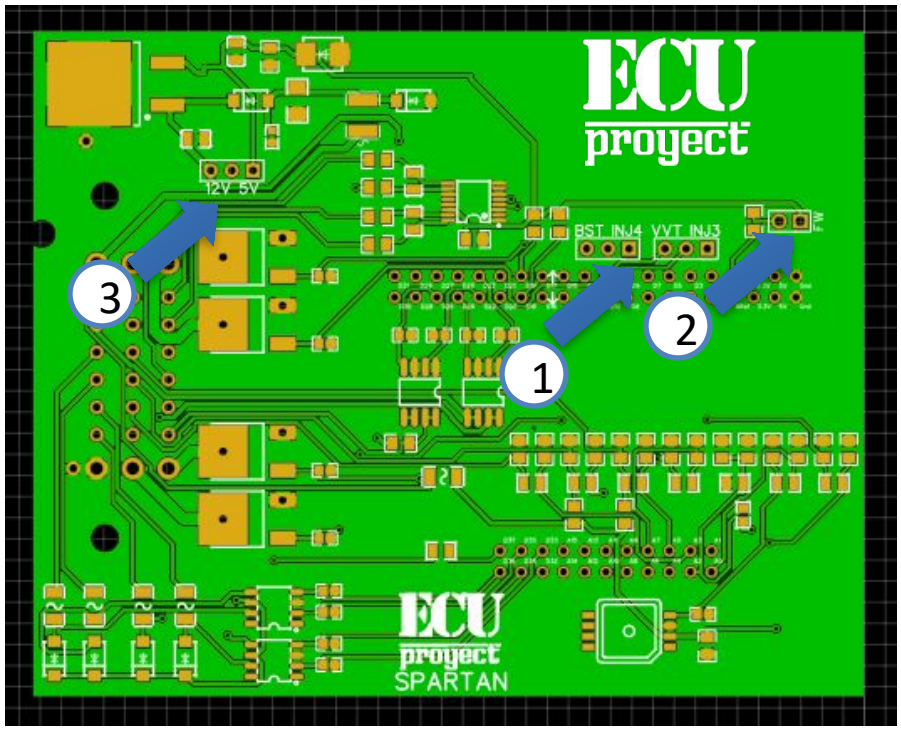
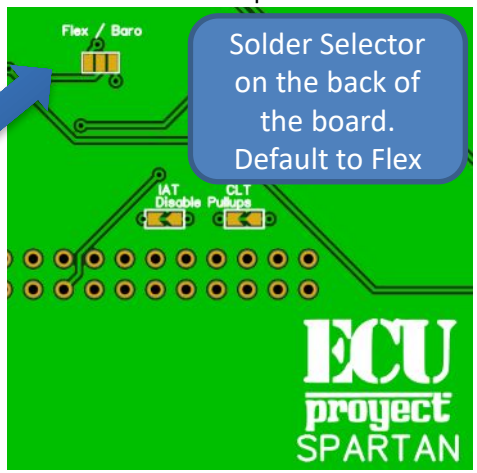
Spartan QUICK GUIDE

Use Board Layout: UA4C



12V.- power supply for ECU (normally to switch)
GND.- ground, the ground is common for sensors, and other devices
5V.- 5V output for sensors (TPS, MAP)
INJ1.- Bank 1 of injectors
INJ2.- Bank 2 of injectors
VVT/3.- Bank 3 of injectors / VVT output
BS/4.- Bank 4 injectors / Boost output
IGN1, ING2, IGN3, IGN4.- Ignition banks 1,2,3 and 4
IAT.- air intake temperature sensor
CLT.- coolant temperature sensor
TPS.- throttle body position sensor
LNCH.- input to activate launch control (IT IS ACTIVATED WITH GND OF THE SAME ECU)
O2.- input for oxygen sensor (wideband with controller or direct narrowband)
VR1+.- crankshaft sensor input or CKP type OPTICAL or HALL (add pullup) also configurable as VR positive pulse
VR2+.- OPTICAL or HALL type tree or CAM sensor input also configurable as positive pulse VR
VR1-.- is only used in case of configuring crankshaft sensor as VR type, this is the negative complementary pulse input
VR2-.- it is only used in case of configuring tree sensor as VR type, this is the negative complementary pulse input
FAN.- output for radiator fan (use with relay)
FP.- output for fuel pump (use with relay)
TACH.- tachometer output
BARO/FLEX.- On LATER REVISION Spartan solder selector for Baro/Flex input, older revisions has input to BARO



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Jumpers (selectors)
1.- Selectors to choose between INJ3/VVT, INJ4/BST channel
2.- Remove selector to burn firmware
3.- Selector to choose ignition outputs at 5V or 12V
4.- On LATER REVISION Spartan solder selector for Baro/Flex input
The ECU comes in VR mode, to connect a hall sensor you just have to place a Pullup resistor!

INTEGRATED VR card

4 bar internal map

Spartan
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SPARTAN

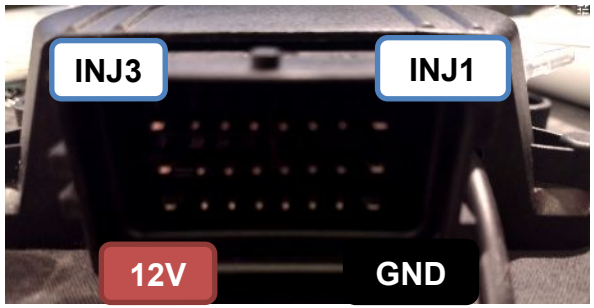
INJ3/VVT	VR1-	VR1+	VR2-	VR2+	LNCH	TACH	INJ1
A8	A7	A6	A5	A4	A3	A2	A1
INJ4/BST	5V	BARO	IAT	CLT	TPS	O2	INJ2
B8	B7	B6	B5	B4	B3	B2	B1
12V	FP	FAN	IGN1	IGN2	IGN3	IGN4	GND
C8	C7	C6	C5	C4	C3	C2	C1

colors may vary

ECU proyect

www.facebook.com/ProyectECU/

View from the ECU



WARNING

Do not save tunes or megasquirt files in this ECU, this ecu IS NOT MEGASQUIRT, it is not clone of megasquirt either. So saving an incompatible tune will cause the ecu not to synchronize time and failures will occur.

