%

Cable Length 4 meters

Cable Area	Cable Current
35 mm²	Up to 250 A
50 mm²	Up to 350 A
70 mm²	Up to 500 A
95 mm²	Up to 650 A
120 mm²	Up to 850 A
150 mm²	Up to 1000 A

Table D:

Considered Values:

Battery voltage 16v

Battery voltage at start 14v

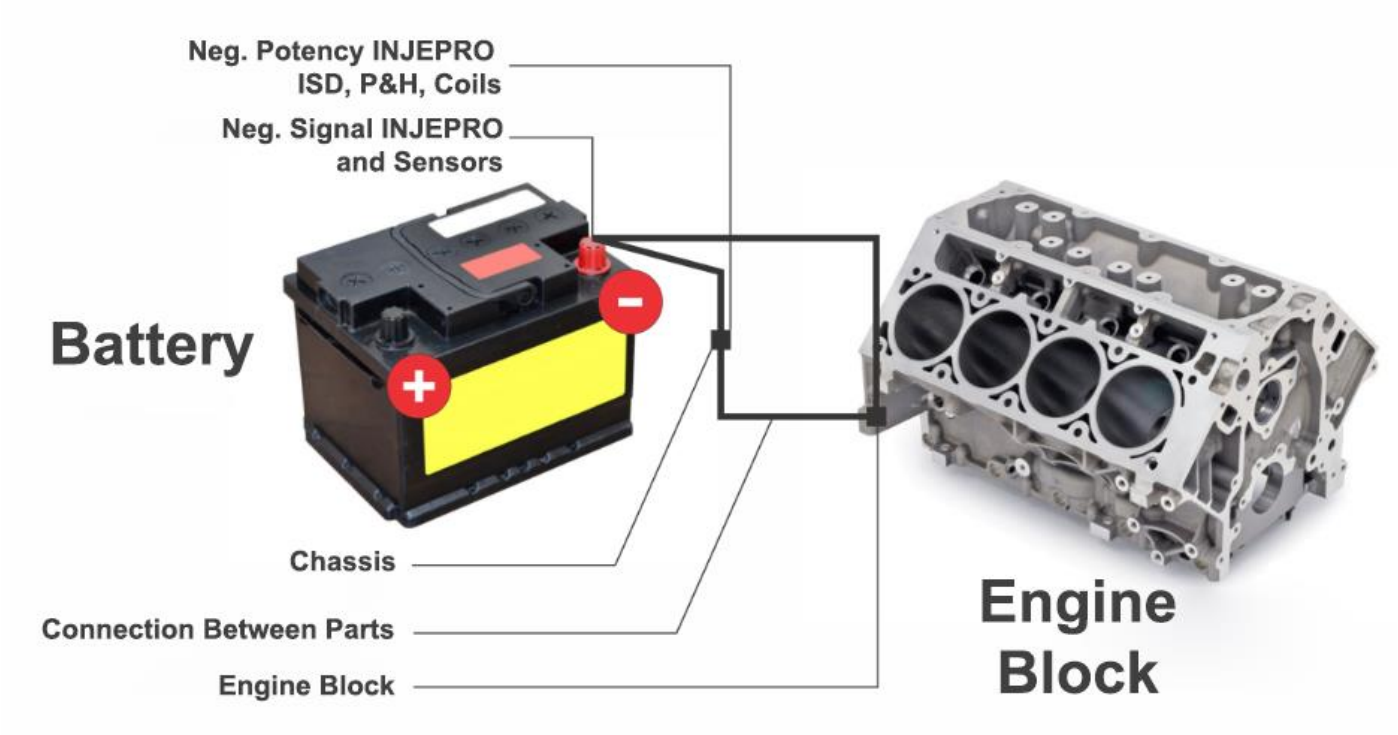
Conductor Resistivity 1,72E-008 Ω.m

Voltage drop Maximum on the cable 5,00 %

Cable Length 4 meters

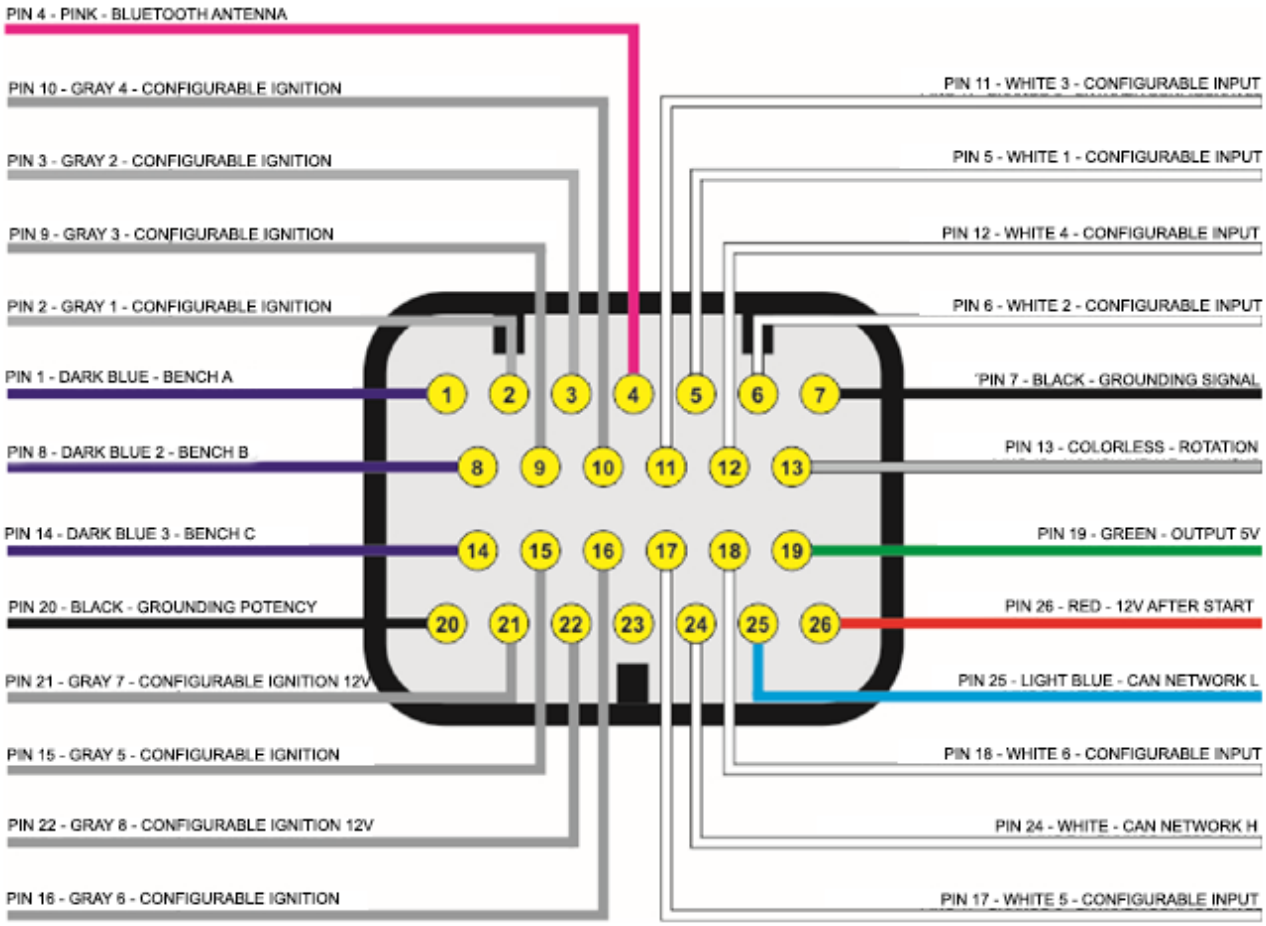
Cable Area	Cable Current
25 mm²	Up to 250 A
35 mm²	Up to 350 A
50 mm²	Up to 500 A
70 mm²	Up to 700 A
95 mm²	Up to 950 A
120 mm²	Up to 1000 A

The arrangement of the cables, as well as the location of the grounding points, must be as the image below:



7 ELECTRICAL CONNECTIONS

7.1 Rear View of 26-Way Connector



7.2 Default 26-way connector input configuration table

Pin	Wire Color	Gauge	Function
1	Dark Blue 1	0,75	Injector/Configurable
2	Gray 1	0,5	Ignition/Configurable
3	Gray 2	0,5	Ignition/Configurable
4	Pink	0,5	Bluetooth Aerial
5	White 1	0,5	Configurable Input
6	White 2	0,5	Configurable Input
7	Black	0,5	Signal Ground
8	Dark Blue 2	0,75	Injector/Configurable
9	Gray 3	0,5	Ignition/Configurable
10	Gray 4	0,5	Ignition/Configurable
11	White 3	0,5	Configurable Input
12	White 4	0,5	Configurable Input
13	Colorless	0,5	Rotation
14	Dark Blue 3	0,75	Injector/Configurable
15	Gray 5	0,5	Ignition/Configurable
16	Gray 6	0,5	Ignition/Configurable
17	White 5	0,5	Configurable Input
18	White 6	0,5	Configurable Input
19	Green	0,5	5V Output
20	Black	1	Power Ground
21	Gray 7	0,5	Ignition/Configurable /12v
22	Gray 8	0,5	Ignition/Configurable /12v
23	-	-	Not Connected
24	White	0,5	CAN NETWORK H
25	Light Blue	0,5	CAN NETWORK L
26	Red	0,5	12 V After start

The power supply of the INJEPRO S3000 module is made through 3 wires, with 1 positive after start, 1 power ground, and 1 signal ground.

7.3 Red Wire – Positive After start

The pin 26 is responsible for powering the control panel. Install a power relay of at least 30A for this connection. The positive powering relay pin 30, must come directly from the positive battery pole. In this same relay can be connected sensors using 12V power and other modules like WB-METER, EGT-METER, EBC-PRO, EGS-PRO, PEAK & HOLD, and Dash Pro.

7.4 Thick Black Wire – Power Ground

Pin 20 (black wire 1mm) is the power ground and must be connected directly to the chassis or engine block, do not connect the power grounds to the negative of the battery, they must be separated and connected to the chassis or in the engine block. It is very important that this ground has good electrical contact with the body/block; along with them can be connected the coil grounds that have integrated module, ISD, and PEAK & HOLD module grounds, probe heating and relay negative.

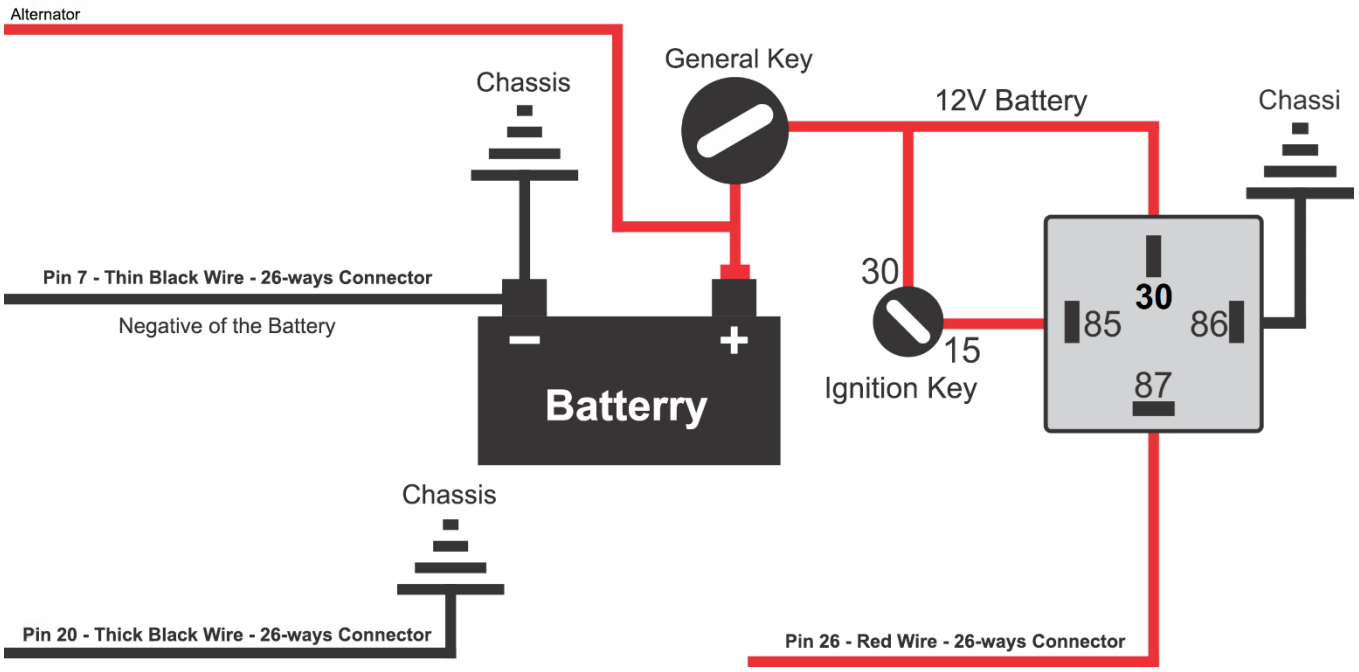
7.5 Black Wire – Signal Ground

Pin 7 (Black Wire 0.50mm) is the signal ground and must be connected directly to the negative pole of the battery, along with it must be connected all sensors negative such as engine temperature, air temperature, TPS, pressure sensors, probe signal negative, among others. Never connect this ground in the chassis or engine block.

Note: The S3000 features protection against reverse polarity power.

