

SYVECS LTD

V1.4



Yaris GR Plug in Ecu

Designed to work with Toyota Yaris GR

This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.

Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.

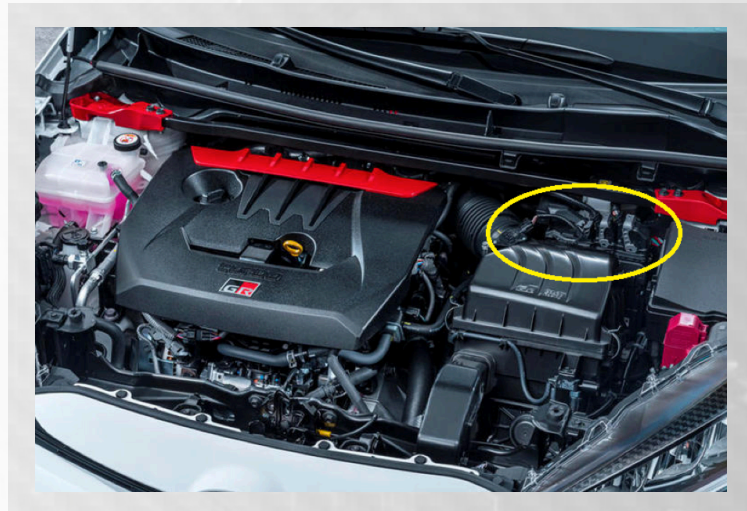
Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.

Support@Syvecs.com

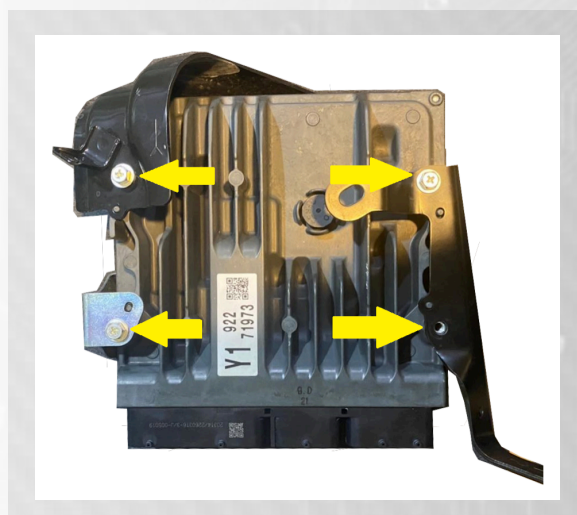


Installation

- 1 Remove the Negative Terminal from the battery on the Vehicle to be extra safe with electrical components, this is found in the boot/trunk of the car under the mat.
- 2 Open the front bonnet and unplug the OEM Engine Ecu connectors as shown below.



- 3 Unbolt the Factory Engine ECU and remove from the engine bay.
- 4 Remove the Factory ECU brackets which are shown below in yellow, these are needed for the Syvecs Yaris ECU.



5 The Factory ECU will then look like below and can be stored away safely as no longer used.



6 Mount the factory brackets as shown below on the Syvecs Yaris Ecu.



7 Plug in the 26Way connector into the back of the Syvecs Yaris Ecu and then mount back in the OEM Location as shown below.



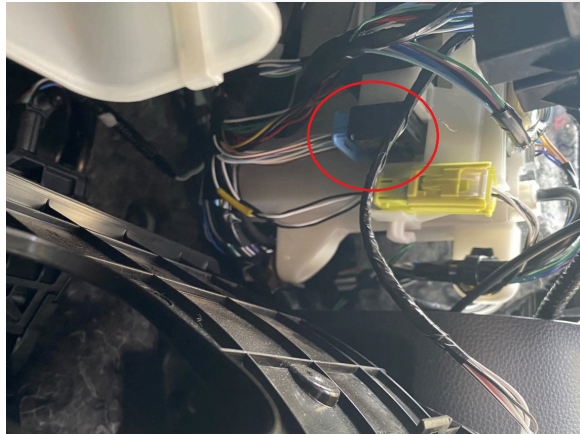
8 Remove the OEM Lambda Sensor and Replace with NTK Lambda. Connect the Lambda Loom from the 26Way connector on the back of the YarisPNP ecu into the NTK lambda.