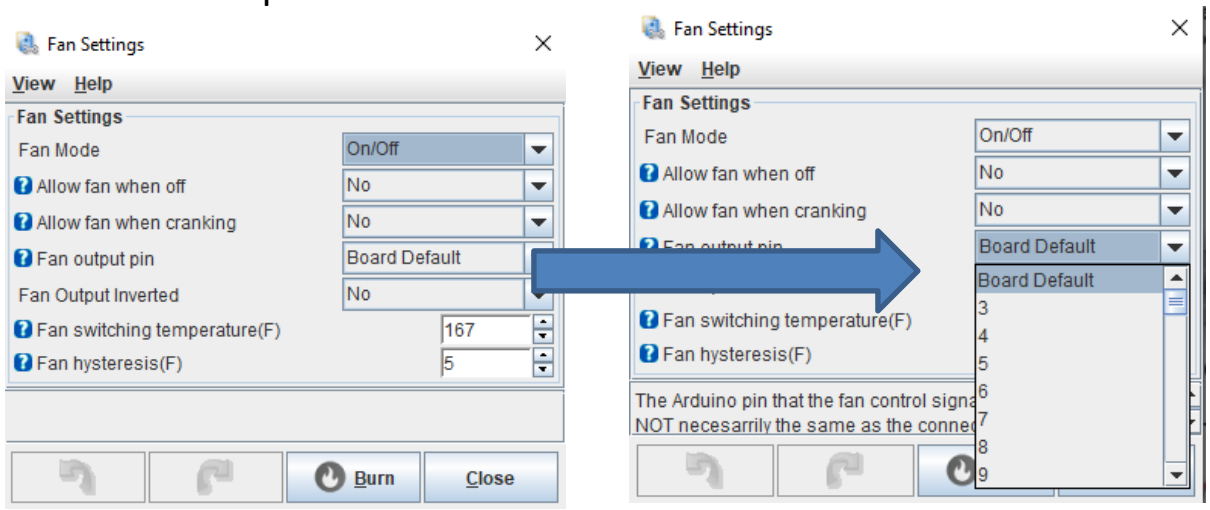
RECOMMENDATION:

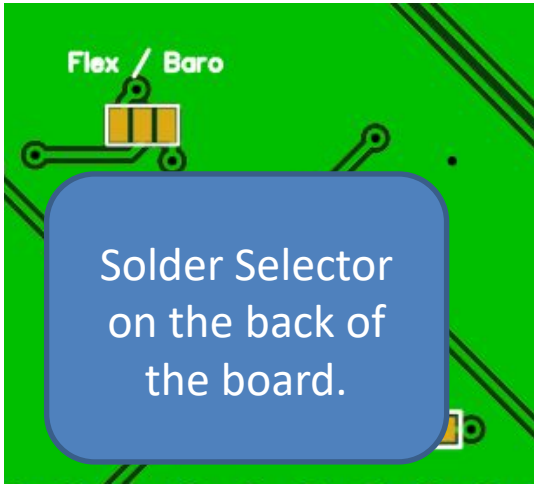
Follow the Tutorial1 and the virtual drive files to connect to the ECU and do the Hardware test!
Do this before you install the ECU!

Spartan
QUICK GUIDE

How to assign extra inputs or outputs?

Some menus have something called “pin”, this is used to assign this function to another available output.



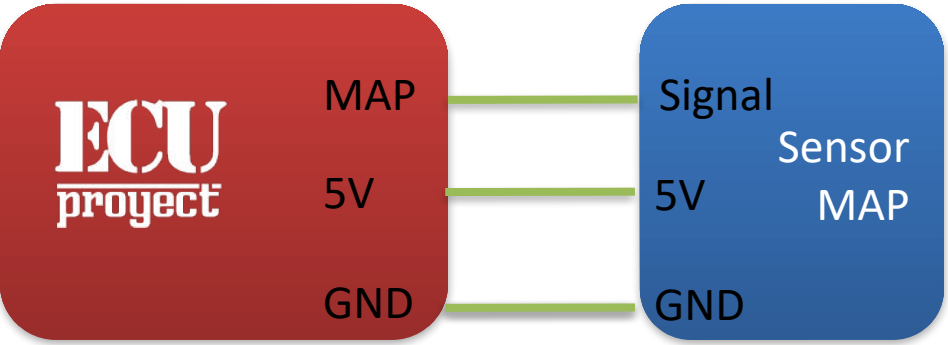


Use this table to find out which pin each reassignable output has.

