WWW.RMRACINGELECTRONICS.COM

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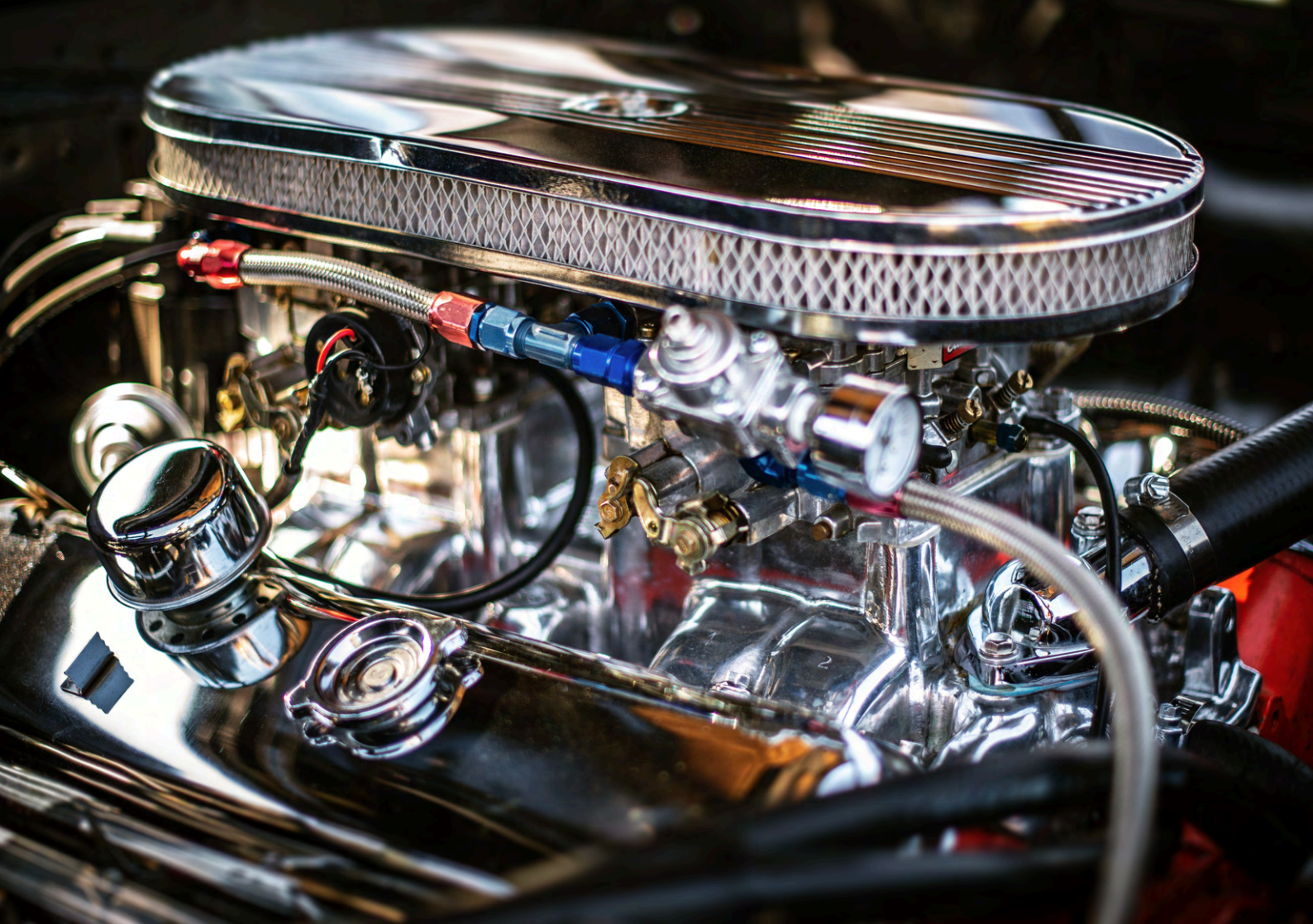
NOT YOUR ORDINARY COMPANY

RM Racing Electronics started its activity as a manufacturer of Engine management systems and a dealer of all things EFI, after becoming very popular among entry-level users and famous for its Plug&Play ecus's, RM racing Electronics rapidly realized that there was space on the market for more advanced products with a smarter and user-friendly interface that could be used by DIY'ers and professionals.
The RM-Primis was born from this dream.
The RM-Primis is fully developed in-house by our engineers, all the hardware and software/firmware comes from our own blood sweat and tears.
Our approach is different from many other brands, we plan to keep things simple, easy to understand, easy to use, affordable and we want to make sure every customer can enjoy this journey with us.
RM Racing Electronics has taken custom-made projects under NDA in the past for the development of application-specific engine controllers, if you have a custom project or if you want to manufacture our products under our own brand just get in touch with us.