9 Head inside the car and remove the panel found underneath the steering wheel. There is 2 cross-head screws found in each corner highlighted below.



10 Next look behind the panel removed and you will find a blue connector.

RHD



LHD



11 Unplug the blue connector by lifting the tab shown below. **DO NOT THROW AWAY THE BLACK CONNECTOR**

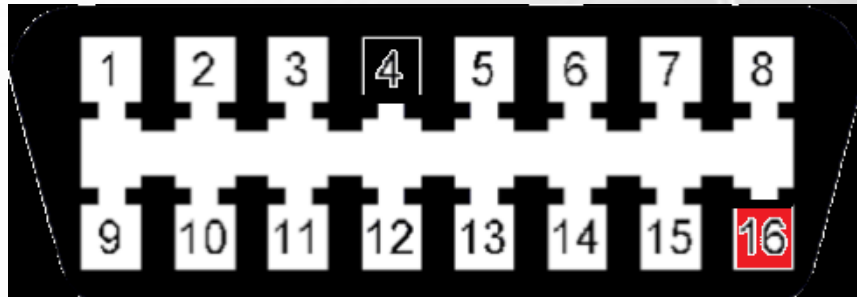


12 Plug in the Syvecs adaptor to the blue connector carefully and then connect the Red and Black wires from the Syvecs box to the 12v and Ground on the OBD2 connector as shown below

Pin16 (OEM Black Wire) – 12v

Pin4 (OEM White/Black Wire) – Ground

LOOKING INTO FRONT OF OBD2 CONNECTOR



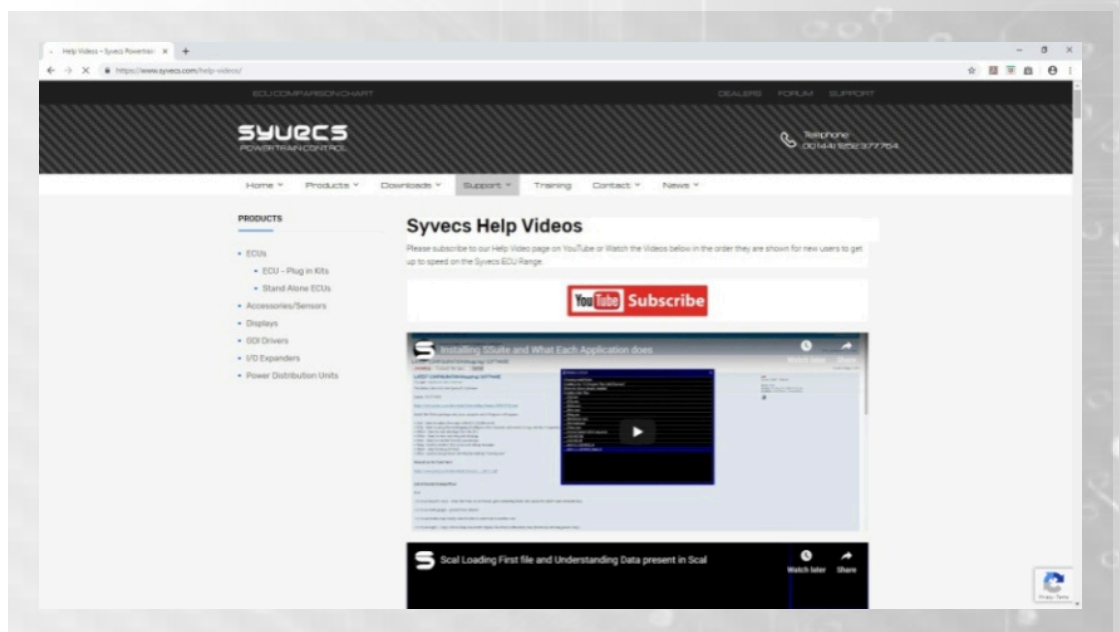
You will need to T into these wires

13 Secure the Syvecs Yaris Dash box and then refit the panels.

14 Re-Connect Battery Terminals.

15 Run the Ethernet cable into the Cabin bay to allow communications with the Ecu.

16 Proceed to Syvecs Help videos and Syvecs Manual on Website.



Calibration Switching

The OEM Cruise Lever can also be used for calibration Switching or used for Traction Control adjustments in the Scal software. After the engine is running the tacho will show the position on the RPM. Cal1 = 1000rpm, Cal2 = 2000rpm