7.6 Master Key

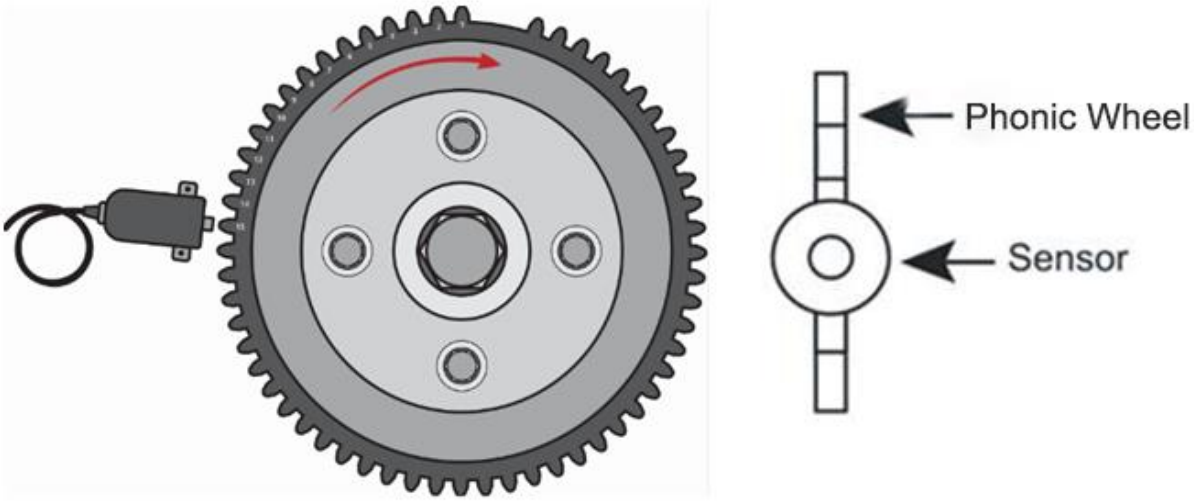
For competition cars or others that use the master key, it is very important that the key turns off the POSITIVE of the battery and NEVER the negative. Any electronic equipment must have its power interrupted through the positive. Disconnection made through the ground can cause irreparable damage to the equipment or failure/interference problems when operating. The negative of the battery must be connected directly to the chassis through a common braided mesh, easily found in stores in the auto industry, this mesh helps to take off the noise that may cause interference in electronic equipment. Right below has a figure that shows how the power supply wires and the master key wires must be connected.



8 INSTALLATIONS AND ADJUSTMENTS FOR PHONICAL WHEEL OR DISTRIBUTOR

8.1 Rotation Sensor

This is the main sensor for engine operation. It tells INJEPRO the angular position of the crankshaft so that the S3000 calculates the ignition and injection parameters and accurately applies the values defined on the map to the engine.
There are rotation sensors of inductive type or hall type.



8.2 Inductive Sensor

The inductive sensors generate a sine wave signal that varies according to the engine rotation. The signal strength varies depending on the mounting distance from the sensor to the teeth of the phonic wheel, so in some cases, it will be necessary to move closer or further the phonic sensor when appearing errors in the signal reading at the start or at high rotations. It is also possible to operate on the signal edge of the rotation sensor (rising or falling edge). The vast majority of the inductive type sensors with phonic wheel are aligned on the falling edge. In addition to this configuration, it is possible to operate on the sensor sensitivity with the level 1 sensitivity meaning lower, and level 4 sensitivity meaning higher, and this level of sensitivity is related to the number of failure teeth: how much larger is the fault, lower is the sensitivity. We also can set the reference voltage for the sensor, this allows the sharing of original injection rotation signal, where we can measure the reference voltage used in the rotation sensor and adjust the reading voltage of this signal. For directly sensor connection on S3000 is recommended a 0,2V reference.

You can find the inductive sensor on most original cars with 60-2 and 36-1 phonic wheels and can be 2 or 3 wires. If you have a 2-wire sensor, connect the red wire (shielded cable) to the pin 1 and the white wire (shielded cable) to the pin 2. If you do not collect the rotation signal, change the red wire to the white wire. And when you have a 3-wire sensor, 2 pins of it are enough for it works because the third pin is just an insulation mesh. Discover the level connection sensor using a multimeter, adjusting it to measure resistance in the 20K scale, and put a ferrule on the middle pin and the other on the corner pin. You must connect the red wire to the pin marking resistance with the middle pin, and connect the white wire (signal) to the middle pin. Connect the negative of the battery

or the insulation mesh of the shielded cable to the remaining pin. If the sensor has 3 wires and does not show any resistance between the pins, it may be burnt or be the hall type.

8.3 Hall Sensor

The hall-type sensors generate a square wave signal according to the size of the phonic wheel teeth and its intensity does not vary with engine rotation. This type of sensor is recommended for phonic wheels with few teeth or with a very small diameter, it necessarily has 3 wires and needs external power, so one pin will be the 5v or 12v positive. The other negative of the battery and the third pin is the signal. To measure the hall connection use a multimeter on the diode and put the pins in all the possible positions. When you find a position which the multimeter marks roughly 0,700v, the red ferrule's pin will be the negative of the battery, and the black ferrule's pin will be the signal, the third pin will receive 5v or 12v power.

The inductive or hall rotation sensor approximation must stay between 0,6mm to 1,2mm.

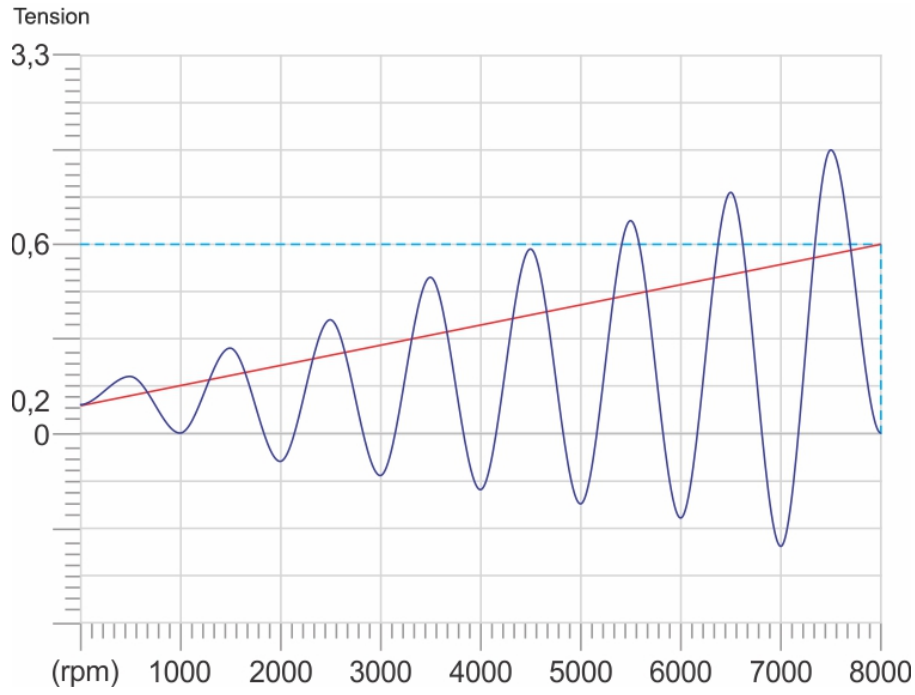
8.4 Reference Tension

This tension is the signal reference for the sensor reading. With these adjustments we can vary this tension according to the rpm, making possible to eliminate failures related to the sensor wave increase or even phonic wheel anomalies.

Reference Tension (Low RPM): This tension is related to the beginning of the rotation. If you been using an inductive sensor, must configure it closer to 0,2V. Otherwise, if you been using a hall sensor powered with 5V, configure it to 2,0V. In case of the hall powered with 12V, configure it to 2,5V. These values can vary according to the rotation sensor and its characteristics.

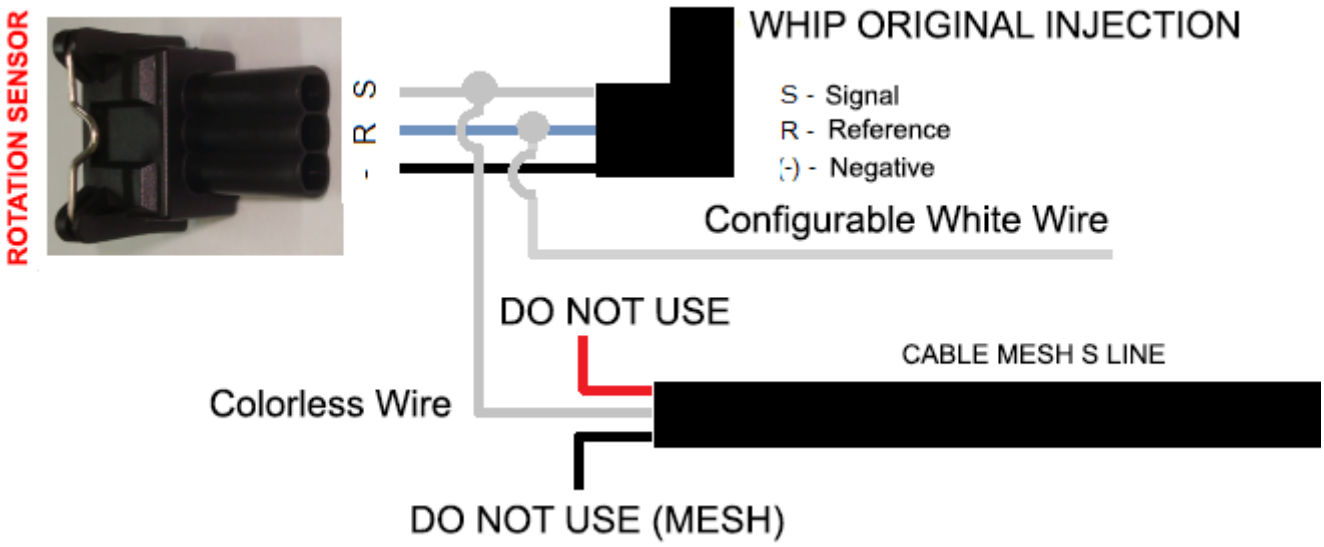
Reference Tension (High RPM): We know that with the rpm increase the sine waves of the inductive sensor increase considerably, so we should also increase the reference tension following its progression. If you been using an inductive sensor, use the final reference tension 0,6V. Otherwise, if you been using a hall sensor powered with 5V, the final reference tension must be closer to 2,5V, and for a hall sensor powered with 12V, the final reference tension must be closer to 3V. As the Low RPM tension, these values can also vary according to the final rpm, phonic wheel or sensor characteristics.

Example of a sine wave of an inductive sensor and low and high reference tensions.



8.5 Shared Rotation Sensor

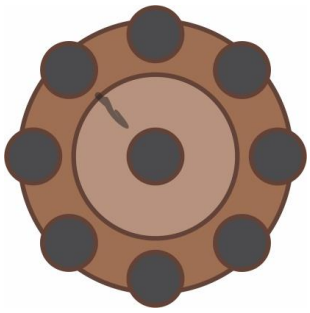
When we need to make a signal rotation sharing we should configure one of the white inputs as an "RPM Reference" and then connect this wire to the signal reference of the original sensor. The colorless wire of the Injection shielded cable must be connected to the signal wire of the rotation sensor. When we use this option the "Reference Tension (Low RPM)" and "Reference Tension (High RPM)" is ignored. A example of this connection is shown in the picture below.



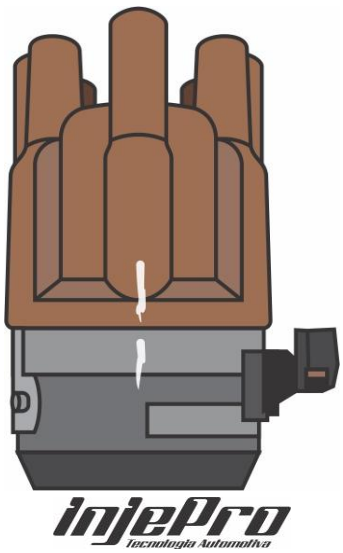
8.6 Distributor Adjustment

With the objective of generating better performance and operation, INJEPRO recommends for engines above 4 cylinders, with distributor, the following orientations:

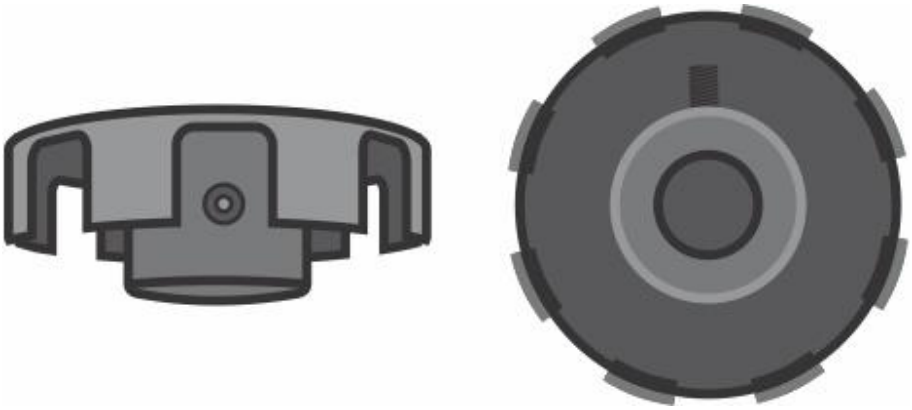
1- Put the engine into TDC (top dead center)
2- Check wich borne is responsible for sending power to the cylinder 1



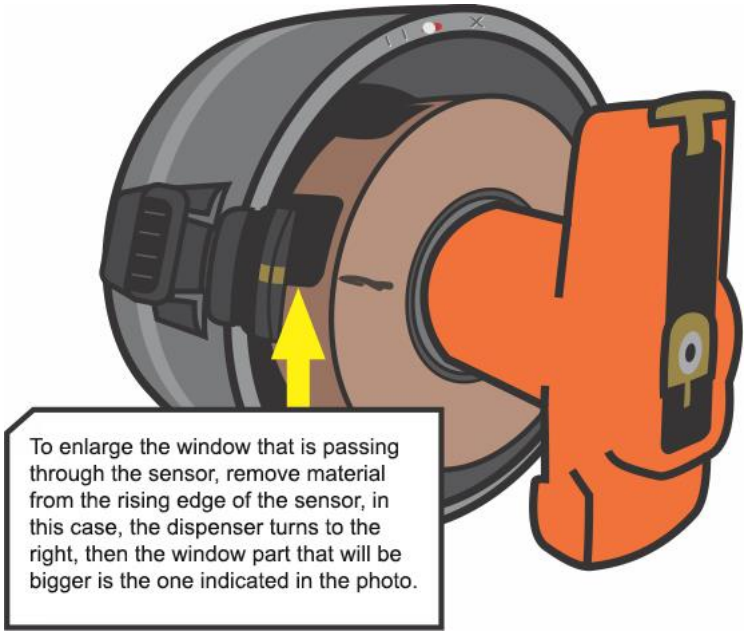
3- Mark that borne and distributor bodywork



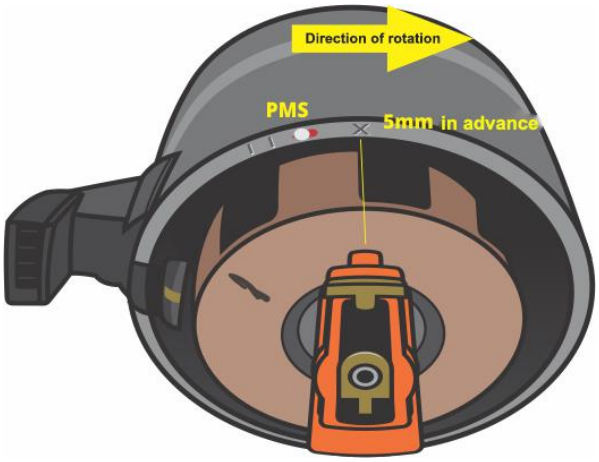
4- Unmount the distributor and create a mobile table relative to the distributor axis, this will allow the ideal adjustment of the ignition point without change the distributor position and the rotor position relative to the distributor cover.