...A BIT OF TECHNICALITY...

IGN channels - 6
INJ Channels - 6
GP Low side Outputs - 6
GP High side outputs - 4
VR sensor inputs - 1 or 2
Digital sensor Inputs - 3
Knock sensors - 2
MAP sensor - Built In 400kpa
Wideband - LSU4.9 or LSU4.2 (NTK sensors being tested)
Electronic Throttle - 1 (optional)
GP Analog Inputs - 8 (can be used as I/0 switch)
Dedicated IAT/CLT/TPS - YES

CAN BUS - YES (transmission control, dashboards, etc)
OBD2 - YES
Programmable inputs/outputs - YES (several rules available)
Boost control - YES, Open/Closed loop PID (2 tables)
VVT control - YES Open/Closed loop 2 channels
IDLE control - YES Open/Closed loop, 2 or 3 wire valve, and Ignition control mode
ANTILAG - YES
Launch Control - YES
Boost By Gear - YES
Flat Gear Shift - YES

Support channels

- For support and software download please visit the RM-Primis help guide at http://help.primis-ecu.co.uk
- For technical support please contact us at info@rmracingelectronics.com

RM-TUNER

Tuning & Diagnostics & Datalogging

WHERE TO GET IT?

Our tuning software, RM-Tuner is available for free download from the RM-Primis Help guide website, visit http://help.primis-ecu.co.uk and click on the "RM-Tuner software" on the left.

WHAT COMPUTER DO I NEED?

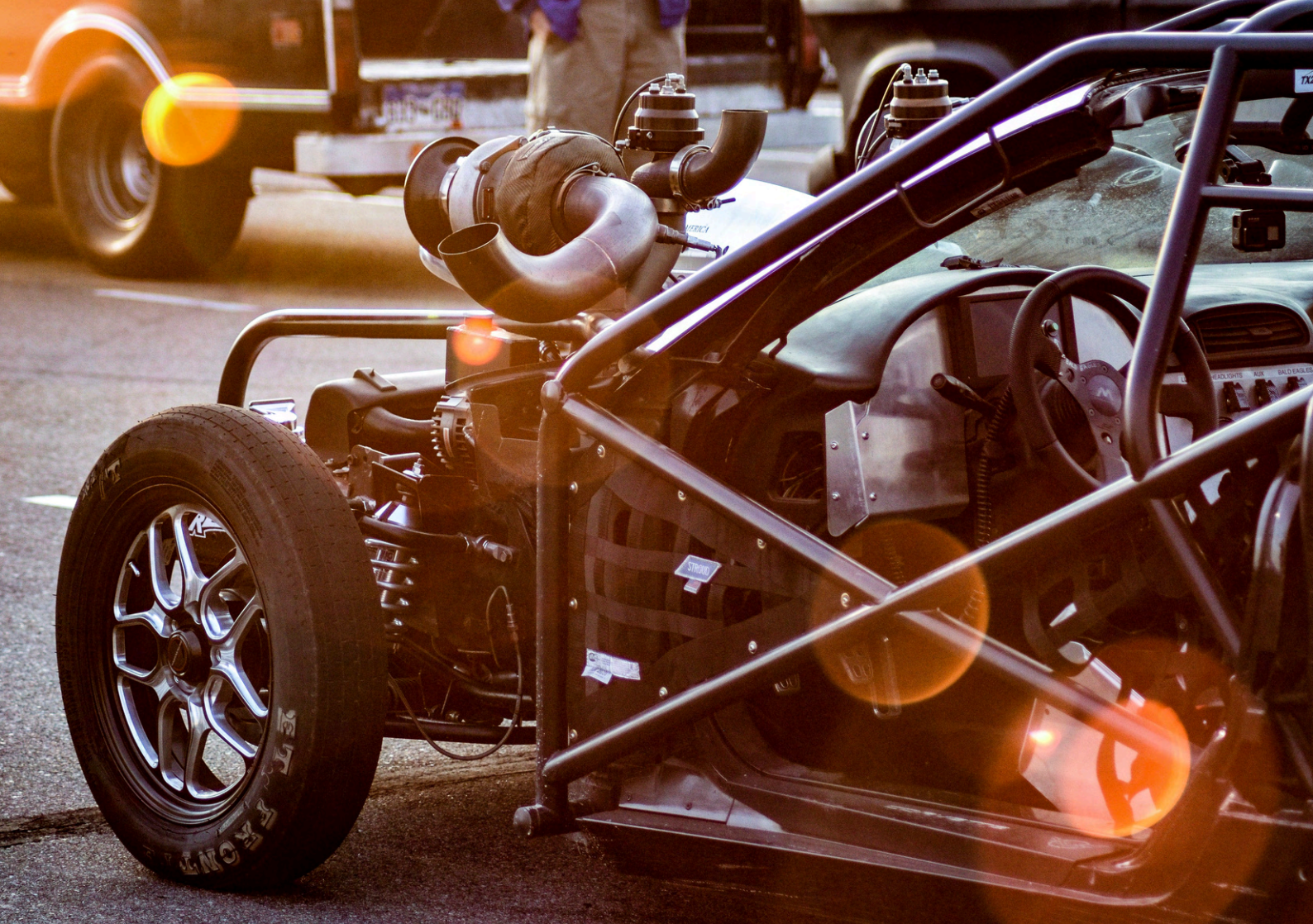
The RM-Tuner is compatible with windows 7,8,10,11
Any up-to-date computer that can run the windows operating system described above can run RM-Tuner. If you have a choice we recommend you to you a laptop with 15" screen or more to turn your experience more enjoyable.