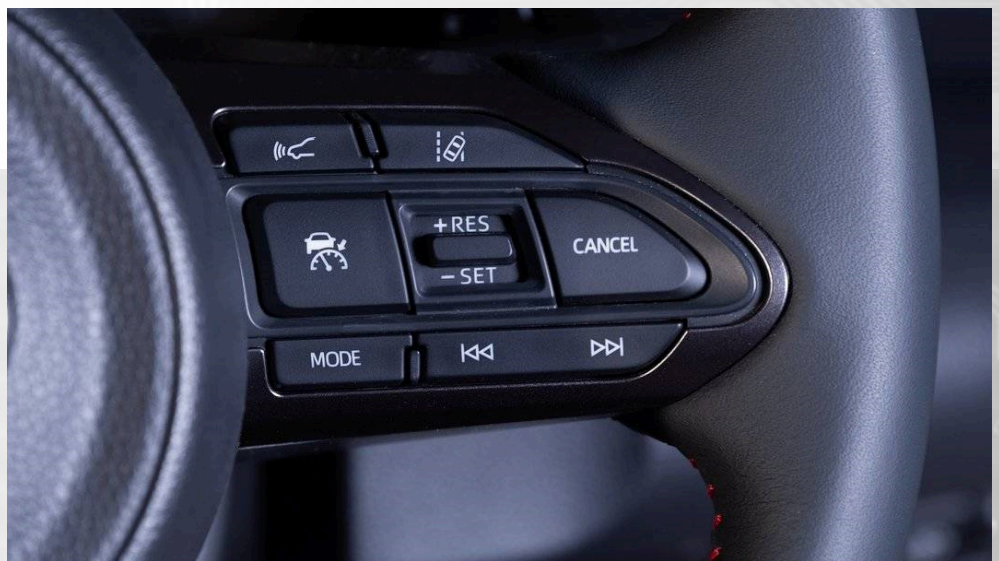
When changing Calibration the Speed Limit will be displays on the dash which illustrates the Flex fuel content percent.

+ RES = Cal Up / Cruise Speed Up

- SET = Cal Down / Cruise Speed Down

CANCEL = Cal Override / Rolling Antilag / Overboost Button

CRUISE ON = Cruise On Switch, Activates cruise Control



Traction Control - Expert Mode

The OEM traction button will change the TCSelect item in Scal when Expert mode is enabled. This will as standard in the base map cause the Syvecs Traction control strategy to be disabled. Calibrators can change this under Calibration Switches - Traction Control - Traction Control Gain Tuning.

Custom Features - Flex Fuel

Flex fuel is supported on the Syvecs Yaris GR Ecu, we recommend wiring the fuel composition Sensor into the OEM Maf connector as the MAF is not used with Syvecs Ecu. The Maf connector has a direct connection to input AN11 on the Syvecs ECU as well 5v and Ground present on the connector. The FuelComp % will be shown on the OEM Dash when changing Calibration in the Limit Speed Window.