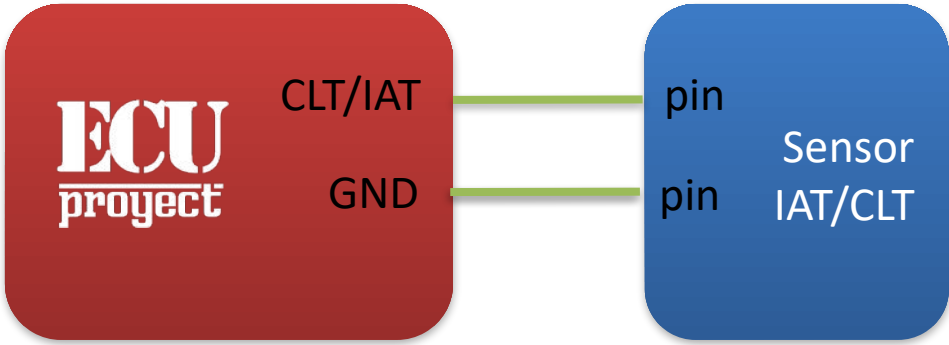
Spartan:

Inputs	Baro/Flex.- A7 (Analog) / 20 (Digital HS) O2.- A1 (Analog) Launch.- 37 (Digital)
Outputs	BST.- 12 (shared with injetor by selector) VVT.- 11 ((shared with injetor by selector)