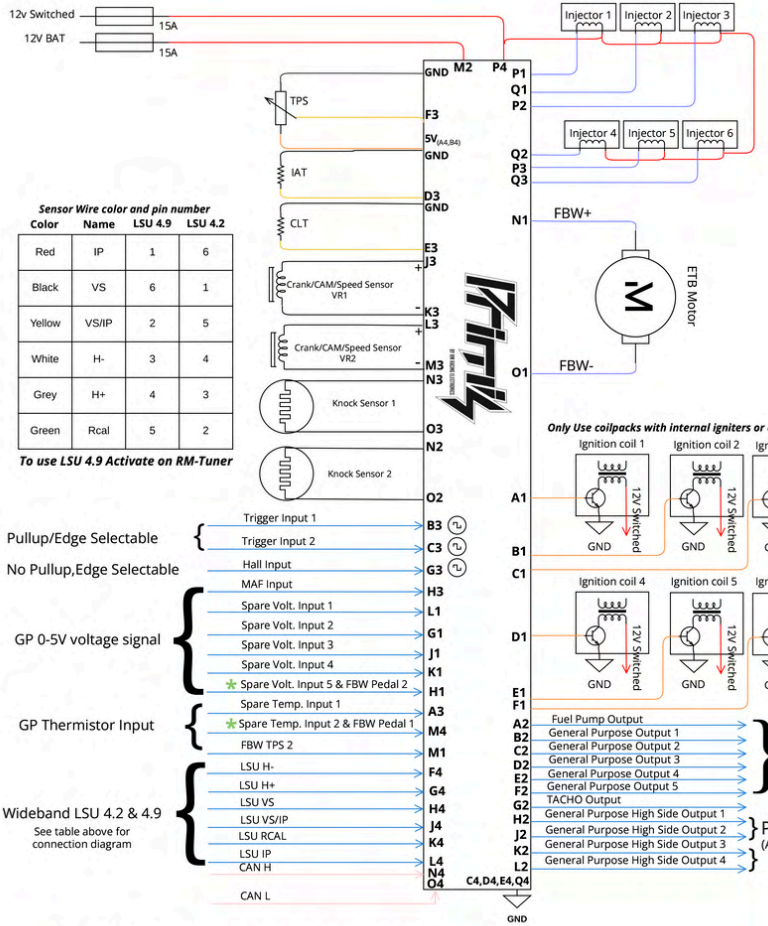
DO I HAVE TO PAY TO GET FEATURES?

We want you to use our products without having to worry about anything else, RM-Tuner is completely free and will always be, all features are unlocked and will always be, if anything new is added you will be notified of an update available, you can then chose to do it or not, this is valid for the ECU firmware and RM-Tuner.

CAN I USE BASEMAPS FROM OTHER BRANDS?

Basemaps are not compatible but we allow you to import the tables from Tunerstudio projects and we will add more cross-compatibility in the future.
Our Datalogger also exports the datalogs in XML format so you can import it and use it on your favorite datalog analyzer software.