5- Alignment of the table relative to the sensor is very important. This joint is responsible for engine ignition point and fuel injection in the right moment, so is necessary that this "window" is on average 1mm greater than one of the other sides for the module has TDC reference of cylinder 01. (Choose the side that will pass through the sensor to remove material).



6- Considering that this distributor spins to the right, is necessary to arrange all the parts to point the rotor on average 5mm ahead relative to TDC mark, as shown in the picture above. Considering that this distributor spins to the right, is necessary to arrange all the parts to point the rotor on average 5mm ahead relative to TDC mark, as shown in the picture above. This arrangement is important because when the engine is in high rotations, usually the ignition point map of the module is ahead, so when the module fire sparks the rotor will be before the TDC, thus have a high possibility to the spark fall on the previous cylinder, because this cylinder does not have compression. Moreover, the spark always looks for the easier route.



7- When everything is arranged and fixed, mount the distributor on the engine.

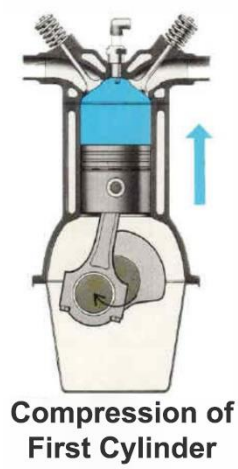
Note: Whenever you move or remove the distributor position, you must calibrate the point. You can find this adjustment on the "Sensor Calibration" section.

8.7 Connection Table of the most used Rotation Sensors

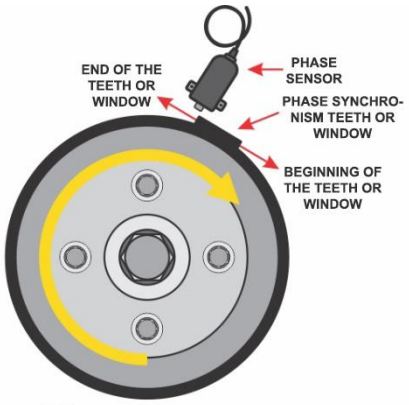
Sensor	Utilization	Type	Shielded Cable Connection S3000
FIAT/Magneti Marelli 3-wires	Uno, Palio, Siena 1.0, Strada	Inductive	Pin 1: White Wire Pin 2: Red Wire Pin 3: Shielded Cable Mesh
GM/VW/FIAT Bosch 3-wires	Astra, Calibra, Corsa 8V MPFI, Golf, Marea 5 cilindros, Omega 2.0, 2.2 e 4.1, S10 2.2, Silverado 4.1, Vectra, Passat	Inductive	Pin 1: White Wire Pin 2: Red Wire Pin 3: Shielded Cable Mesh
VW/Audi 20V Bosch 3-wires	A3 1.8 20V, Bora 2.0, Golf 1.6, Golf 1.8 20V	Inductive	Pin 1: Shielded Cable Mesh Pin 2: White Wire Pin 3: Red Wire
Ford 2-wires	Ka, Fiesta, Focus Zetec, Ranger V6	Inductive	Pin 1: Red Wire Pin 2: White Wire
Siemens 2-wires	Clio, Megane, Scenic	Inductive	Pin 1: Red Wire Pin 2: White Wire
VW/Total Flex	AP Power/Flex, GTI 16V	Hall	Pin 1: 5 or 12 Volts Pin 2: White Wire Pin 3: Shielded Cable Mesh
FIAT/E-Torq 1.8 16V	Bravo, Strada, Palio Sporting	Hall	Pin 1: Shielded Cable Mesh Pin 2: White Wire Pin 3: 5 or 12 Volts
Dense	Honda Civic Si	Hall	Pin 1: 5 or 12 Volts Pin 2: Shielded Cable Mesh Pin 3: White Wire

8.8 Phase Sensor

This sensor informs the TDC cylinder 1 to the S3000 (at the moment cylinder 1 is in bursting) to timing the drive outputs of both ignition and injection. Is required the use of the phase sensor when using the ignition in sequential mode. The installation of the phase sensor must be made on valve control or adjusted on the distributor where a complete cycle is concluded with two rounds on the crankshaft. The position of the sensor relative to the phonic wheel can be configured in two ways: If the phase is positioned in the round where the explosion is in cylinder 1 must be set to 0 to 360 degrees in the menu, if it is on the next round set to 361 to 720 degrees.



Compression of First Cylinder



Phase Sensor Position

8.9 Connection Table of the most used Phase Sensors

Sensor	Utilization	Type	Connector Connection
Audi/VW 3-wires	All of Audi/VW 1.8 20V	Hall	Pin 1: 5 Volts Pin 2: White/Red Wire Pin 3: Negative of the Battery
Bosch 3-wires	Astra 16V, Calibra, Citroen 2.0, Marea 5-cylinder, Omega 4.1, Peugeot 306 2.0 16V, Vectra GSI	Hall	Pin 1: 5 Volts Pin 2: White/Red Wire Pin 3: Negative of the Battery
FIAT/E-Torq 1.8 16V	Bravo, Strada, Palio Sporting	Hall	Pin 1: Negative of the Battery Pin 2: White/Red Wire Pin 3: 5 Volts
Dense	Honda Civic Si	Hall	Pin 1: 5 Volts Pin 2: Negative of the Battery Pin 3: White/Red Wire
EA 111	Gol G5, Saveiro G5	Hall	

Note: The sensor used in the S3000 for phase should be hall-type. It is not possible to use an inductive sensor to this function.

8.10 Engine Temperature Sensor

This sensor informs the S3000 the engine temperature. It is of the utmost importance to that the injections and ignition corrections are made in all the engine temperature ranges, mainly cold. It is very important for cold/hot engine starting settings. The installation of the sensor must be made at the water output from the cylinder head to the radiator, preferably at the original sensor in injected cars; or panel temperature on older cars. In engines air cooled or those what do not use water, it must be installed in the engine oil.

We recommend the sensors of the Fiat/VW line. (3,3 ohms at 20 degrees).

Codes:
VW/FIAT: 026.906.161.12 – MTE: 4053 – IG: 802

8.11 Air Temperature Sensor

This sensor informs the air temperature to the S3000. The use of it is optional and is useful to make corrections on the injection and ignition according to the admitted air temperature. For turbocharged engines, the installation must be done at the intake or in the pressurization. Engines Aspirated installation must be done on admission or near to TBI.

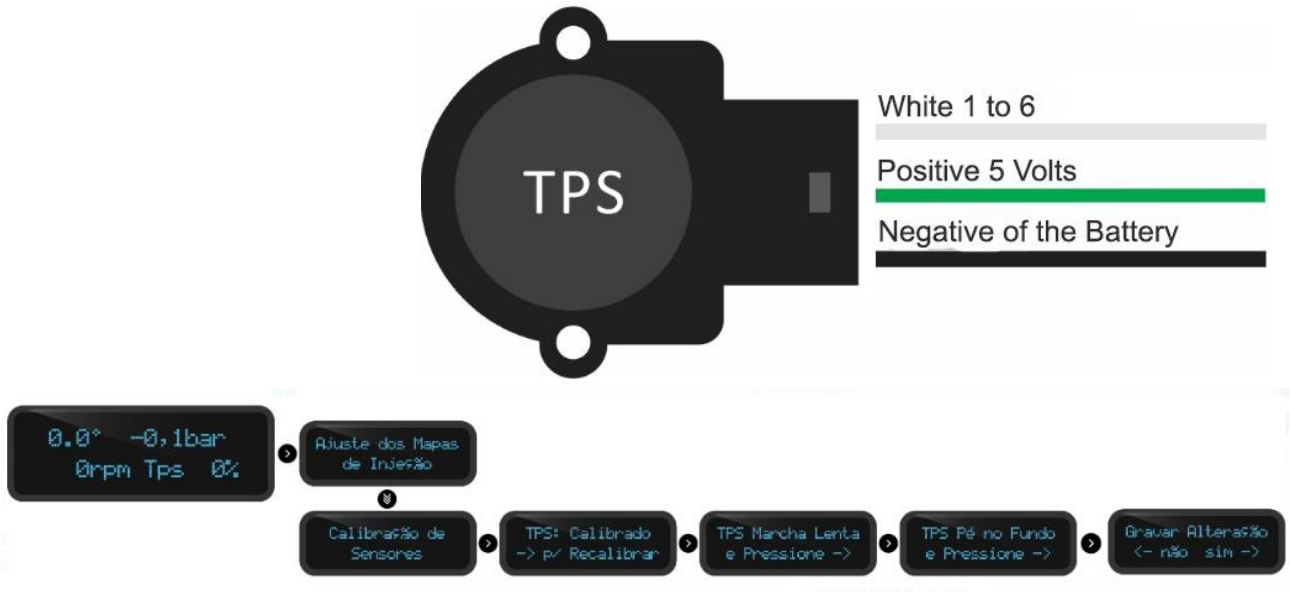
We recommend the sensors of Fiat line. (3,3 ohms at 20 degrees).

Codes:
FIAT: 75.479.76 – MTE: 5053 – IG: 901

8.12 Throttle Position Sensor (TPS)

This sensor informs S3000 the position of the throttle relative to the gas pedal. The use of it is of extreme importance when the main injection map is by TPS. In configurations where the main map is by MAP, the use of it becomes optional being useful only for idle corrections, fuel cut in deceleration, among others. We recommend using the original sensor that accompanies the throttle housing by of its fixation and proper course to the TBI model. In cases of adaptation, it is recommended to use the model that best fits the flap shaft. When the sensor is screwed on, it is ideal that in the idle position (TPS 0%) there is already a "precharge" in the sensor course, and when accelerating (TPS 100%) the sensor must not stop; this initial "precharge" is a prevention against oscillations in the sensor reading at the beginning of the pedal course (at the idle output) and the final clearance to prevent sensor damages.

The S3000 accepts any linear analog TPS sensor model. All sensor models have 3 wires (Power Supply 5 Volts, Signal and Negative). It is important that the sensor connection is made according to the manufacturer's specification. The correct connection and calibration allow the user to define the idle (TPS 0%) and the acceleration (TPS 100%). However, if you do not have the manufacturer's specification we will help you with that. To configure it, leave the TPS sensor whip disconnected, settle the multimeter to measure resistance in the 20K range, and look for two sensor pins where idling until maximum acceleration resistance does not vary. (These pins will be positive and negative sensor power). Then measure the resistance between the remaining pin and the power supply pins one at a time, the pin that has the greatest resistance at idle will be positive of the power supply, and the third remaining pin will be the signal.

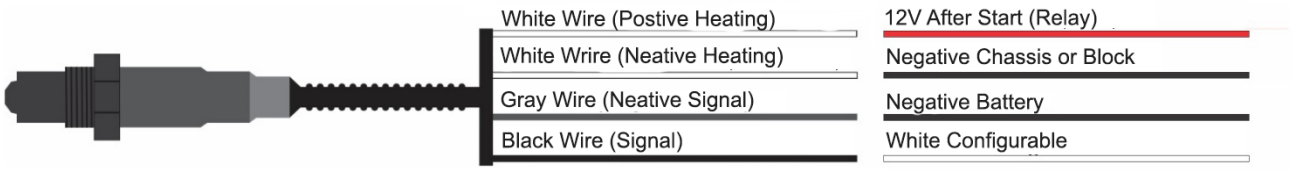


8.13 Narrowband Lambda Probe

This sensor informs INJEPRO the Air/Fuel ratio that results from the gases burnt on the exhaust. The signal of this probe type is measured in millivolts and can be directly connected on S3000 through one of the configurable white wires. It is very important to configure the main map and correct the injection, and once the best configuration is defined the user can enable the probe automatic correction and define values in millivolts from the S3000 table, to seek the best configuration in any condition of Charge X RPM. We recommend the utilization of a planar probe used in Flex original vehicles:

Codes:

Bosch code 0258010011 - NTK code OZA532-V1 - VW code 03090626Rz

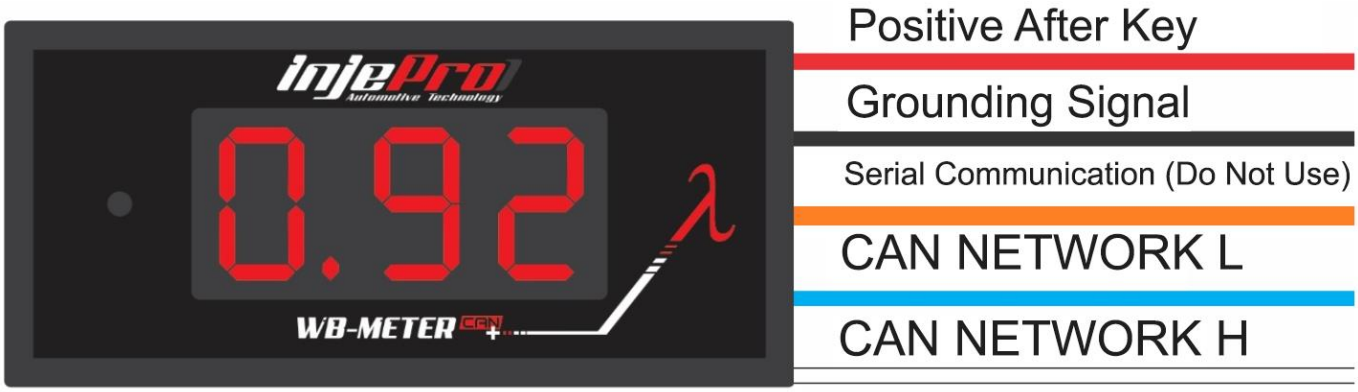


8.14 Wideband Lambda Probe

This sensor informs S3000 the Air/Fuel ratio that results from the gases burnt on the exhaust. To manage the wideband lambda probe is necessary to use the external conditioner WB-METER. It will inform S3000 of the lambda value relative to the mix. The communication between WB-METER and S3000 must be done only through CAN NETWORK. The Wideband Probe is very important to configure the main map and correct the injection, and once the best configuration is defined the user can enable the probe automatic correction and define values in lambda from the S3000 table, to seek the best configuration in any condition of Charge X RPM.