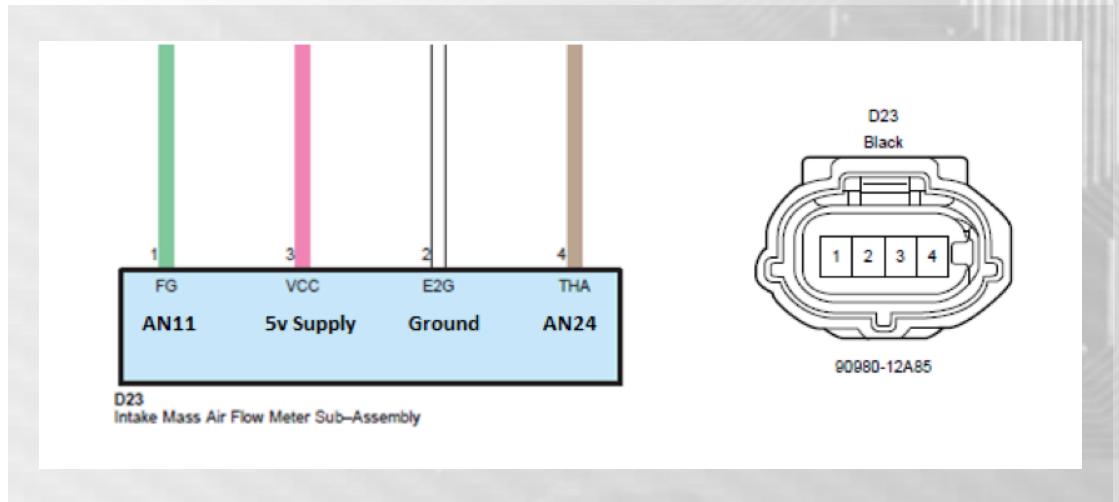
Wire the Flex Fuel as below

vOut = Pin1 on Maf (AN11)

Gnd= Pin2 on Maf (SensorGnd)

VCC = Pin3 on Maf (5vOut)

Pin 4 is a Spare thermocouple input AN24



Sequential Gearbox Wiring

The Syvecs Yaris kit fully supports sequential gearbox control, if you are planning to run with a pneumatic paddle shift setup then it will need a flag enabling on the ecu which is an extra cost.

If its just a load sensor and gear barrel then this is all enabled with the standard Plug in license using our closed loop gear cut and blip strategies.

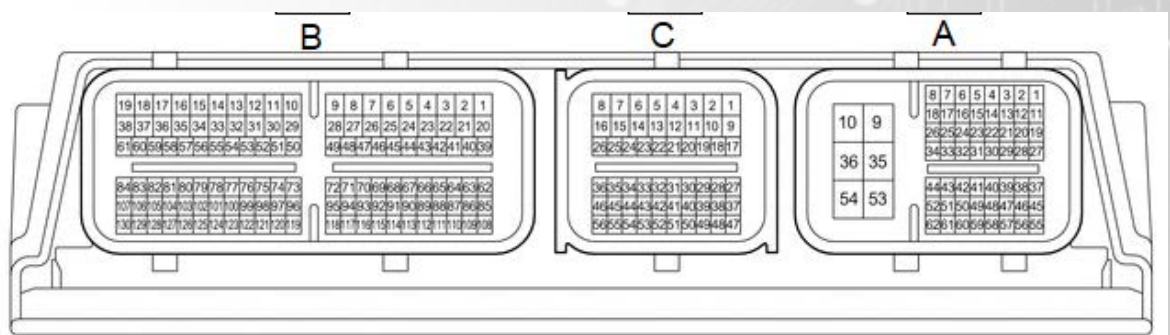
The load cell sensor should ideally be a resting 2.5v device and then move around this rest voltage depending on direction of load applied.

There is 2 free inputs on the Yaris Plug in ecu, these can be found on the oem connector pins below, you will need to cut the existing pin and wire in.

Alternatively you can use our X4 Expander for more inputs and outputs.

Pin C37 (Old HW) / External 26W Pin21(New Hw) - AN01 Input

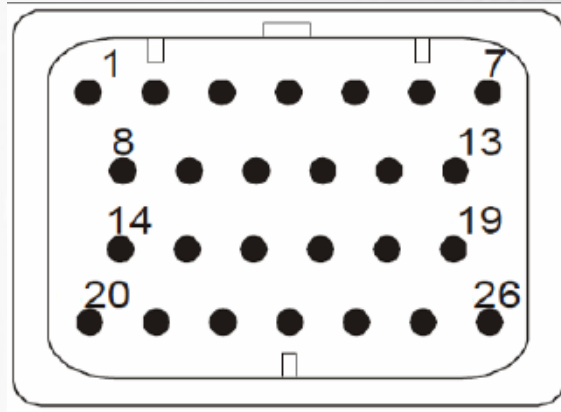
Pin B107 - AN11 Input (make sure its not being used for Flex fuel already)



Additional I/O – 26Way Header – Rev1 HW -2022-23

The Syvecs Yaris GR ECU has an additional I/O connector at the back of the Ecu.