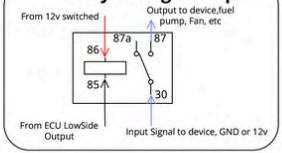
Sensor Wire color and pin number

Color	Name	LSU 4.9	LSU 4.2
Red	IP	1	6
Black	VS	6	1
Yellow	VS/IP	2	5
White	H-	3	4
Grey	H+	4	3
Green	Rcal	5	2

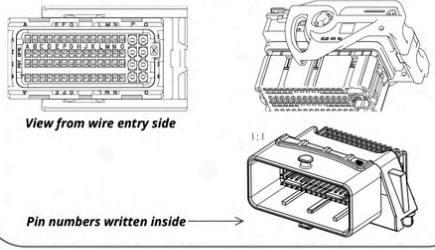
To use LSU 4.9 Activate on RM-Tuner

***On ECU's with Fly By Wire these inputs become pedal inputs**

Relay wiring example



Main Header and Connector Housing



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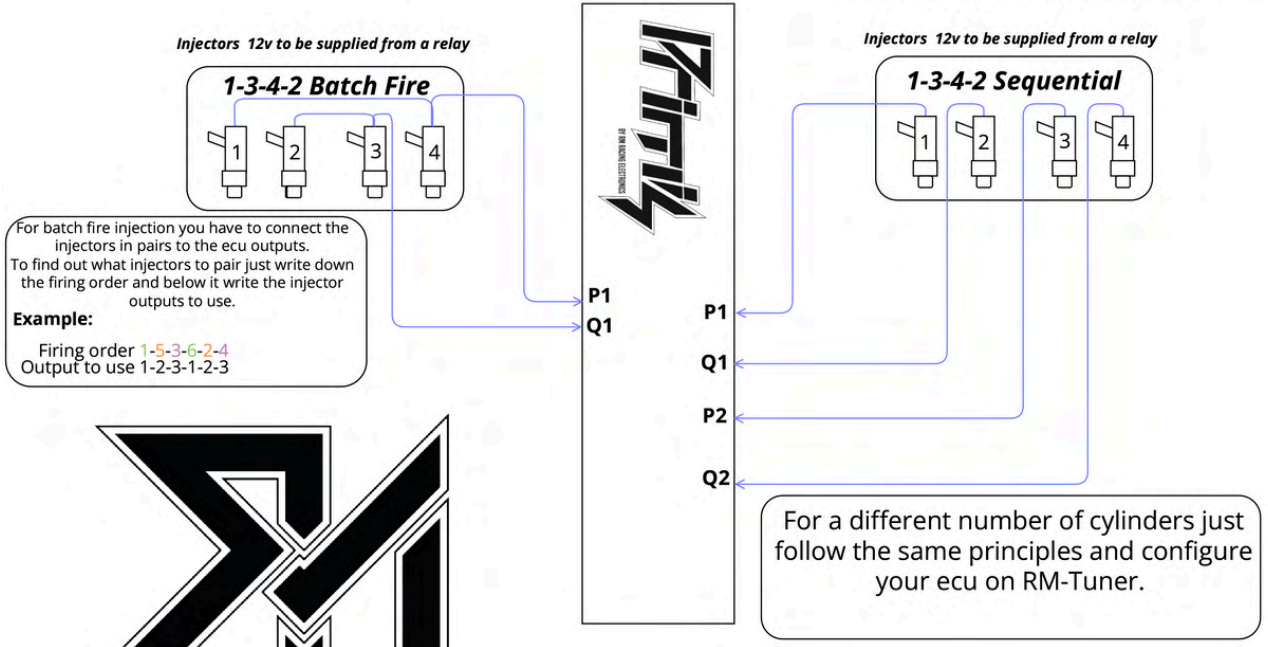
For more technical information and support please visit help.primis-ecu.co.uk

Fuel Injectors wiring example

4 CYL Batch Fire & Sequential

The RM-Primis firmware configured from RM-Tuner allows you to configure your firing order and automatically calcul0ates the angles to fire your injectors, the injectors should be wired following the injector number to injector output order 1-1,2-2,3-3 etc and the firmware will take care of the rest