We recommend using the Bosch LSU 4.2 probe

Code: 0 258 007 351

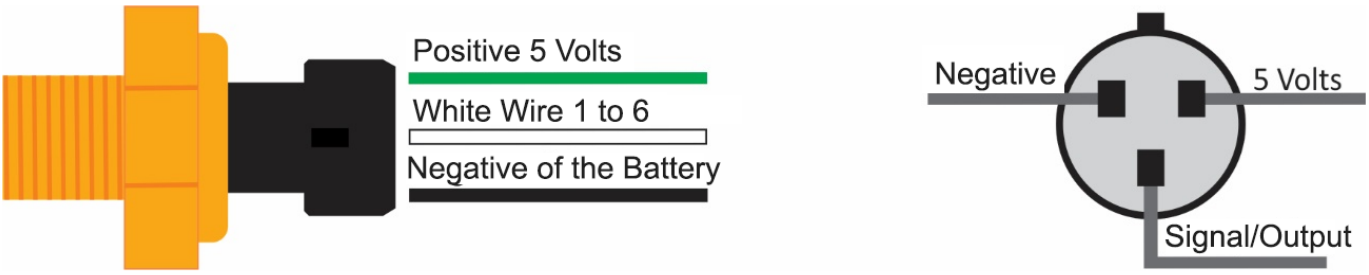


8.15 Pressure Sensor SPI-17, SPI-14 and SPI-10

These linear pressure sensors inform INJEPRO of oil pressure, fuel, water, exhaust back pressure, among others. The number beside the SPI refers to the maximum pressure of each sensor in BAR. Usually, it is installed for monitoring S3000 data logger and for security too. In the settings menu is possible to program a minimum oil pressure for engine switch-off, in case the oil pressure stays into a level under the programmed the engine immediately turn off, and to turn on again is necessary to reboot the ignition. The power supply of it is 5V and came through the negative of the battery. The signal must be connected in one of the 6 white inputs and manually configured.

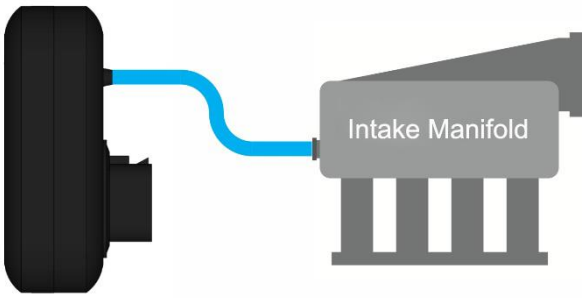
SPI sensors 10,14 and 17 are already calibrated on S3000

If you choose to use another pressure sensor, it is necessary to inform the voltage and the initial and final pressure of the sensor, as well as the voltage. This option is available in the Software.



8.16 Integrated MAP sensor

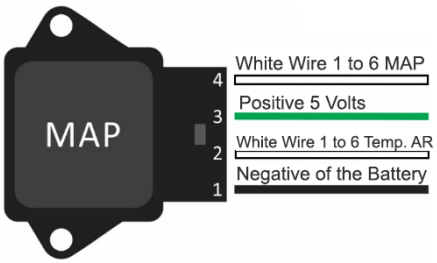
This sensor informs INJEPRO of the absolute pressure in the intake manifold. The reading of vacuum/pressure is made by a hose that must be connected to intake manifold between TBI and the head, preferentially away from the throttle valve for the reading be precise with the engine charge. The vacuum/pressure line should not be shared with valves or clocks. We recommend the use of a PU type hose with 6mm external and 4mm internal and the less as possible length to avoid reading mistakes on the sensor response. When using a multiple throttle valve system is necessary to interconnect all cylinders to have a correct and no variations reading.



8.17 External MAP Sensor

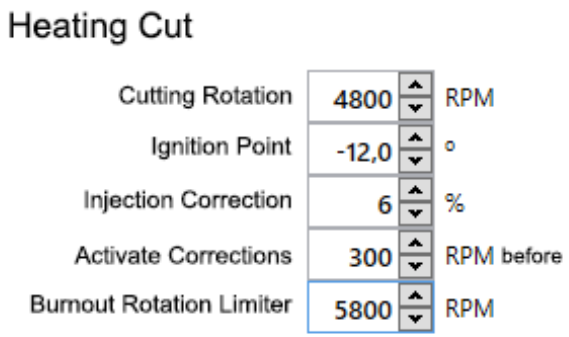
On aspirated engines that use original intake manifold, is possible to use the signal of the MAP sensor fixed on the intake. The signal of the original MAP can be connected to any of the 6 configurable inputs (white 1 to 6) and when the input is configured with an external MAP, the integrated MAP is ignored. After switch on and configure the input is necessary to calibrate the sensor for the reading stays on 0,0 BAR with the engine off.

Example of GM / VW MAP sensor connection with integrated air temperature:



9 Burnout Function:

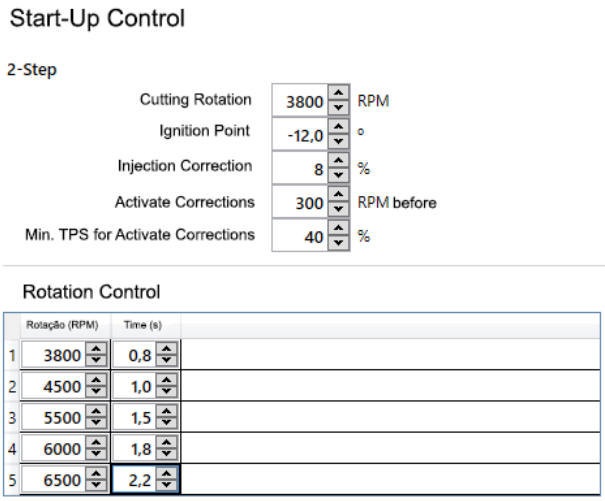
This function has been developed to facilitate the heating of the tires in vehicles that compete in the started mode and works as follows:



- Cutting rotation: it is the rpm that will limit the spin when the burnout button is pressed
- Ignition point: this is the point that S3000 will assume
- Injection correction: the S3000 will add this percentage to the main map
- Activate corrections: RPM to initiate corrections, in other words, before the cutting rpm corrections can be anticipated
- Burnout Rotation Limiter: limits the RPM as soon as the Burnout button is released.

10 Two-Step Function:

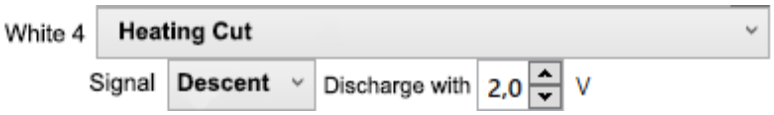
Start-up control is a function used to control the vehicle unlocking at the start moment, increasing the adhesion of the tires with the track. This function is widely used in cars for the sport.



- Cutting rotation when the two step button is pressed
- Ignition point that the S3000 will assume
- Injection correction, the S3000 will add this percentage to the main map
- RPM to initiate corrections, in other words, before the cutting rpm corrections can be anticipated
- Condition for entering ignition and injection corrections.

Previously we mentioned that the S3000 can receive positive or negative digital signal input, for this we must configure the S3000 as Rising if the voltage goes from 0v and it comes close to 12v and Descent if the voltage goes out from 12v and arrives near 0v; we can also configure this voltage as the basis for the drive, so if we have a resistance that makes it impossible for the signal to reach the module correctly this can be corrected.

Example: If the digital signal that should reach S3000 is 0v (descent), but instead is reaching 1,5v, so we can configure the input voltage as 2v so the S3000 understands that if appear a low voltage of 2v, the function will be activated.



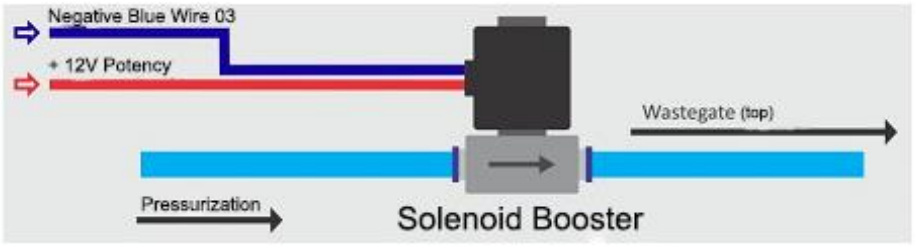
11 ACTUATORS

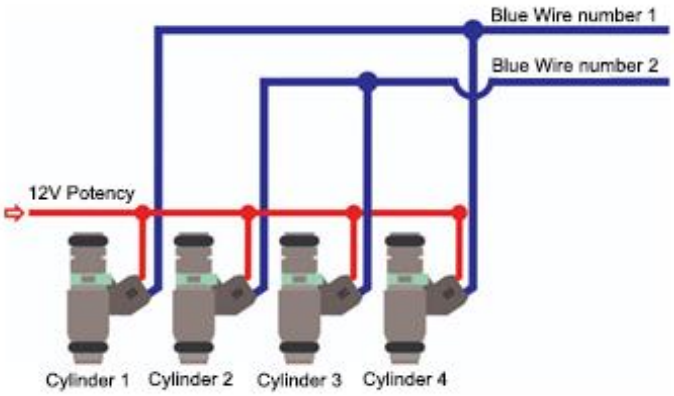
11.1 Fuel Injectors

The S3000 has 3 outputs for direct control of injectors. In each of them is possible de turn on up to 4 high impedance injectors (higher than 12 ohms) or 2 of medium impedance (8 to 12 ohms). To turn on a bigger number of high impedance injectors per output or low impedance injectors (2 to 8 ohms) you must use the external module PEAK HOLD.

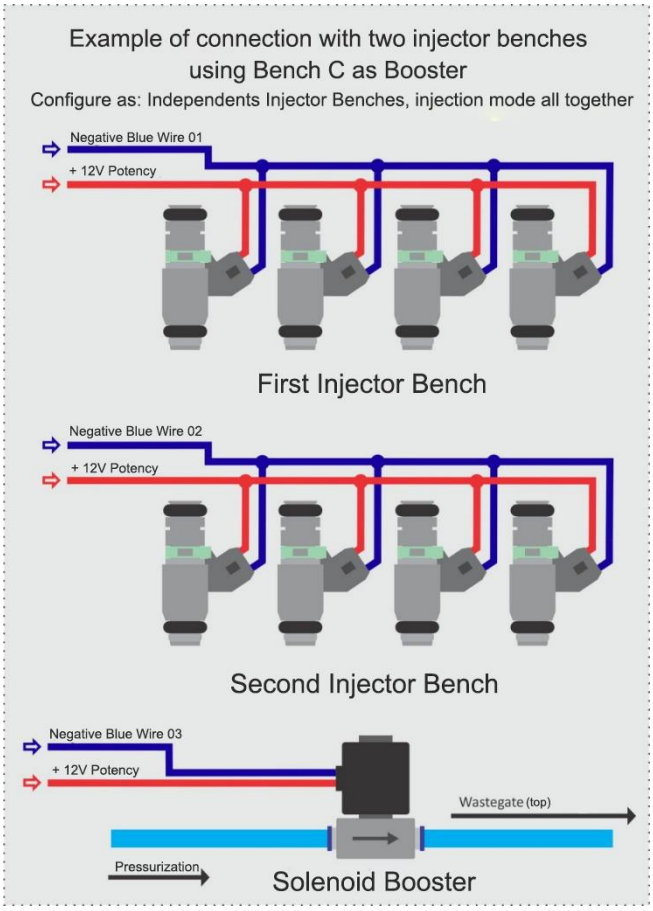
The outputs are composed of blue wires, numbered from 1 to 3, and must be connected semi-sequentially for best use of the engine. Using the even cylinders for each Injector Bench, for example in Bench A we will connect in cylinders 1-4 and Bench B in cylinders 2-3 in the case of a 4 cylinder engine with explosion order 1-3-4-2. As the S3000 has one more bench, it can be used for Nitro PWM, PWM Boost, PWM Command or supplementary injectors (Except in a 6-cylinder semi-sequential).

Below, has an example of semi-sequential connection for 4-cylinder engines in conjunction with the booster solenoid.

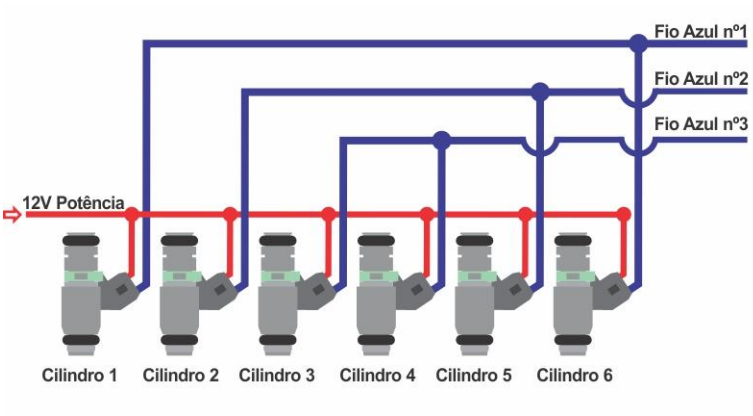




Below has an example with two separate injector benchs for 4-cylinder engines in conjunction with the boost solenoid.



If you choose to install the S3000 in a 6 cylinder engine it is also possible to make it semi-sequential using the 3 injector outputs and connect them on their respective even cylinders. The arrangement would stay as follows: Bench A - Cylinders 1-6, Bench B - Cylinders 2-5 and Bench C - Cylinders 3-4.



12 IGNITION COILS

The S3000 has 6 outputs for ignition control. The outputs can directly control coils with integrated ignition module; if the coil does not have an integrated module it is necessary to use ISD INJEPRO.

The outputs are composed of gray wires numbered from 1 to 6; when using the multi-coil system (one per cylinder), it is recommended to connect the outputs in the order of ignition. The type

of ignition (sequential or wasted spark) will be defined by the user in the dedicated software, or via the S3000 module in the menu "**Ignition Settings**".

The sequence of the ignition order is in alphabetical order and the sequence of the numbered wires follows the ascending order. Example: Ignition output A is related to the gray wire 1, ignition output B related to the gray wire 2, ignition output C related to the gray wire 3 and so on. However, the user can change this relation between output and wire. For example, the user can correlate Output B with gray wire 01, gray 02, gray 03 or gray 04.