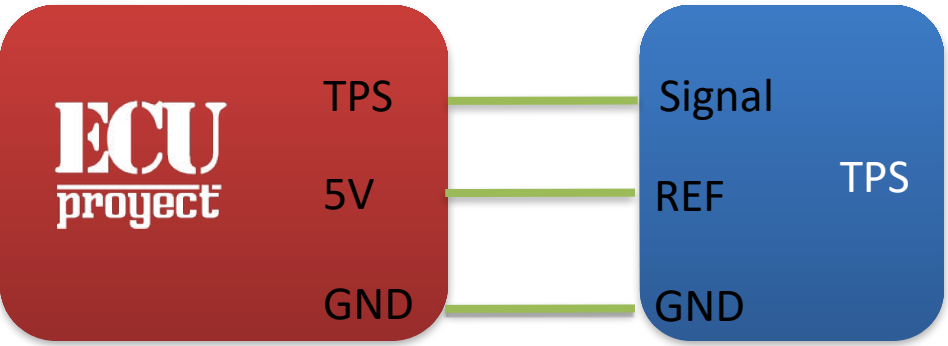
MAPconnection



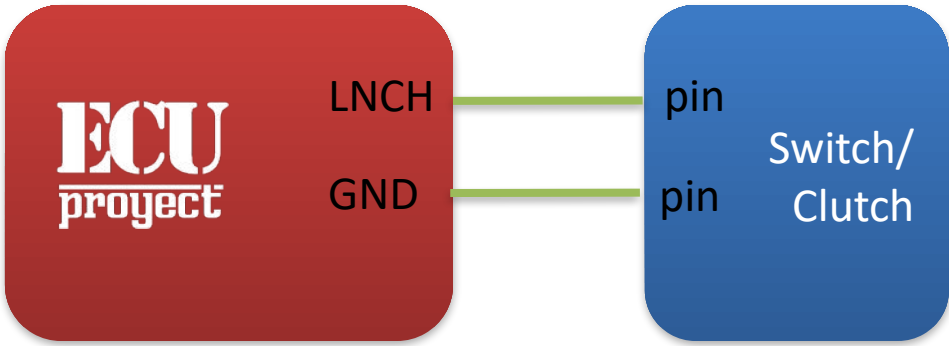
IAT or CLT connection



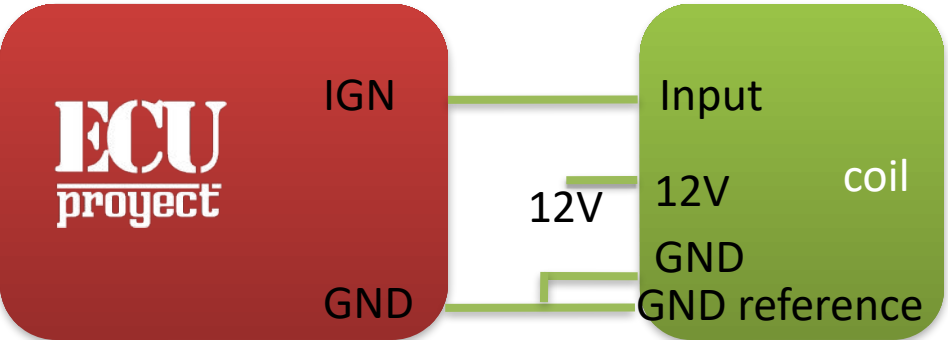
TPS connection



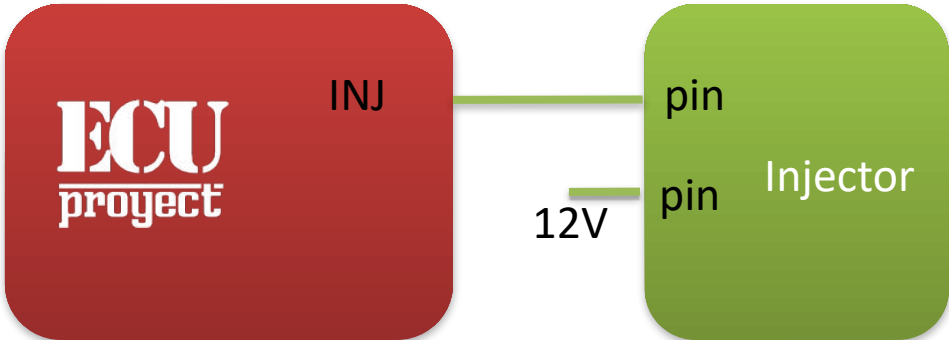
Launch Control Connection

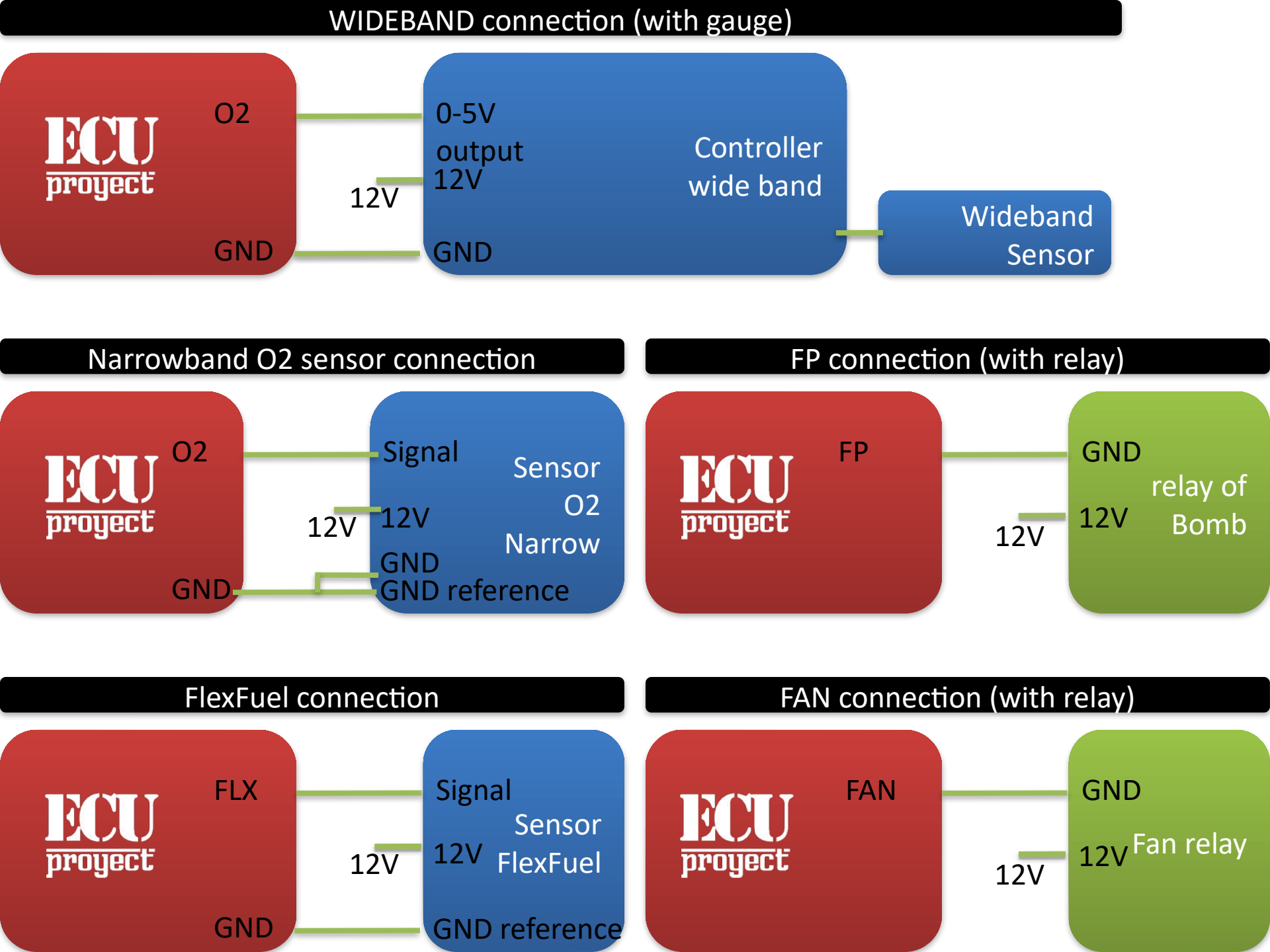


Ignition Connection (Coil)