Pinouts are below:



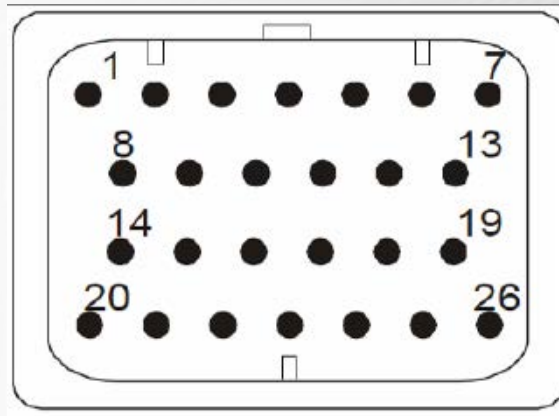
1. Ground
2. K-Type -
3. K-Type +
4. GDI4-
5. GDI4+
6. DensoHtr1 – Available for spare output if OEM Denso is not used (Assigned to Slave1Out1) in Scal
7. Vbat – 12v Supply to power ECU on bench or 12V Out for NTK Lambda Heater (Yellow Wire)
8. Fuel11 – Spare Output
9. Rs232RX
10. Lam1v – Grey Wire on L2H2 NTK Lambda
11. Lam1i – White wire on L2H2 NTK Lambda
12. LamGnd – Black wire on L2H2 NTK Lambda
13. Vbat-- 12v Supply to power ECU on bench or 12V Out for NTK Lambda Heater (Yellow Wire)
14. Out3 – Spare Output (Slave1Out3)
15. Rs232TX –
16. Can2L – Spare Canbus for External I/O Expander like X4/X10/X20 or for Aftermarket Dashboard
17. Can2H – Spare Canbus for External I/O Expander like X4/X10/X20 or for Aftermarket Dashboard
18. Can3L – Spare Canbus for External I/O Expander like X4/X10/X20 or for Aftermarket Dashboard
19. Can3H – Spare Canbus for External I/O Expander like X4/X10/X20 or for Aftermarket Dashboard
20. Out4 – Spare Output (Slave1Out4)
21. H-Bridge5
22. H-Bridge6
23. LanRX- Orange/White
24. LanRX+ White/Orange
25. LanTX- Green/White
26. LanTX+ White/Green

Additional I/O – 26Way Header

- Rev2 HW (ECU Purchases from 2024 onwards)

The Syvecs Yaris GR Rev2 ECU has an additional I/O connector at the back of the Ecu.

Pinouts are below:



1. Ground
2. K-Type -
3. K-Type +
4. GDI4-
5. GDI4+
6. Out1 – Available for spare output if OEM Denso is not used (Assigned to Slave1Out1) in Scal
7. Vbat – 12v Supply to power ECU on bench or 12V Out for NTK Lambda Heater (Yellow Wire)
8. Fuel11 – Spare Output
9. Rs232RX
10. Lam1v – Grey Wire on L2H2 NTK Lambda
11. Lam1i – White wire on L2H2 NTK Lambda
12. LamGnd – Black wire on L2H2 NTK Lambda
13. Vbat-- 12v Supply to power ECU on bench or 12V Out for NTK Lambda Heater (Yellow Wire)
14. 5v Regulated supply
15. Rs232TX -
16. Can2L – Spare Canbus for External I/O Expander like X4/X10/X20 or for Aftermarket Dashboard
17. Can2H – Spare Canbus for External I/O Expander like X4/X10/X20 or for Aftermarket Dashboard
18. Can3L – Spare Canbus for External I/O Expander like X4/X10/X20 or for Aftermarket Dashboard
19. Can3H – Spare Canbus for External I/O Expander like X4/X10/X20 or for Aftermarket Dashboard
20. Out4 – Spare Output (Slave1Out4)
21. AN01 Input
22. S1AN05 Input (slave1AN05)
23. LanRX- Orange/White
24. LanRX+ White/Orange
25. LanTX- Green/White
26. LanTX+ White/Green