12.1 Example of arrangement of the outputs and wires connections for individual coils

12.1.1 4-cylinder engine with ignition order 1-3-4-2 sequential connection (use phase)

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 03 - Ignition Output B – Gray Wire 02

Cylinder 04 - Ignition Output C – Gray Wire 03

Cylinder 02 - Ignition Output D – Gray Wire 04

12.1.2 4-cylinder engine with ignition order 1-3-4-2 wasted spark connection

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 03 - Ignition Output B – Gray Wire 02

Cylinder 04 - Ignition Output A – Gray Wire 03

Cylinder 02 - Ignition Output B – Gray Wire 04

12.1.3 Subaru 4-cylinders engine with ignition order 1-3-2-4 senquential connection (use phase)

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 03 - Ignition Output B – Gray Wire 02

Cylinder 02 - Ignition Output C – Gray Wire 03

Cylinder 04 - Ignition Output D – Gray Wire 04

12.1.4 Subaru Engine with ignition order 1-3-2-4 sequential wasted spark connection

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 03 - Ignition Output B – Gray Wire 02

Cylinder 02 - Ignition Output A – Gray Wire 03

Cylinder 04 - Ignition Output B – Gray Wire 04

12.1.5 Air engine with ignition order 1-4-3-2 sequential connection (use phase)

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 04 - Ignition Output B – Gray Wire 02

Cylinder 03 - Ignition Output C – Gray Wire 03

Cylinder 02 - Ignition Output D – Gray Wire 04

12.1.6 Air engine with ignition order 1-4-3-2 wasted spark connection

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 04 - Ignition Output B – Gray Wire 02

Cylinder 03 - Ignition Output A – Gray Wire 03

Cylinder 02 - Ignition Output B – Gray Wire 04

12.1.7 Marea 5-cylinder engine with ignition order 1-2-4-5-3 sequential connection (use phase)

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 02 - Ignition Output B – Gray Wire 02

Cylinder 04 - Ignition Output C – Gray Wire 03

Cylinder 05 - Ignition Output D – Gray Wire 04

Cylinder 03 - Ignition Output E – Gray Wire 05

12.1.8 Inline 6-cylinder engine with ignition order 1-5-3-6-2-4 sequential connection (use phase)

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 05 - Ignition Output B – Gray Wire 02

Cylinder 03 - Ignition Output C – Gray Wire 03

Cylinder 06 - Ignition Output D – Gray Wire 04

Cylinder 02 - Ignition Output E – Gray Wire 05

Cylinder 04 - Ignition Output F – Gray Wire 06

12.1.9 Inline 6-cylinder engine with ignition order 1-5-3-6-2-4 wasted spark connection

Cylinder 01 - Ignition Output A – Gray Wire 01

Cylinder 05 - Ignition Output B – Gray Wire 02

Cylinder 03 - Ignition Output C – Gray Wire 03

Cylinder 06 - Ignition Output A – Gray Wire 04

Cylinder 02 - Ignition Output B – Gray Wire 05

Cylinder 04 - Ignition Output C – Gray Wire 06

12.2 Example of an arrangement of the outputs and wires connections for double coils

12.2.1 4-cylinder engine with ignition order 1-3-4-2 with double coil

Cylinder 01 and 04 - Ignition Output A – Gray Wire 01

Cylinder 02 and 03 - Ignition Output B – Gray Wire 02

12.2.2 Subaru engine with ignition order 1-3-2-4 with double coil

Cylinder 01 and 02 - Ignition Output A – Gray Wire 01

Cylinder 03 and 04 - Ignition Output B – Gray Wire 02

12.2.3 Air engine with ignition order 1-4-3-2 with double coil

Cylinder 01 and 03 - Ignition Output A – Gray Wire 01

Cylinder 02 and 04 - Ignition Output B – Gray Wire 02

12.2.4 Inline 6-cylinder engine with ignition order 1-5-3-6-2-4 with double coil

Cylinder 01 and 06 – Ignition Output A – Gray Wire 01

Cylinder 02 and 05 – Ignition Output B – Gray Wire 02

Cylinder 03 and 04 – Ignition Output C – Gray Wire 03

12.2.5 V8 engine with double coil

Cylinder 01 and 06 – Ignition Output A – Gray Wire 01

Cylinder 03 and 05 – Ignition Output B – Gray Wire 02

Cylinder 04 and 07 – Ignition Output C – Gray Wire 03

Cylinder 02 and 08 – Ignition Output D – Gray Wire 04

Note: When the rotation reading is made by the distributor, or when you are using the distributor just to spread the spark, you must use the gray wire number 07 or number 08.

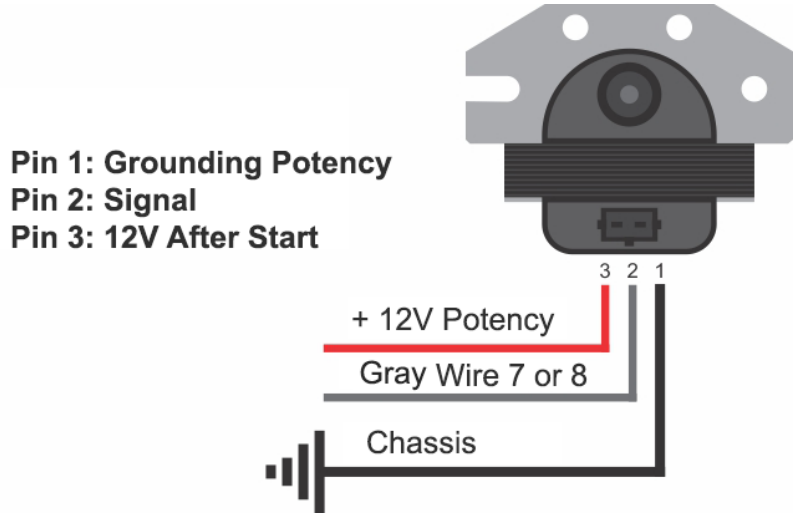
12.3 Examples of coil connection and arrangement:

12.3.1 Example 1

A system with only one 3-wire simple coil with integrated ignition module using the distributor to spread the spark. In this case, is not necessary to connect the ignition output on the **gray wire number 7 or 8**. In the settings menu of inputs and outputs, set this output as "**Distributor Ignition**" and in the settings menu of ignition set the ignition output as "**Distributor**" and select ignition signal as "**ISD/Coil with ignition**". In this type of configuration, the gray outputs from 1 to 6 are free to be used by other functions.

Recommended Dwell: 3,20 Initial X 2,80 Final.

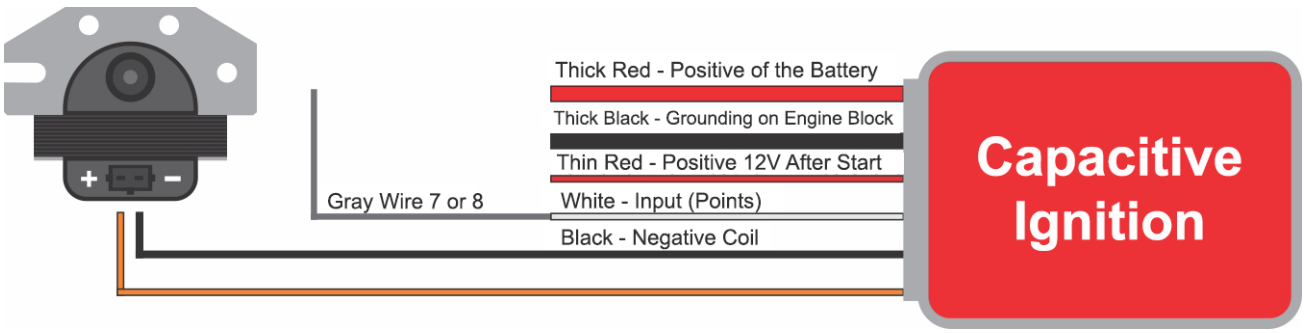
Tip: The higher the number of cylinders, the shorter the time for the coil to charge, discharge and rest, then monitor the temperature of the coil's ignition module and if it is overheating, quickly reduce the Dwell.



12.3.2 Example 2

A system with only one 2-wire simple coil without integrated ignition module and with spark amplifier (capacitive ignition module) using the distributor or phonic wheel to read the rotation, and using the distributor just to spread the spark. In this case, you must connect the ignition output on the **gray wire number 7 or 8**. In the settings menu of inputs and outputs set this output as "**Distributor Ignition**", and in the settings menu of ignition set the ignition output as "**Distributor**" and select ignition signal as "**MSD/Negative Signal**".

This type of module applies a fixed Dwell to the coil, making unnecessary configure this in the menu.

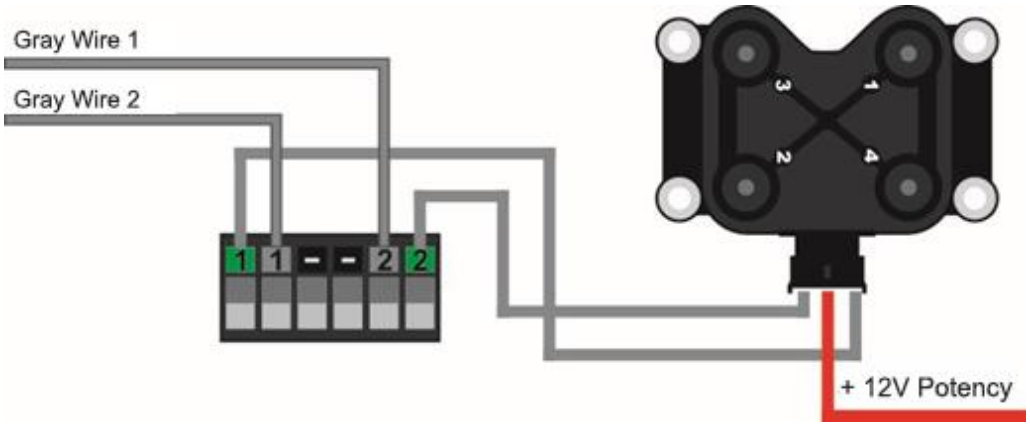


12.3.3 Example 3

4-cylinder engine with a double coil WITHOUT IGNITION DRIVE like an Astra/Vectra GM with the ISD-2 working at wasted spark. The gray wire 1 activate the ISD channel relative to cylinders 1 and 4, and the gray wire 2 activate the ISD channel relative to cylinders 2 and 3. The ignition setting must be

set as "**Wasted Spark**" in the settings menu of the ignition, then select the ignition signal as "**ISD/Coil with ignition**" and output ignition as "**Multi Coil**".

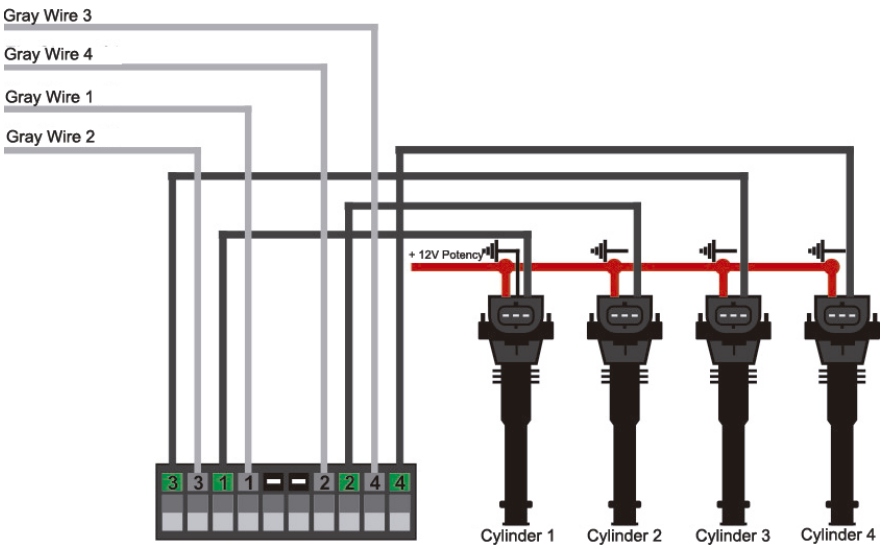
Recommended Dwell: 3,40 Initial x 3,20 Final.



12.3.4 Example 4

4-cylinder in-line engine (Explosion Order 1-3-4-2) with 4 coils WITHOUT IGNITION DRIVE of FIAT Marea, with the ISD-4 working at sequential mode. The inputs of ISD must be connected according to the ignition order of the cylinders; the ignition must be set as "**Sequential**" (this option only will be available when one of the inputs be configured as "**Phase Signal**"). Select the ignition signal as "**ISD/Coil with Ignition**" and the ignition output as "**Multi Coil**".

Recommended Dwell: 2,80 Initial x 2,20 Final.

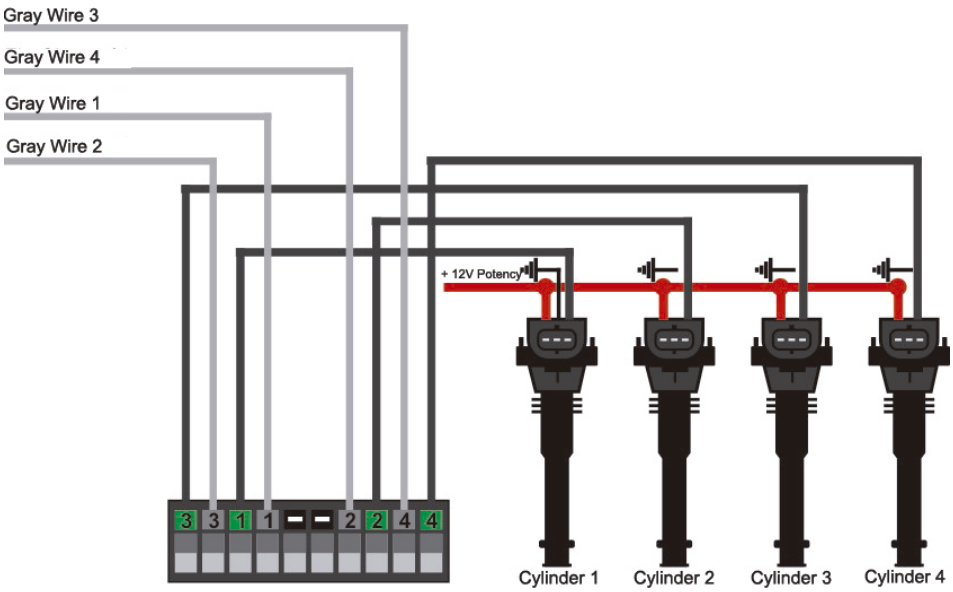


12.3.5 Example 5

4-cylinder in-line engine (Explosion Order 1-3-4-2) with 4 coils WITHOUT IGNITION DRIVE of FIAT Marea, with ISD-4 working at wasted spark mode using 4 ignition outputs. The ISD inputs must be connected according to the ignition order of the cylinders. The ignition setting must be set as

"**Wasted Spark**". Select the ignition signal as "**ISD/Coil with ignition**" and ignition output as "**Multi Coil**".