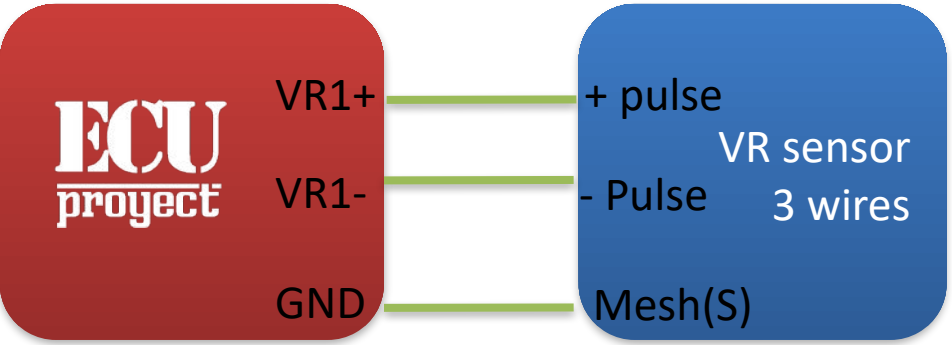


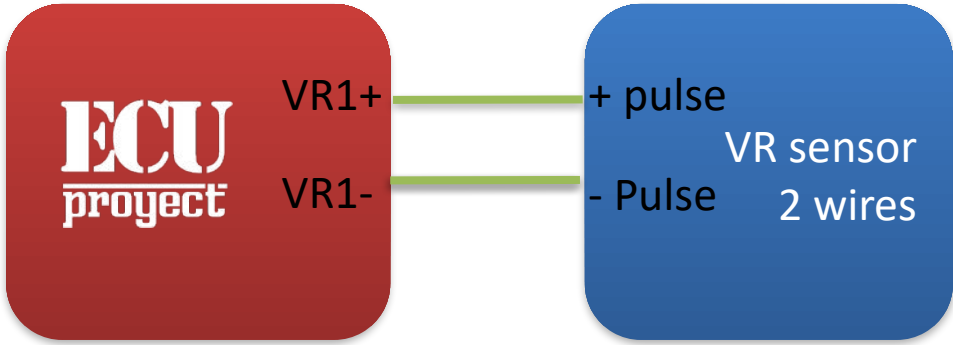
Injector connection



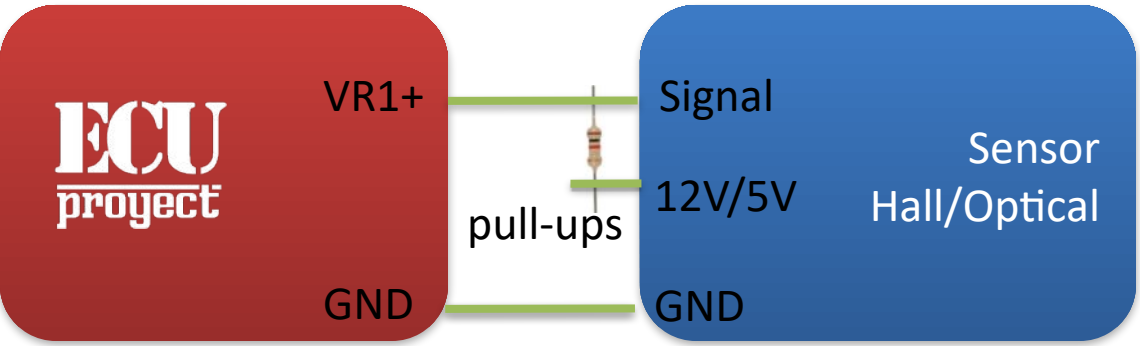

WIDEBAND connection (with gauge)
ECU proyect
O2
GND
12V
0-5V output
12V
GND
Controller wide band
Wideband Sensor
Narrowband O2 sensor connection
ECU proyect
O2
GND
12V
Signal
12V
GND
GND reference
Sensor O2 Narrow
FP connection (with relay)
ECU proyect
FP
12V
GND
12V
relay of Bomb
FlexFuel connection
ECU proyect
FLX
GND
12V
Signal
12V
GND reference
Sensor FlexFuel
FAN connection (with relay)
ECU proyect
FAN
12V
GND
12V
Fan relay

VR Type CKP Sensor Connection



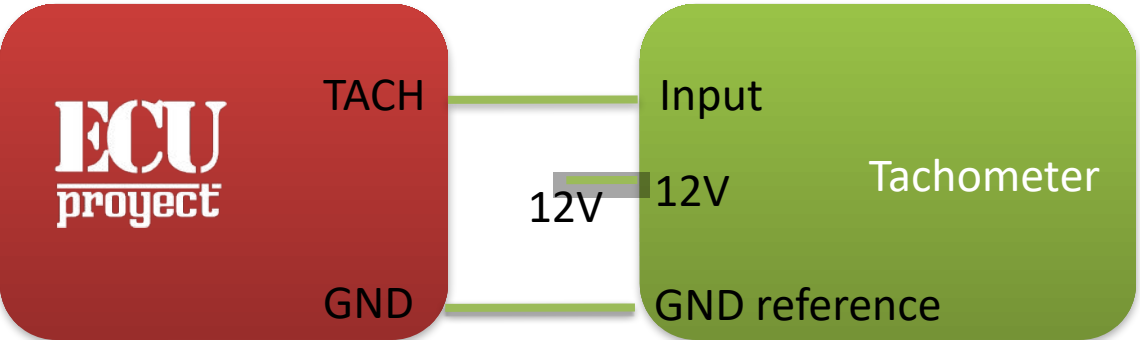


Hall/Optical CKP Sensor Connection



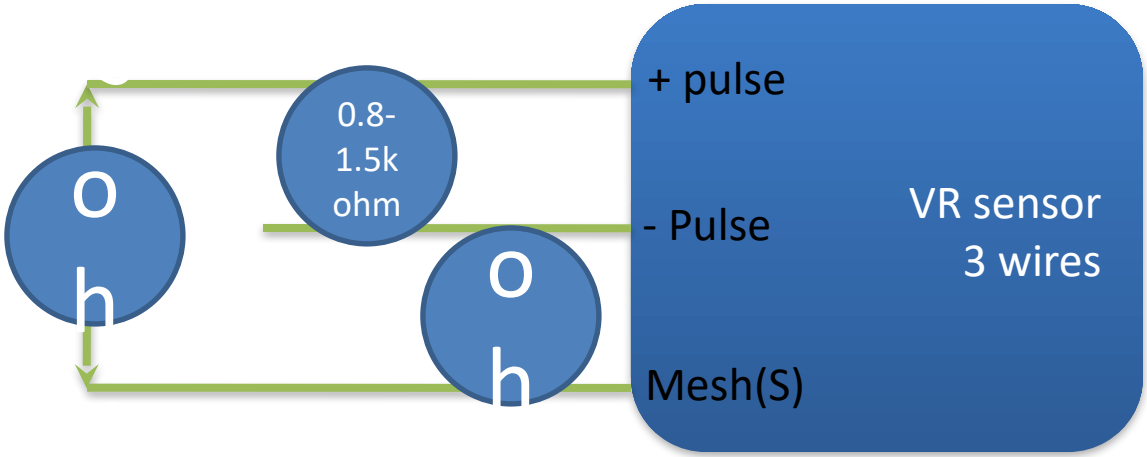
Pullup: Resistance from 1k to 10k. Not all Halls require Pullup (for example those of LS)