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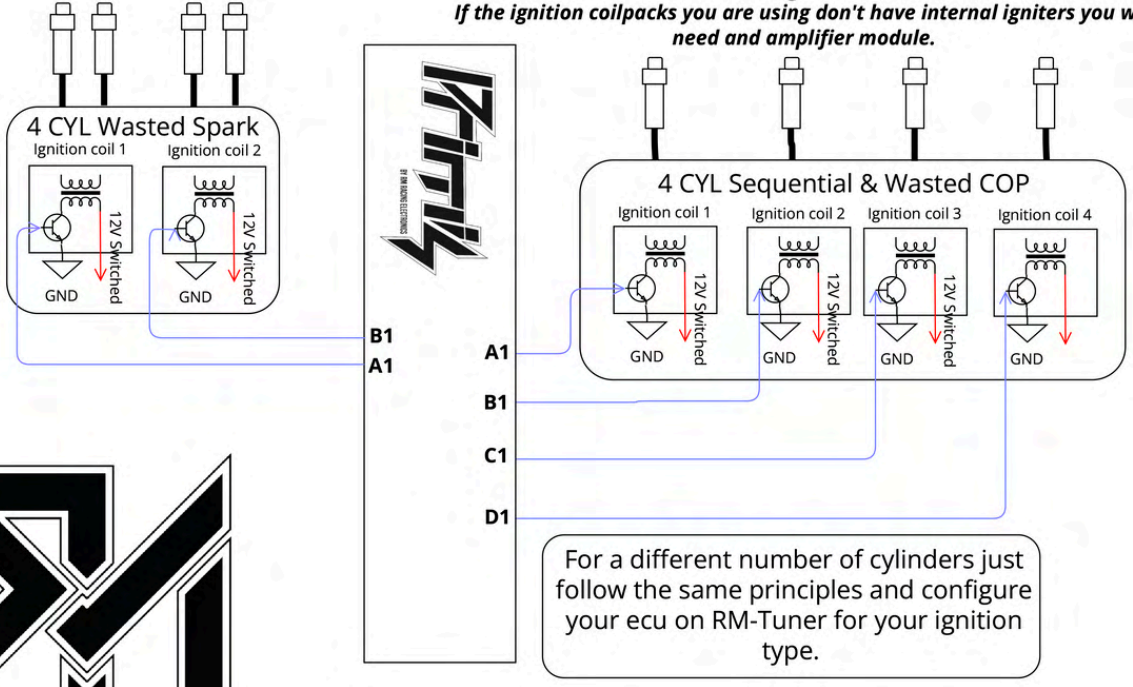
Ignition coils wiring example

4 CYL wasted spark,wasted COP & Sequential

The RM-Primis is only compatible with Smart Coils and outputs a 5v trigger signal.
If the ignition coilpacks you are using don't have internal igniters you will need and amplifier module.



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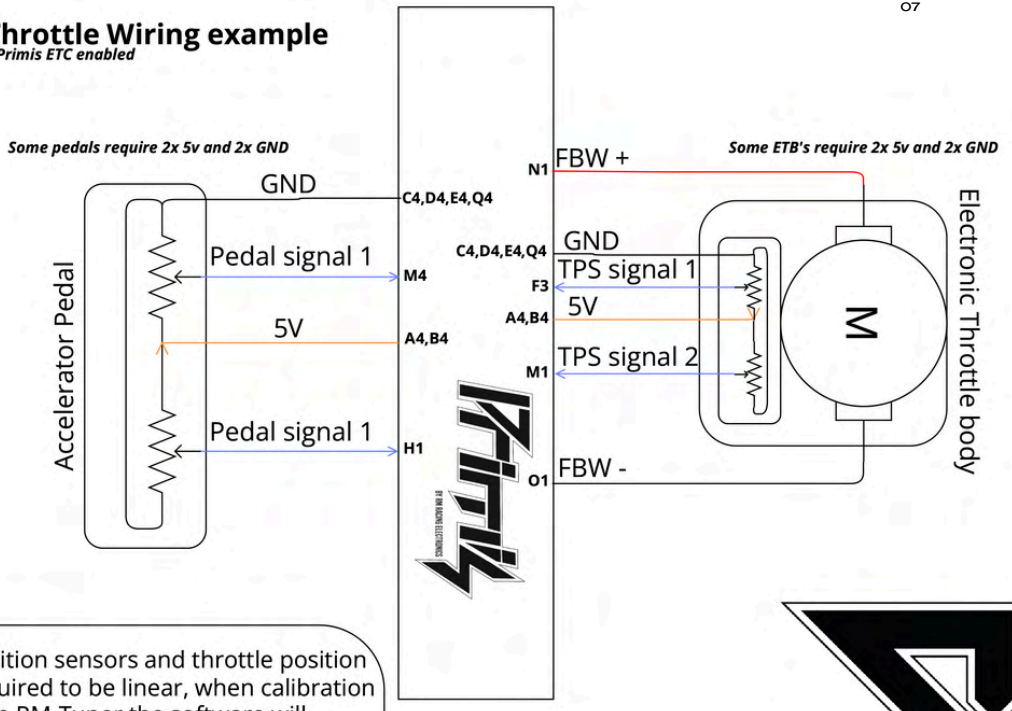
Electronic Throttle Wiring example