Recommended Dwell: 2,80 Initial x 2,20 Final.

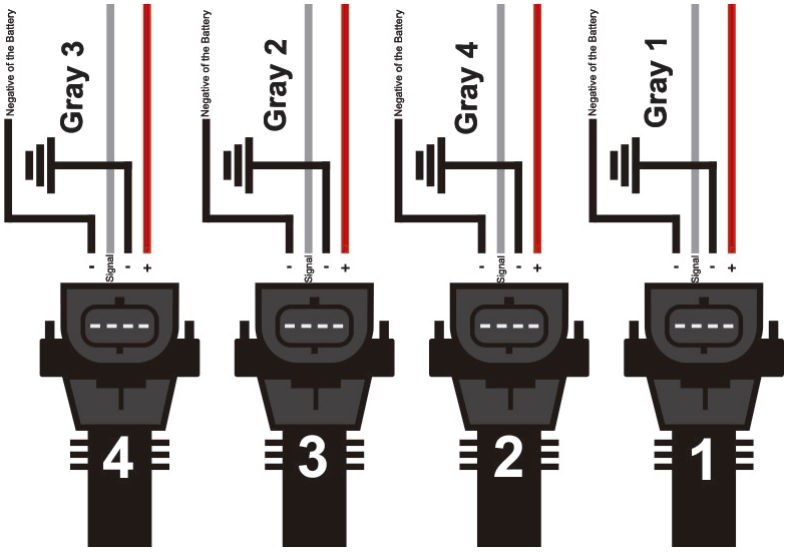


12.3.6 Example 6

Coil from Gol G6, Code 030905110b

4-cylinder in-line engine (Explosion Order 1-3-4-2) with 4 coils from Gol G6 at sequential mode. The gray wires must be connected according to the ignition order of cylinders. The ignition setting must be set as "**Sequential**" (this option only will be available when one of the inputs be adjusted as "**Phase Signal**"). Select the ignition signal as "**ISD/Coil with Ignition**" and ignition output as "**Multi Coil**".

Recommended Dwell: 2,60 Initial x 2,20 Final.

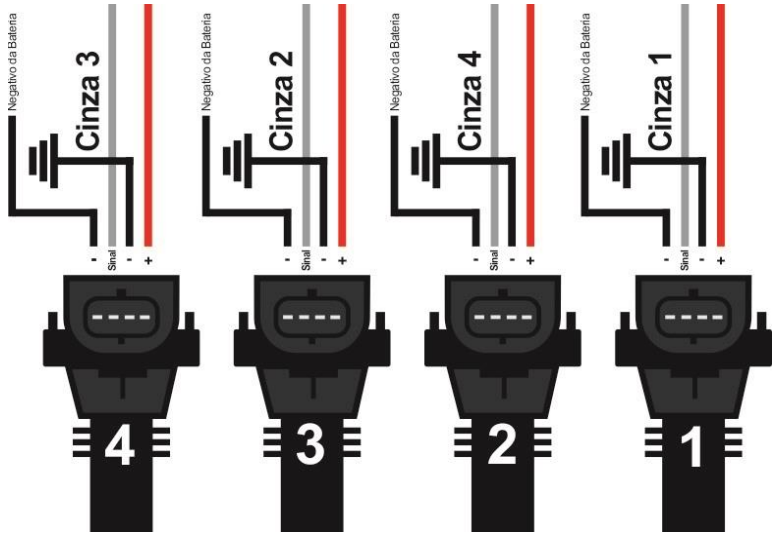


12.3.7 Example 7

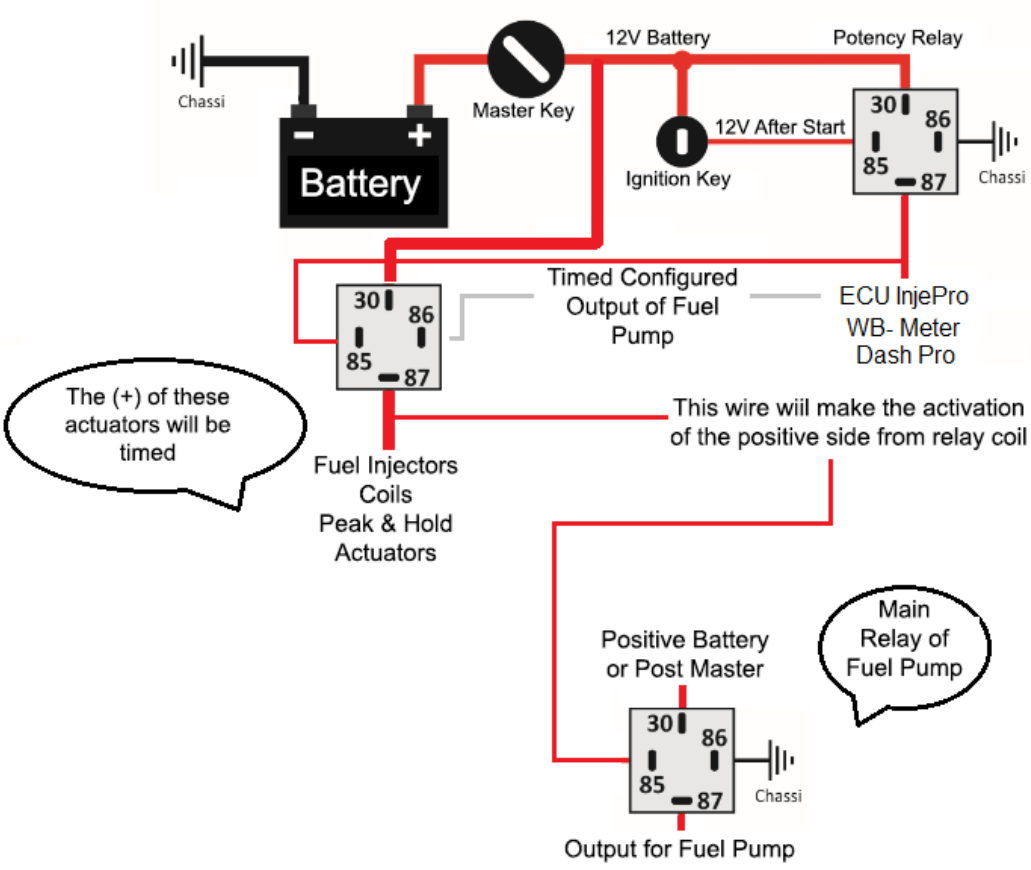
Coil from Gol G6, Code 030905110b

4-cylinder in-line engine (Explosion Order 1-3-4-2) with 4 coils of Gol G6 at wasted spark mode. The gray wires must be connected according to the ignition order of the cylinders. The ignition setting must be set as "**Wasted Spark**". Select the ignition signal as "**ISD / Coil with Ignition**" and ignition output as "**Multi Coil**".

Recommended Dwell: 2,60 Initial x 2,20 Final.



Tip for timing positive of fuel injectors and coils.



12.4 Connection table of most used individual coils

Coil	Utilization	Type	Pin Connections
FIAT/Bosch 0 221 504 014	Marea 5-cylinder 2.0 Turbo, 2.4	Without Ignition Module	Pin 1: Output of ISD Pin 2: Grounding Potency Pin 3: 12V After Start (relay)
VW/Audi 20V, BMW	Audi 1.8 20V Turbo, BMW 328, Golf 1.8 20V Turbo	Without Ignition Module	Pin 1: Output of ISD Pin 2: Grounding Potency Pin 3: 12V After Start (relay)
FIAT/Hitachi CM 11-202	Brava 1.8HGT, Marea 1.8 HGT	With Ignition Module	Pin 1: 12V After Start (relay) Pin 2: Grounding Potency Pin 3: Individual Output
Honda/Dense 099700-101	New Civic	With Ignition Module	Pin 1: 12V After Start (relay) Pin 2: Grounding Potency Pin 3: Individual Output
GM 12611424	Prisma, Cobalt, Onix, LS2 LS3, LS7 e LS9	With Ignition Module	Pin 1: Grounding Potency Pin 2: Grounding Potency Pin 3: Individual Output Pin 4: 12V After Start (relay)
Volkswagen 030905110b	Gol G6	With Ignition Module	Pin 1: Neg Battery Pin 2: Individual Output Pin 3: Grounding Potency Pin 4: 12V After Start (relay)

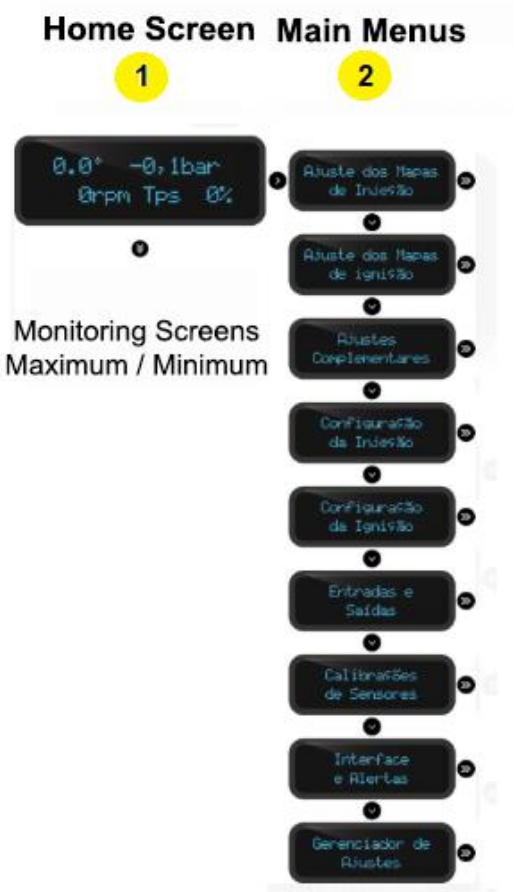
12.5 Connection table of most used double coils

Coil	**Utilization**	**Type**	**Pin Connections**
FIAT/Bosch F000ZS0103	Uno 1.0, 1.5, Palio (two outputs)	Without Ignition Module	**Pin 1:** Output of ISD **Pin 2:** 12V After Start (relay)
GM/Bosch F 000 ZSO 203 F 000 ZSO 205	Astra, Ipanema, Kadett, Vectra 8V	Without Ignition Module	**Pin 1:** Output 1 of ISD **Pin 2:** 12V After Start (relay) **Pin 3:** Output 2 of ISD
GM/FIAT/Bosch F 000 ZSO 213 F 000 ZSO 222	Celta, Corsa, Gol AP Flex, Montana, Vectra 16V	Without Ignition Module	**Pin 1:** Output 2 of ISD **Pin 2:** 12V After Start (relay) **Pin 3:** Output 1 of ISD
VW/Bosch 4-wires F000ZS0212	Audi A3 e A4, Gol 1.0 16 Turbo, Gol/Golf 1.6 EA 111	With Ignition Module	**Pin 1:** Green/Black Wire **Pin 2:** 12V After Start (relay) **Pin 3:** Gray/Black Wire **Pin 4:** Grounding Head
GM/Delphi (rounded)	Corsa MPFI from 1998 up to 2002	With Ignition Module	**Pin A:** Gray/Black Wire **Pin B:** Green/Black Wire **Pin C:** Grounding Head **Pin D:** 12V After Start (relay)

GM/Delphi (square)	Corsa MPFI up to 1997	With Ignition Module	Pin 1: 12V After Start (relay) Pin 2: Grounding Head Pin 3: Green/Black Wire Pin 4: Gray/Black Wire

S3000 KEYBOARD

13 VIEWING OF THE S3000 MAIN MENUS

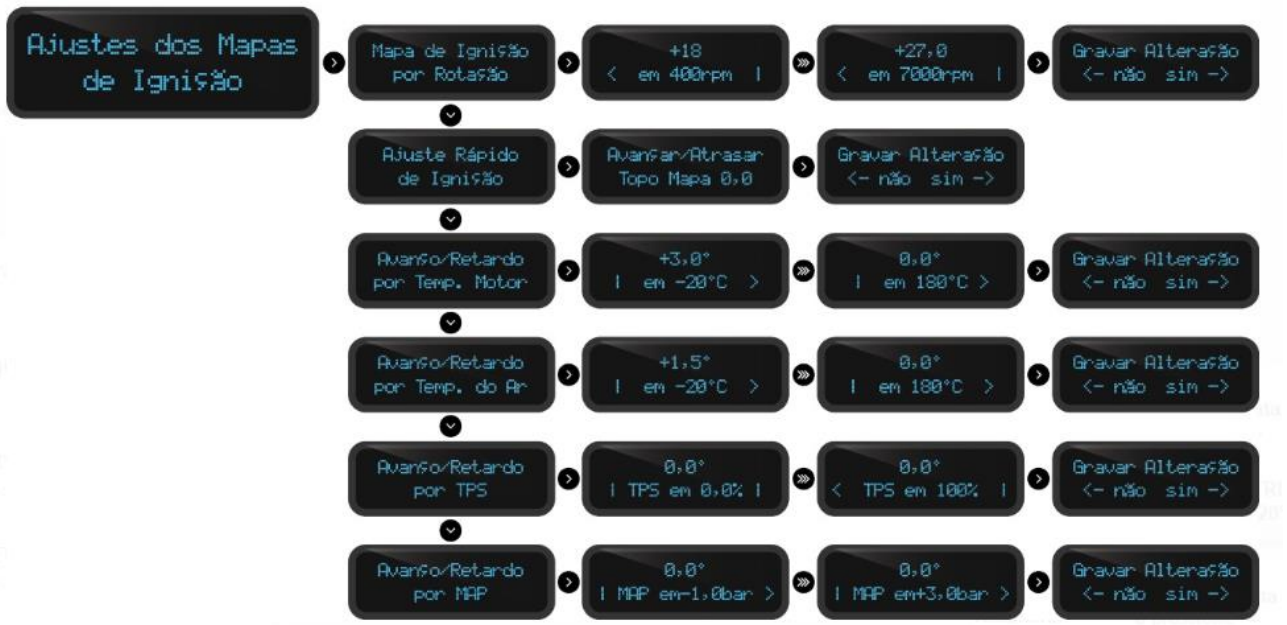


14 SETTING OF INJECTION MAPS:

This menu above is responsible for all fuel injection control such as Map Benching A, Benching B, and Benching C or Map A / B or A / B / C when semi-sequential to 4 or 6 cylinders.