Tachometer Connection



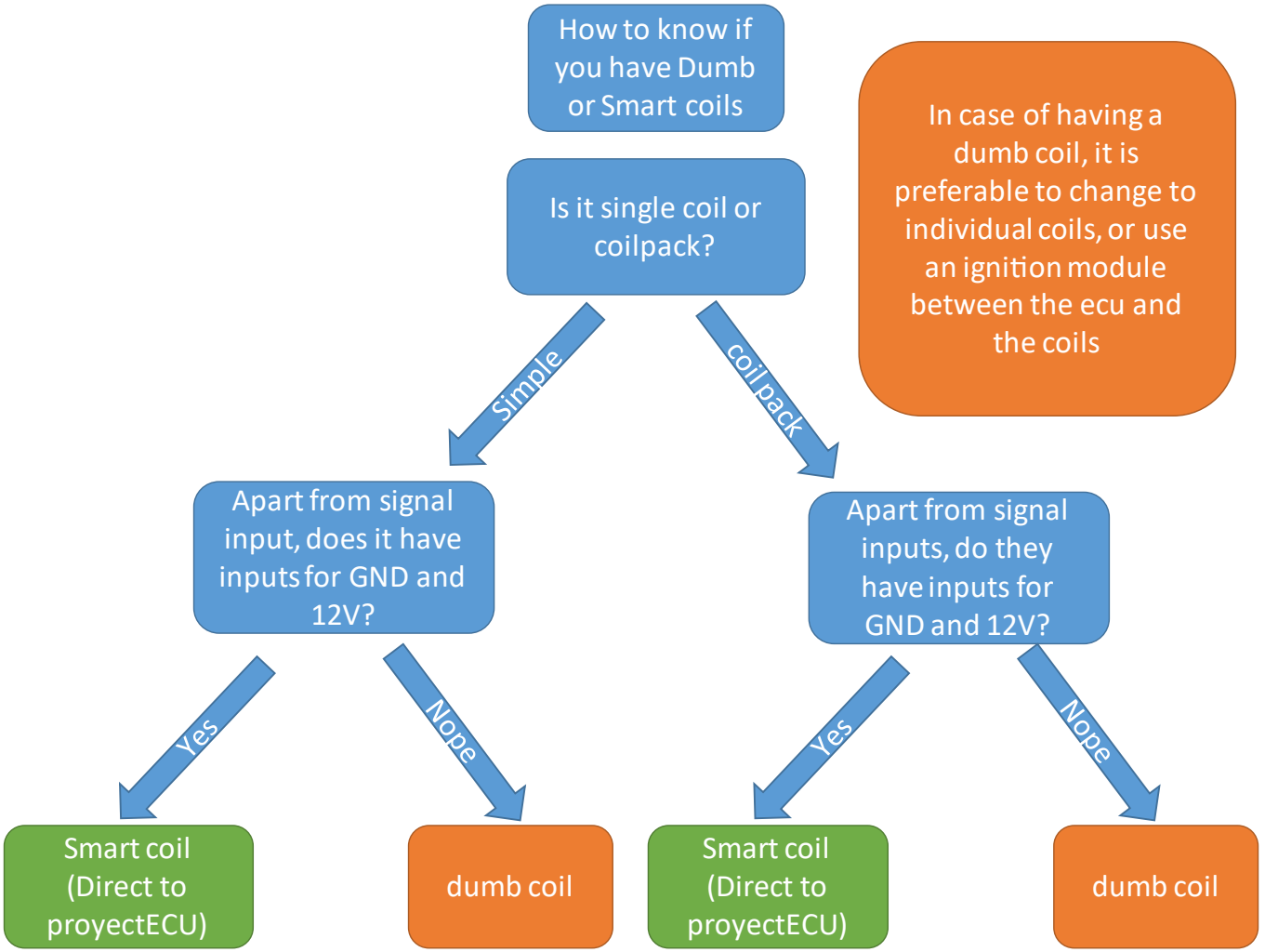
How to find the signals of my VR sensor

There are 2-wire and 3-wire VR sensors, in the case of the 2-wire ones it is easy to connect them, but for the 3-wire one there is confusion because we have a cable that has no signal and can cause failures.
To find which is the pair of signals, a multimeter is used to measure ohms.
Take a pair of pins and place the multimeter, if the resistance is infinite then we have that we are taking a signal pin and a mesh pin
We change pins until it gives us a resistance between 0.8k ohm to 1.5k ohm.