Only available on RM-Primis ETC enabled



Both pedal position sensors and throttle position sensors are required to be linear, when calibration is done on RM-Tuner the software will automatically read the maximum and minimum positions and calibrate them from 0-100%
In case only one of the sensors outputs a linear signal or if the throttle body or pedal only has one position sensor you can feed the same signal to both inputs but for safety purposes, we always recommend you to use two sensors for the pedal and two for the ETB.
The ETB opening and closing directions are automatically detected during calibration, polarity is not too important.

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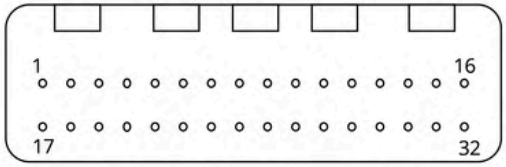
RM-Primis Plug-In Adapter Board Pinout

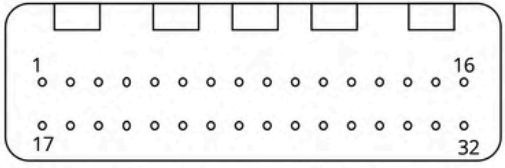
1



(Adapter board Left side connector looking straight at board)

1. Injector Output 1
2. Injector Output 2
3. Injector Output 3
4. Injector Output 4
5. Injector Output 5
6. Injector Output 6
7. Ignition Output 1
8. Ignition Output 2
9. Ignition Output 3
10. Ignition Output 4
11. Ignition Output 5
12. Ignition Output 6
13. Fuel Pump Output
14. Low Side GP 1
15. Low Side GP 2
16. Low Side GP 3
17. GND
18. Ignition Switch Input 12v+
19. Permanent Battery 12v+
20. LSU - IP
21. LSU - RCAL
22. LSU - VS/IP
23. LSU - VS
24. LSU - H+
25. LSU - H-
26. TACHO Output
27. High Side GP 4
28. High Side GP 3
29. High Side GP 2 Push-Pull
30. High Side GP 1 Push-Pull
31. Low Side GP 5
32. Low Side GP 4

2



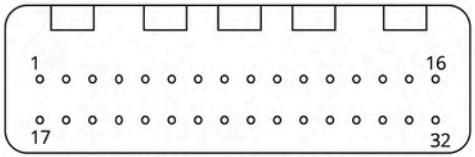
(Adapter board right side connector looking straight at board)

1. Throttle position sensor input
2. Coolant temp sensor input
3. Intake air temp sensor input
4. Digital/Trigger input 1 (pull-up sellectable)
5. Digital/Trigger input 2 (pull-up sellectable)
6. Digital/Trigger Hall Input (no pull-up)
7. MAF/Analog Voltage Input
8. Spare voltage input 1
9. Spare voltage input 2
10. Spare voltage input 3
11. Spare voltage input 4
12. Spare voltage input 5 (Pedal 2 when DBW)
13. Spare Temp Input 1
14. Spare Temp Input 2 (Pedal 1 when DBW)
15. DBW TPS Input 2
16. 5v output for sensors
17. DBW Motor +
18. DBW Motor -
19. GND
20. GND
21. GND
22. 5v output for sensors
23. CAN L
24. CAN H
25. Knock sensor 2 -
26. Knock sensor 2 + (signal)
27. Knock sensor 1 -
28. Knock sensor 1 + (signal)
29. Variable reluctance sensor 2 -
30. Variable reluctance sensor 2 +
31. Variable reluctance sensor 1 - (adjustable threshold)
32. Variable reluctance sensor 1 + (adjustable threshold)

BMW MS42/MS43 & BMS46 Adapter Pinout

LSU - Wideband

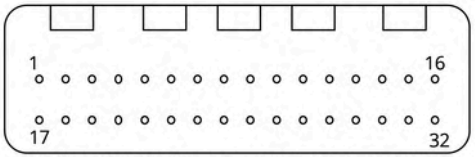
1	2	3
4	5	6



(Adapter board Left side connector looking straight at board)

Auxiliary

1	2	3
4	5	6



(Adapter board right side connector looking straight at board)