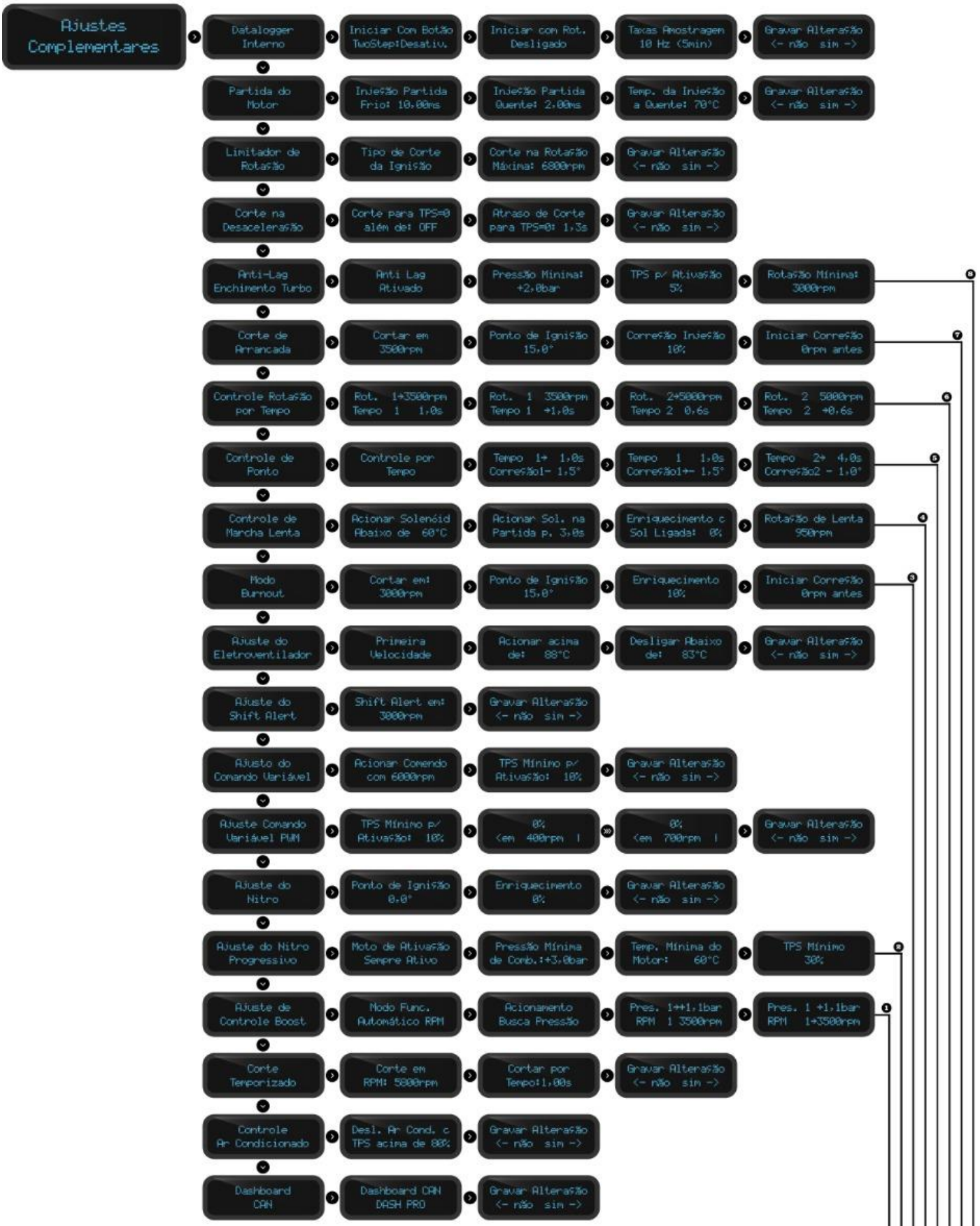
In the Main Map of Injection tab is the injection map being possible to configure it in ms or (%); both are at the top of the screen.

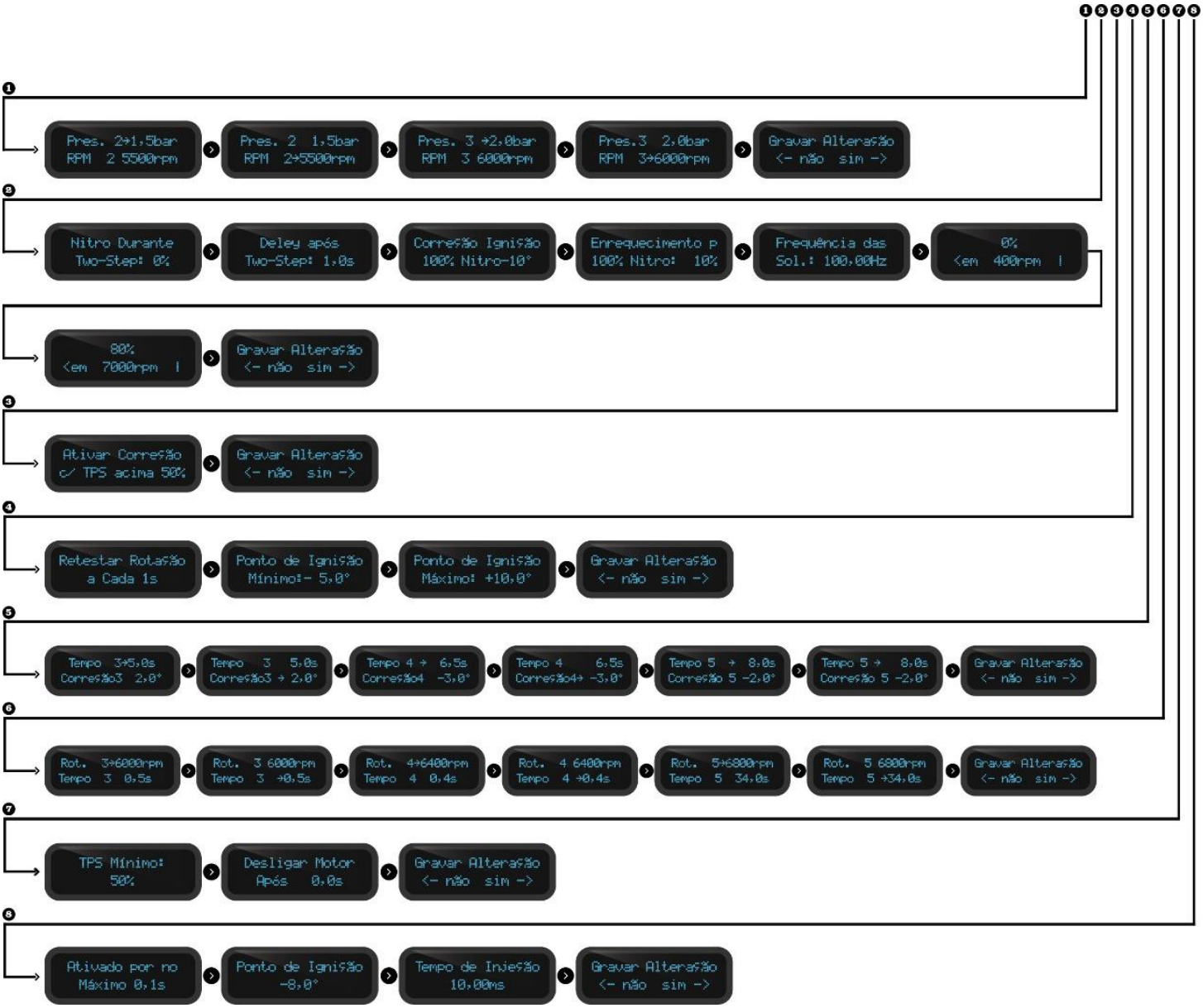
15 SETTING OF IGNITION MAPS:



In the setting of ignition maps, the user has total control of the engine point, as well the creation of point main map and ignition corrections by engine temperature, air, TPS, and Map. Also is possible to do the advancement or retardment in every map by making a quick injection adjustment.

16 ADDITIONAL SETTINGS:





In this menu, it is possible to adjust the drive commands of the electro-fan, Shift Alert, Variable Command, PWM Command, Nitro, Progressive Nitro and Air Conditioning Compressor Control. However, to have access to this adjustment it is necessary that an output has been destined to it, otherwise the message that appears will be the following

17 INJECTION SETTING:

In the injection settings, you can define the maximum rotation of the engine. It is according to this rotation that the Duty Cycle will be calculated, ie the opening percentage of the injector related to the engine cycle (RPM).

Here, you can also define if the management will be by MAP or TPS. If MAP is selected, the MAP pressure will be set on the "Maximum Turbo Pressure" screen. In the S3000 it is possible to set a positive pressure even for aspirated cars, this is very common when the assembly has a very efficient air collection.

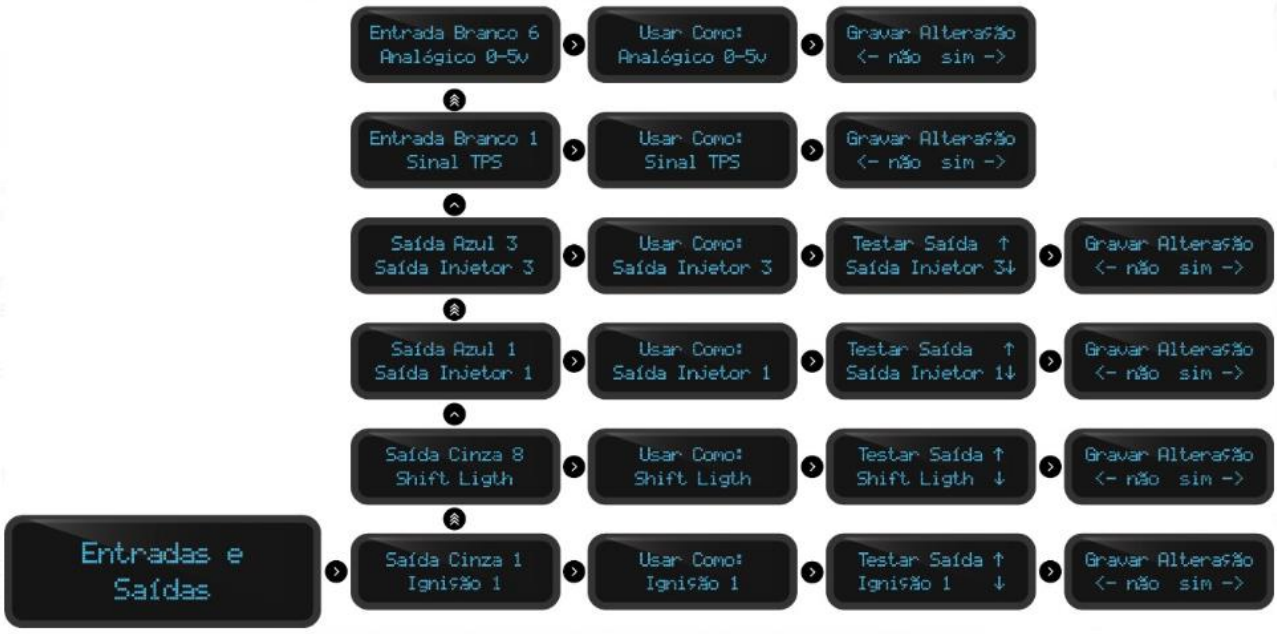
18 IGNITION SETTING:

The menu above is responsible for the main ignition configuration where we will define the number of cylinders and the mode of rotation capture. This is undoubtedly the most important configuration of the module. If it is not set correctly the engine will not work and may still cause serious damage to the engine or its components.

In the field "Ref. Voltage " (Reference Voltage) it is possible to customize it or to choose the option "Sensor Pattern" by clicking only down.

The signal edge refers to the way the S3000 will receive the rotation signal whether it will be on the rising edge of the teeth or on the descent.

19 INPUTS AND OUTPUTS:



Because the outputs and inputs are configurable the possibility of signal capture and actuator management increases considerably. Thus the user has the possibility to use the largest number of inputs and outputs, and will not get stuck in those fixed inputs or outputs. All available options for each wire are described in "Features".

20 SENSOR CALIBRATION:

In the field of sensor calibrations, it is possible to calibrate TPS and Engine Ignition. The calibration of TPS must be done before running the engine because if it is out of calibration it can influence the adjustment of idle or Fast Injection.