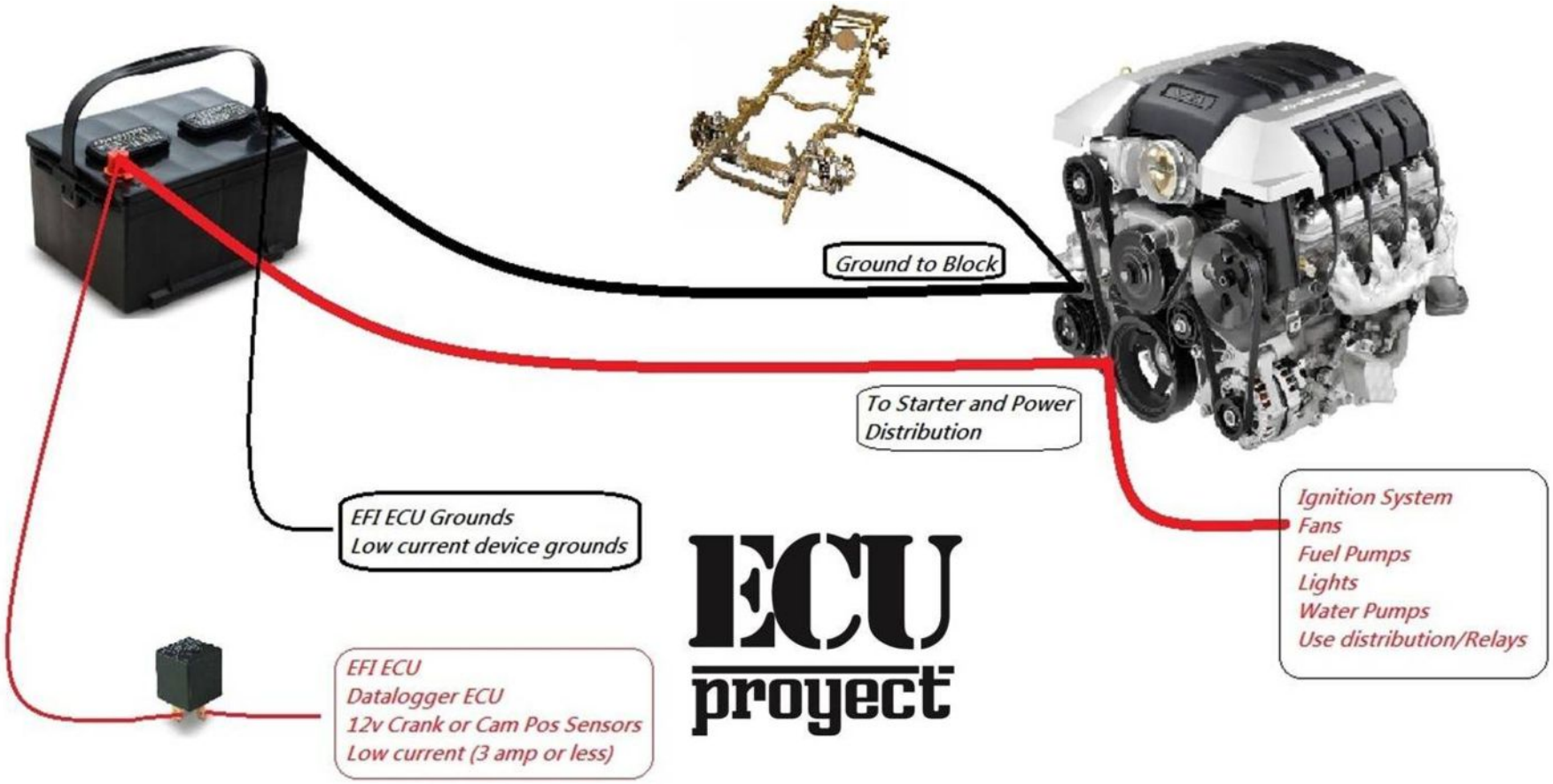
coil types

There are 2 types of coils, this small guide can indicate what type of coils we have.
In general it can be summed up that if the coil or coil pack has 12v and GND, it is a coil Smart, if it only has 12v OR GND (only one of the two) then it's Dumb coil.



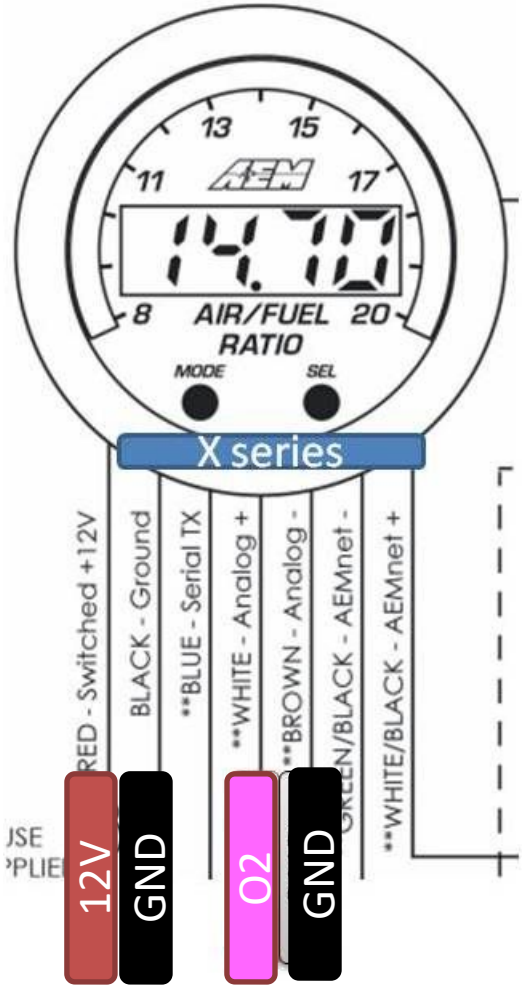
Ground Connection

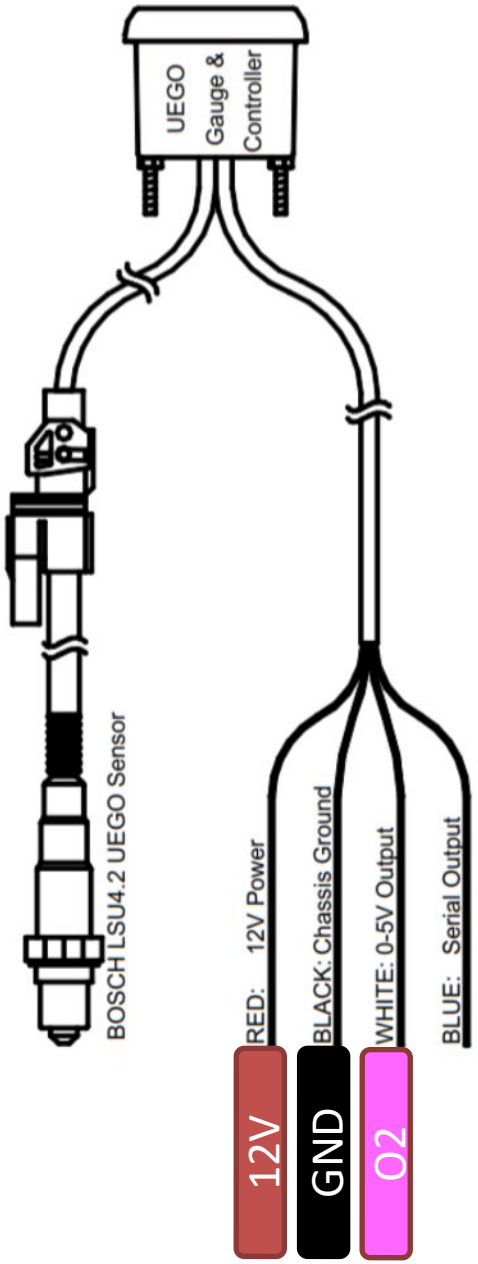
The ground connection is VERY important, a bad connection can cause loss of communication with the ECU, sensors with voltage variation, or even damage to the wiring.