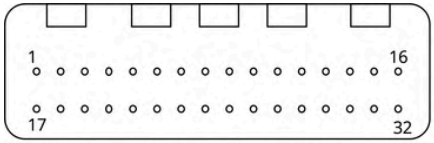
Sensor Wire color and pin number

Color	Name	LSU 4.9	ECU Connector
Red	IP	1	6
Black	VS	6	2
Yellow	VS/IP	2	5
White	H-	3	1
Grey	H+	4	4
Green	Rcal	5	3

Auxiliary

1. Spare Voltage Input 5
2. Spare Voltage input 4
3. Low Side GP 4
4. MAF/Analog Voltage Input
5. Low Side GP 3
6. Low Side GP 5

Audi/VW ME7.5 & 7.x Adapter Pinout



(Adapter board Left side connector looking straight at board)

LSU - Wideband

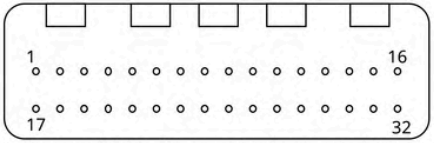
1	2	3
4	5	6

Auxiliary 1

1	2	3
4	5	6

Auxiliary 2

1	2	3
4	5	6



(Adapter board right side connector looking straight at board)

Sensor Wire color and pin number

Color	Name	LSU 4.9	ECU Connector
Red	IP	1	6
Black	VS	6	2
Yellow	VS/IP	2	5
White	H-	3	1
Grey	H+	4	4
Green	Rcal	5	3

Auxiliary 1

1. CAN L
2. CAN H
3. Spare Voltage Input 3
4. MAF/Analog Voltage Input
5. Low Side GP 5
6. Spare Voltage Input 2

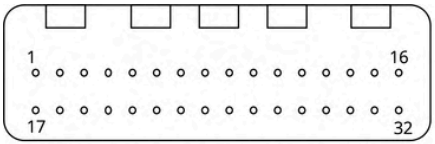
Auxiliary 2

1. High Side Output 2*1
2. High Side Output 3*1
3. High Side output 4*1
4. Injector Output 6*
5. Injector Output 5*
6. Spare Temp input 1

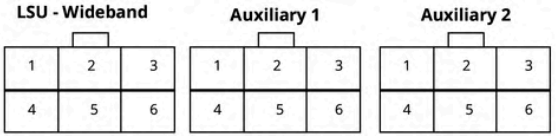
*Injector Outputs are Low Side Outputs and can be used as a GP Output to control any other equipment such as boost solenoids, etc

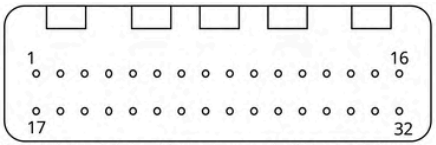
*1 These High Side outputs are turned into a Low side output using an IC on the board, they will effectively output a GND signal and not a High Side signal, if you want to use them sellect the correspondent High Side output on RM-Tuner

BMW M52 (88 pin plug) Adapter Pinout



(Adapter board Left side connector looking straight at board)





(Adapter board right side connector looking straight at board)

Sensor Wire color and pin number

Color	Name	LSU 4.9	ECU Connector
Red	IP	1	6
Black	VS	6	2
Yellow	VS/IP	2	5
White	H-	3	1
Grey	H+	4	4
Green	Rcal	5	3

Auxiliary 1

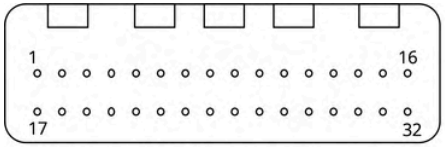
1. Spare Voltage Input 5
2. Spare Temp Input 2
3. Low Side GP 4
4. MAF/Analog Voltage Input
5. High Side Output 3*
6. Low Side GP 5

Auxiliary 2

1. High Side Output 4*
2. TPS Input 2
3. DBW Motor +
4. CAN H
5. CAN L
6. DBW Motor -

*1 These High Side outputs are turned into a Low side output using an IC on the board, they will effectively output a GND signal and not a High Side signal, if you want to use them sellect the correspondent High Side output on RM-Tuner

BMW M50/M4x & M6x (88 pin plug) Adapter Pinout



(Adapter board Left side connector looking straight at board)

LSU - Wideband

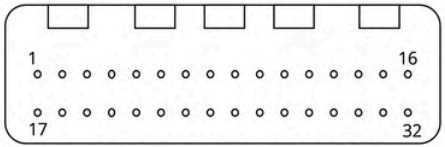
1	2	3
4	5	6

Auxiliary 1

1	2	3
4	5	6

Auxiliary 2

1	2	3
4	5	6



(Adapter board right side connector looking straight at board)