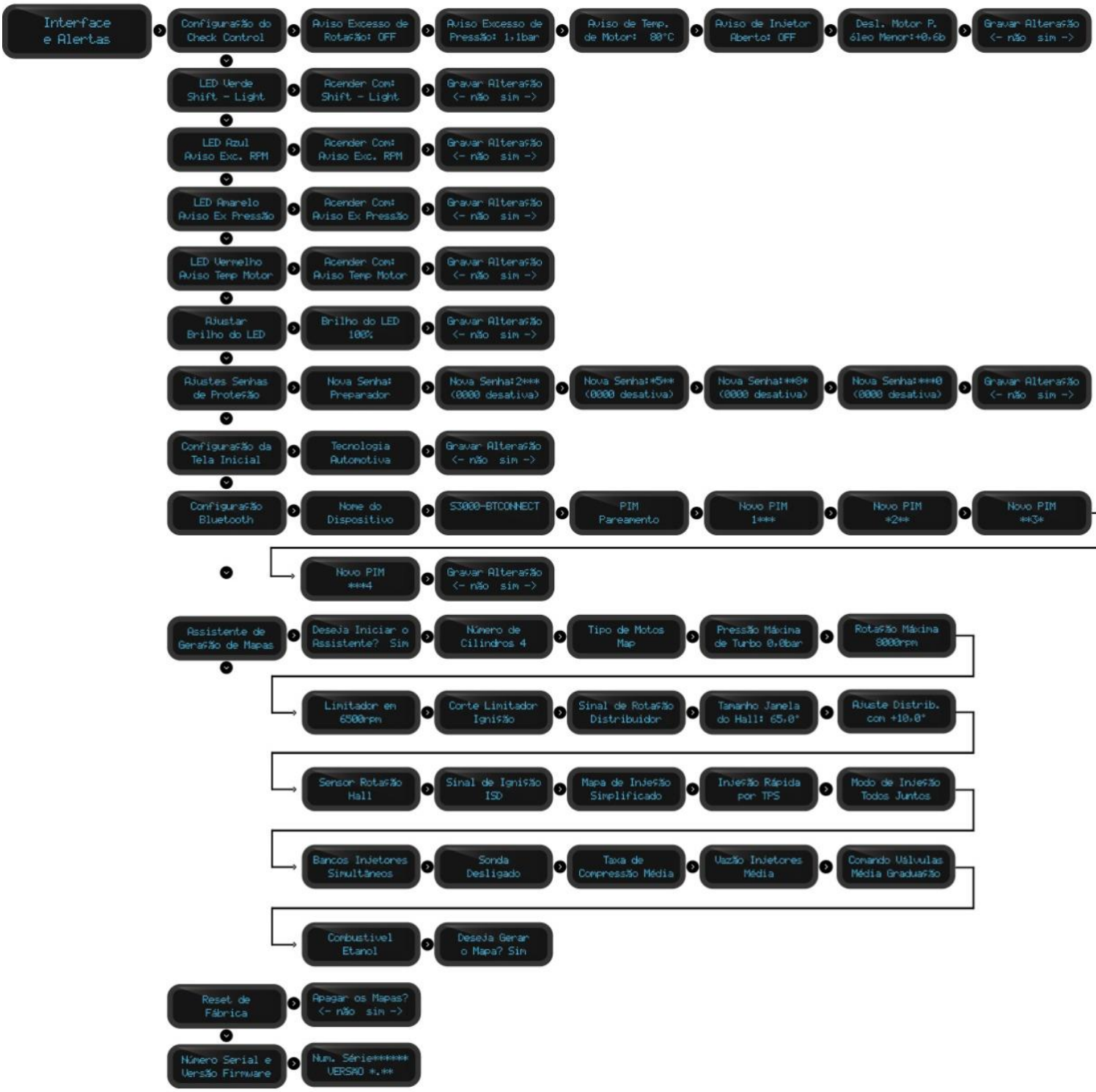
When the engine is running and stable, the ignition point must be calibrated. To do this, go to the "correct 0.0° until reading 20°" menu (if using Phonic Wheel) then S3000 will set the point at 20°. Then you should pass the point gun and check the reading. If it matches the same 20° or 40° (wasted spark) the calibration is correct. Otherwise, adjustment can be made by pressing the up button to add point to the engine, or down to take out point of the engine. This should be done until you get 20°. If this difference exceeds 6 degrees in the case of a 60-2 phonic wheel, probably one tooth is out of the correct alignment. For example, the alignment is on the 16th tooth when it should be on the 15th tooth.

When working with a distributor, the option we will find after the "Calibrate the Ignition" field will be "CALIBRATE DISTRIBUTOR WITH 20°", so when we are in this screen the S3000 sets the point to 20° and the distributor must be advanced or withdrawn until the point gun shows 20°.

Note: When configured as a distributor, you should calibrate the window size before calibrating the ignition; if this calibration is not made, may happen a divergence at the ignition point.

To calibrate the window size, hold the right key for approximately 2 seconds on the screen "Hall Window Size".

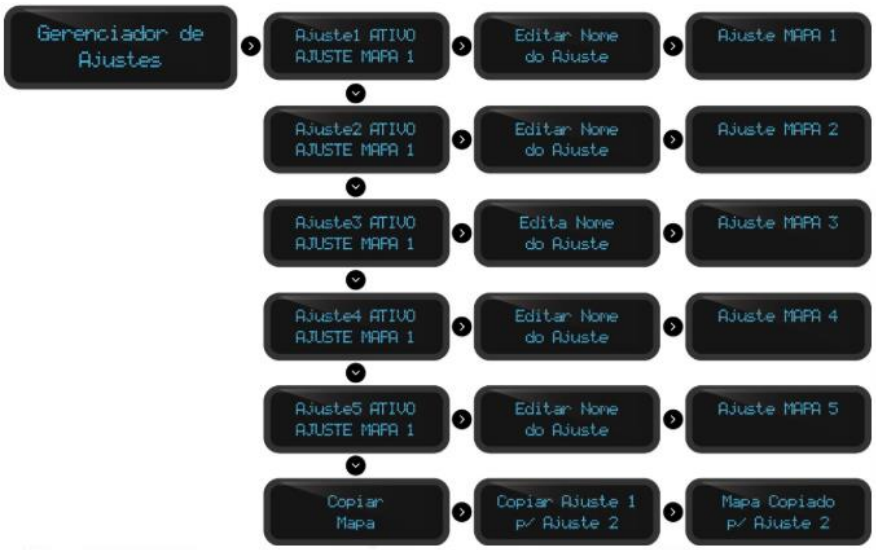
21 INTERFACE AND ALERTS:



S3000 has an LED on the front of the module located on the right side. This LED can show 4 different colors, one for each different setting. Colors may be Green, Blue, Yellow, and Red.

In the password protection setting the factory default password for preparer is 2580; already the default Bluetooth password is 1234.

22 ADJUSTMENT MANAGER:



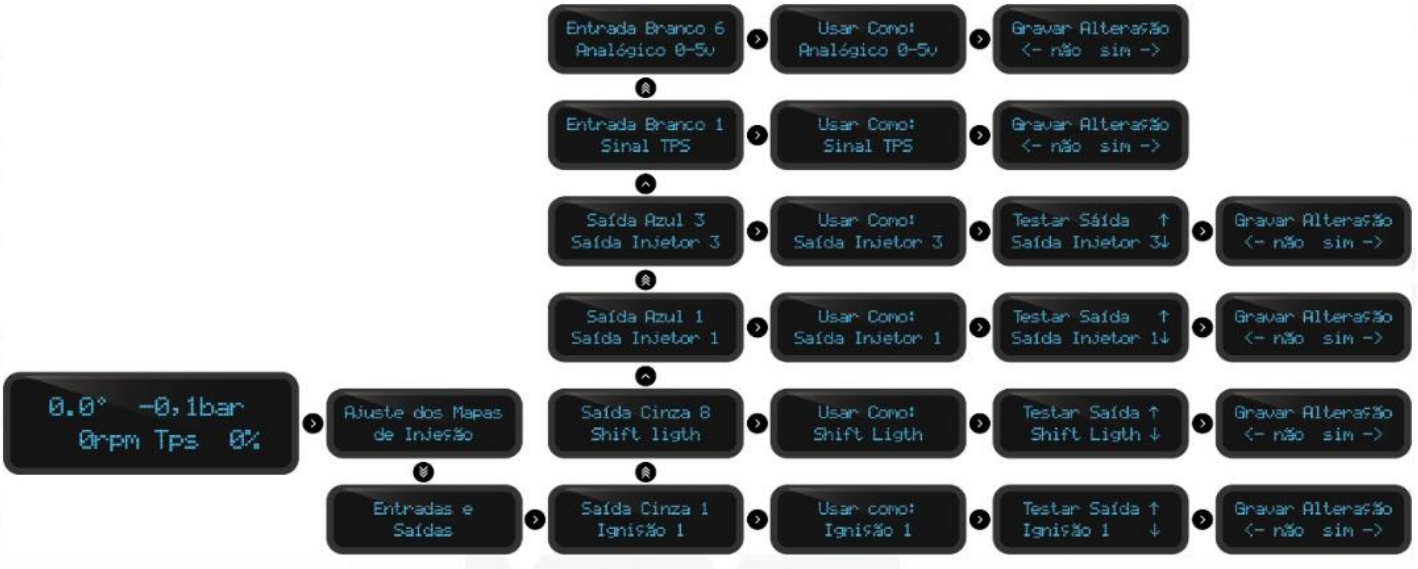
On S3000 you can make a copy of your map to 4 other maps available on the S3000 itself, plus thousands of maps on the notebook.

23 SETTING UP YOUR S3000 STEP BY STEP

It is possible to configure the S3000 in two ways, using software connected via USB or through the injection screen itself. To configure by the software, remove the protection from the USB - Type C port and connect it to the computer with the accompanying USB cable.

The on-screen setting can be assisted by the "**Map Generation Assitant**" that appears on the screen the first time the module is powered up. You can also access the assistant by the "**Interfaces and Alerts**" screen. With the help of it, configure the S3000 according to the characteristics of your engine by clicking up or down inside each function.

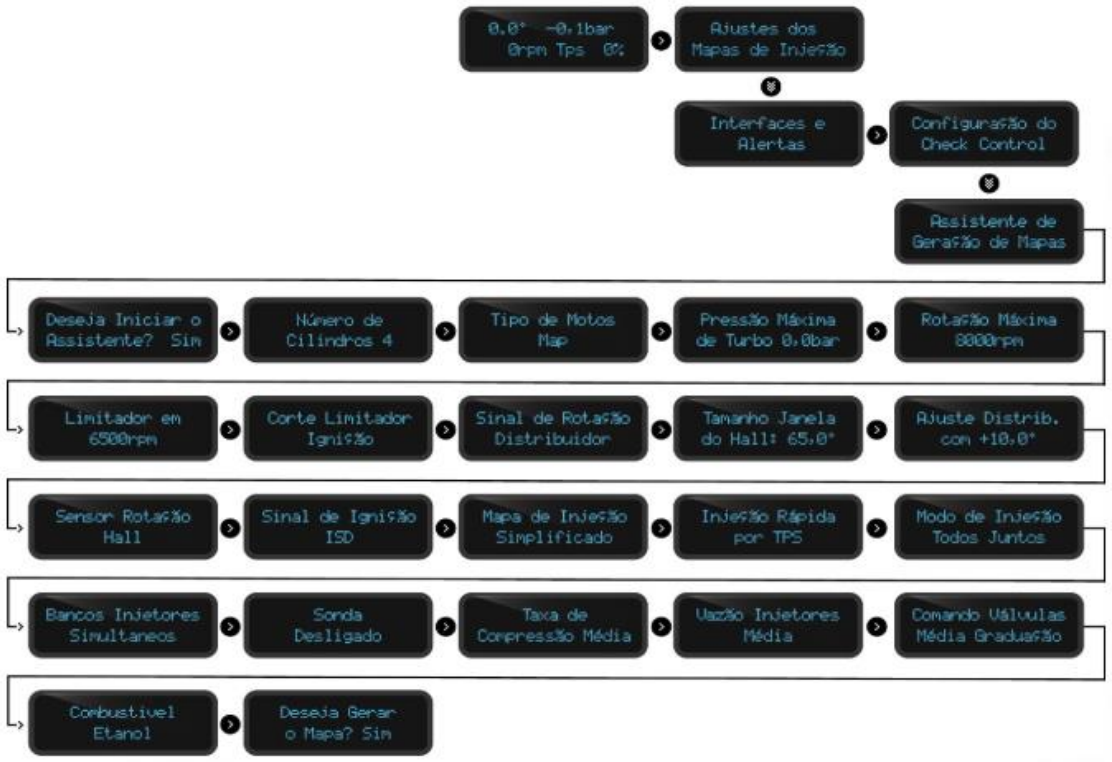
In the "Use as" screen the user can change the function by clicking the S3000 button up or down.



The "Test Output" screen is a function that allows you to test the module channel. When clicking the up or down button, the module sends pulses when the output is configured as a

fuel injector or coil, or approximately 3s negative signal when configured with another function.

1. With the help of the "Map Generation Assistant" configure the S3000 according to the characteristics of your engine by clicking up or down within each function.



2. Right after the "Do you want to generate the map?" field, the "Cfg. In/ Outputs" appears on the screen, so we have the possibility to configure the inputs and outputs in "**Default**" or "**Custom**" mode. The next screen asks for confirmation of this option "Generate Cfg. In/Outputs?", and then if you choose "**Default**" the setting will look like this:

The functions and characteristics for each wire color are described at the beginning of this manual in the "Features" section.

If you choose the Custom option, the assistant shows you the option to configure each function for each corresponding wire. Right below, you can see the configurations of the custom functions.

3. Right after, the assistant asks for a pedal calibration, this option can also be found in the tab "Sensor Calibration".

24 FIRST ENGINE START

After configuring all the items and generate the map by the assistant, we return to the main screen where we will see the ignition point, MAP, RPM, and TPS, so we can start the engine. Look on the screen for the item RPM located on the lower left side; at the moment of starting the RPM must mark a rotation, and then the injectors will pulse as well as the ignition. If it does not happen, check the rotation sensor and its connection or the configuration of the sensor in the menu "Ignition Configuration".

For the first start, we recommend that the idle speed be configured by TPS, since the access to this field is quicker and practical, so with the engine running the user can adjust the injection time by putting more or less fuel in order to adjust idle and stabilize it.

After, is necessary to calibrate the ignition point that is in the "Sensor Calibration" menu.

When the engine is running and stable, the ignition point must be calibrated. To do this, go to the "correct 0.0° until reading 20°" menu (if using Phonic Wheel) then S3000 will set the point at 20°.

Then you should pass the point gun and check the reading. If it matches the same 20° or 40° (wasted spark) the calibration is correct. Otherwise, adjustment can be made by pressing the up button to add point to the engine, or down to take out point of the engine. This should be done until you get 20°. If this difference exceeds 6 degrees in the case of a 60-2 phonic wheel, probably one tooth is out of the correct alignment. For example, the alignment is on the 16th tooth when it should be on the 15th tooth.

When working with a distributor, the option we will find after the "Calibrate the Ignition" field will be "CALIBRATE DISTRIBUTOR WITH 20°", so when we are in this screen the S3000 sets the point to 20° and the distributor must be advanced or withdrawn until the point gun shows 20°.

With everything running and with idle stabilized it is possible to calibrate the injection map. We recommend this adjustment with the aid of a Wide Band probe and a Lambda Injepro conditioner (WB METER CAN +). With this product, you can get the most precise adjustment.

WARRANTY

INJEPRO provides a 5-year warranty from the date of purchase described in the invoice for manufacturing defects. **INJEPRO** is not responsible for:

- Defects caused by misuse;
- Wrong installation;
- Improper maintenance;
- Damage caused by incorrect settings.

The breach of the manufacturer's seal implies in the total loss of the warranty, not being entitled to free maintenance if there is a need.

For the complete use of this product, it is necessary that the mechanical and electrical parts are in perfect condition. Installation and operation should be performed by qualified professionals with extensive knowledge in preparation and regulation of engines with electronic fuel injection.

FOR QUESTIONS AND INFORMATION CONTACT US:

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