WB-connection

Wideband analog signal connection exists in 2 ways depending on your wideband kit, here we show 2 examples taking WB aem:





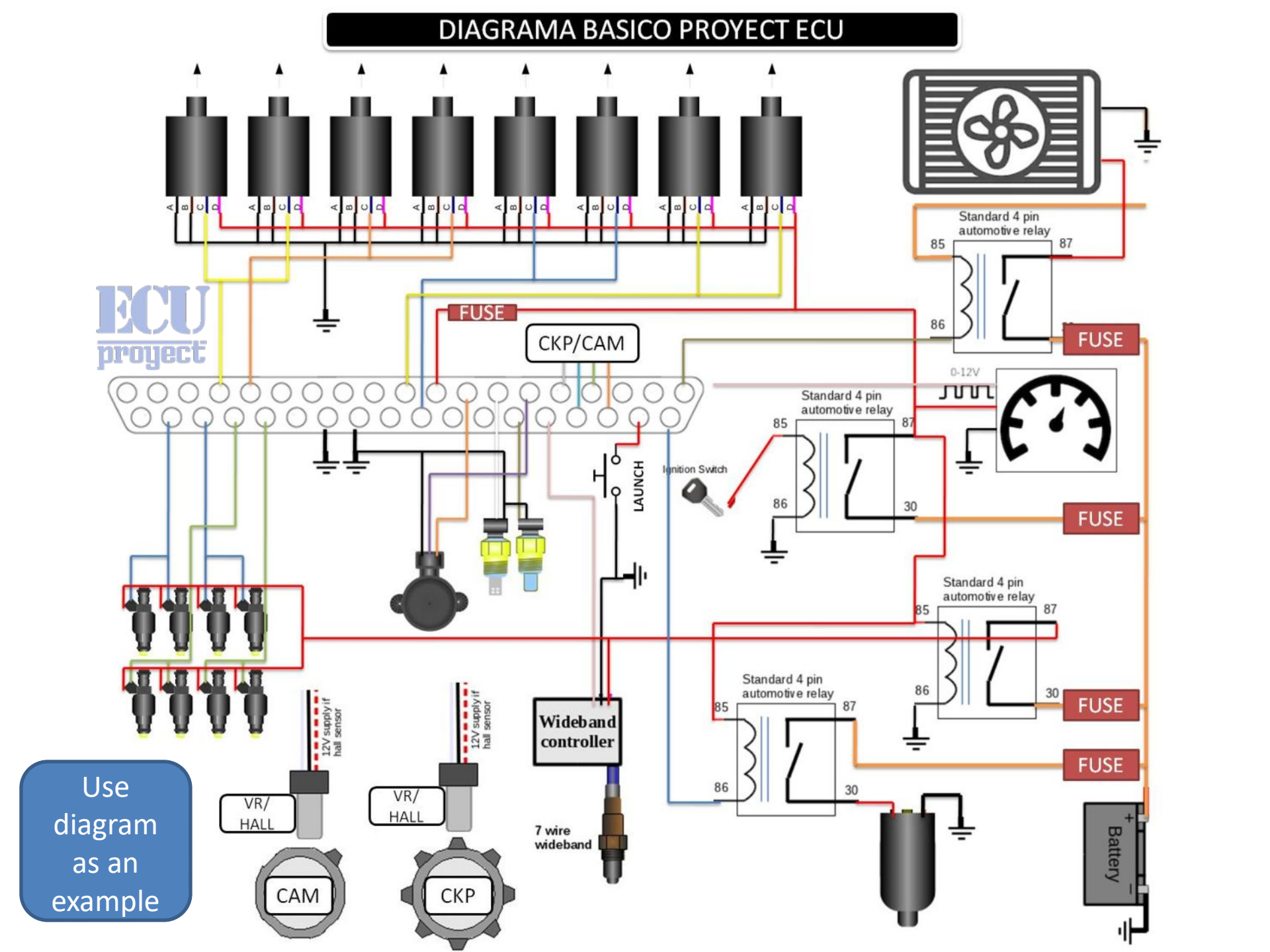


DIAGRAMA BASICO PROYECT ECU
ECU proyect
FUSE
CKP/CAM
LAUNCH
Ignition Switch
Standard 4 pin automotive relay
85
86
87
30
0-12V
Wideband controller
7 wire wideband
12V supply if hall sensor
VR/ HALL
CAM
CKP
Battery
Use diagram as an example

Bluetooth use (if available)

Power on the ECU

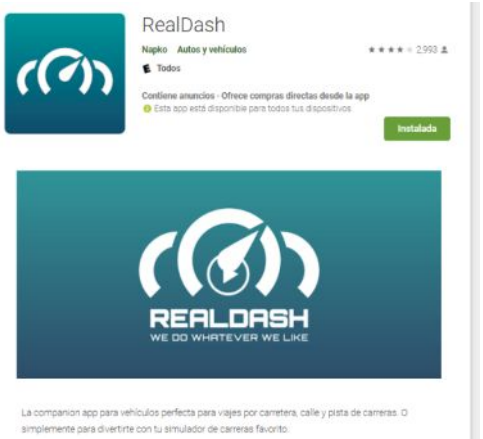
In the android device go to the bluetooth section, search and connect to the device "ProyectECU", the pin is: 1111

On the Android device go to the Play Store and search for “RealDash”

Install realdash APP

Once installed you have to open realdash and configure in your panel, Connections “ADD”, Source “Speeduino”, Type “Bluetooth”, Bluetooth “ProyectECU”, Settings “Serial 3” and DONE.

We can now enjoy data in Dash.



Available Video Tutorial:
ProjectECU.com/downloads

Tutorial how to connect to ProjectECU Bluetooth from cell/tablet