Sensor Wire color and pin number

Color	Name	LSU 4.9	ECU Connector
Red	IP	1	6
Black	VS	6	2
Yellow	VS/IP	2	5
White	H-	3	1
Grey	H+	4	4
Green	Rcal	5	3

Auxiliary 1

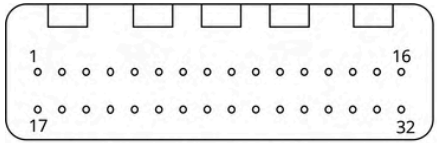
1. Spare Voltage Input 5
2. Spare Temp Input 2
3. Low Side GP 4
4. MAF/Analog Voltage Input
5. Digital/Trigger Input 2
6. Low Side GP 5

Auxiliary 2

1. High Side Output 4*
2. High Side Output 1*
3. DBW Motor +
4. CAN H
5. CAN L
6. DBW Motor -

*1 These High Side outputs are turned into a Low side output using an IC on the board, they will effectively output a GND signal and not a High Side signal, if you want to use them sellect the correspondent High Side output on RM-Tuner

Mazda MX5/Miata Mk1/Mk2 & Mk2.5 Adapter Pinout



(Adapter board Left side connector looking straight at board)

LSU - Wideband

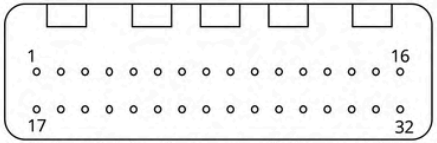
1	2	3
4	5	6

Auxiliary 1

1	2	3
4	5	6

Auxiliary 2

1	2	3
4	5	6



(Adapter board right side connector looking straight at board)

Sensor Wire color and pin number

Color	Name	LSU 4.9	ECU Connector
Red	IP	1	6
Black	VS	6	2
Yellow	VS/IP	2	5
White	H-	3	1
Grey	H+	4	4
Green	Rcal	5	3

Auxiliary 1

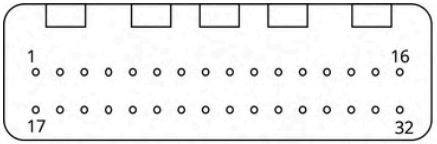
1. DBW Motor -
2. Spare Temp Input 2
3. DBW TPS 2
4. DBW Motor +
5. Spare Voltage Input 5
6. 5v Output for sensors

Auxiliary 2

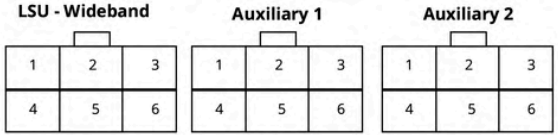
1. CAN L
2. CAN H
3. Spare Voltage Input 3
4. MAF/Analog Voltage Input
5. Injector 6 Output*
6. Injector 5 Output*

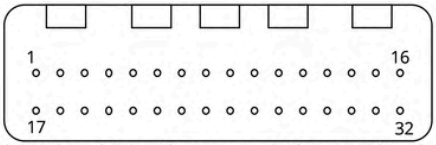
*Injector Outputs are Low Side Outputs and can be used as a GP Output to control any other equipment such as boost solenoids, etc

Honda OBD1 & OBD2a Adapter Pinout



(Adapter board Left side connector looking straight at board)





(Adapter board right side connector looking straight at board)

Sensor Wire color and pin number

Color	Name	LSU 4.9	ECU Connector
Red	IP	1	6
Black	VS	6	2
Yellow	VS/IP	2	5
White	H-	3	1
Grey	H+	4	4
Green	Rcal	5	3

Auxiliary 1

1. TACHO Output*
2. CAN H
3. MAF/Analog Voltage Input
4. High Side GP Output 4*
5. CAN L
6. Spare Voltage Input 2

Auxiliary 2

1. Ignition Output 1
2. Ignition Output 3
3. Ignition Output 5*
4. Ignition Output 2
5. Ignition Output 4
6. Ignition Output 6*

*1 These High Side outputs are turned into a Low side output using an IC on the board, they will effectively output a GND signal and not a High Side signal, if you want to use them sellect the correspondent High Side output on RM-Tuner


4
ЕРМОХИН Д.
МАГНАТ-РД
24AUTO.RU
12
23
Дамир Идиятул
FEDERAL
Castrol

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