

FuelX Autotune- Royal Enfield Classic 650

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Application information	FuelX
Vehicle	Royal Enfield
Model	Classic 650 Eu5+
Year of manufacture	2025

Note:

- Read through all instructions before installation and use.
- Ensure that the bike is switched off and the key is out of the ignition before proceeding with the installation.
- Some parts of the bikes might be hot/sharp and cause burns/cuts. Proceed with extreme caution or wait until the bike has cooled down. Always wear safety gloves.
- When the installation is complete, ensure to secure the wiring loom away from the movable parts or components that tend to heat up during the normal operation of the vehicle at any time.
- FuelX is intended for motorsport use on a closed course. Please check with your local laws before using this product. Race Dynamics is not liable for consequences arising from using the product.
- The steps demonstrated in the manual are for one cylinder. For multi-cylinder vehicles, the steps have to be replicated for the other cylinders.
- This document can also be used as a reference for the installation of Supermenteor/Shotgun 650 Eu5+

Support:

North & South America : +1 267 214 9292 (Call) +91 9606 044 178 (WhatsApp)

India, Bangladesh, Bhutan, Srilanka & Nepal : +91 9916 229 292 (Call & WhatsApp)

Rest of the world : +91 9606 044 177 (Call & WhatsApp)

Email : support@powertronicecu.com

Website : www.powertronicECU.com



for Indian specification vehicles, the FuelX module will have a sticker indicating it.



The warranty/support will not be provided for international users with Indian specification FuelX purchased from unauthorized re-sellers.

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1. FuelX

FuelX is an electronic, plug-in, fuel-injection optimizer for modern engines. It either enriches or decreases the AFR in all operating regions according to the rider's requirement. It autotunes the engine to the best operational parameters, constantly monitoring, learning, and adapting to the engine condition, wear and tear, riding style, add-ons (such as air filter and/or exhaust), etc as well as the environmental conditions such as temperature, humidity, altitude, etc. always ensuring the engine performs in the safest and most optimal zones.



The FuelX kit contains the following items

- FuelX Module
- Wiring Harness
- Handlebar map switch (Pro+/Pro version only)
- Zip ties
- Decals
- Quick start guide and Warranty card



Image 1.1

2. FuelX Variants:

FuelX Pro+

The FuelX Pro+ variant has 10 maps that can be changed depending on the preference of rider. For the Pro+ version, the FuelX contains an additional connector (Refer to Image 2.3) for the Handlebar Map switch (Refer to Image 2.2).



Image 2.1



Image 2.2

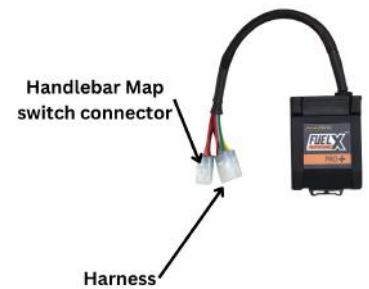


Image 2.3

FuelX Pro

The FuelX Pro variant has 10 maps that can be changed depending on the preference of rider. For the Pro version, the FuelX contains an additional connector (Refer to Image 2.6) for the Handlebar Map switch (Refer to Image 2.5)



Image 2.4



Image 2.5

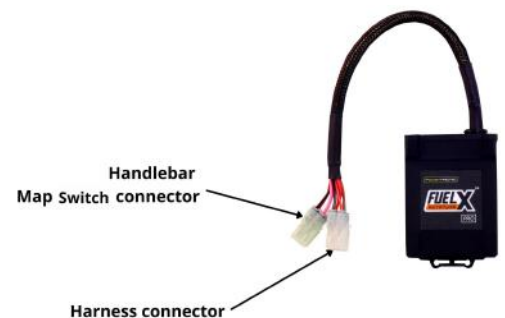


Image 2.6

FuelX Lite

The FuelX Lite variant has a single autotune map and only one connector for the harness.



Image 2.7

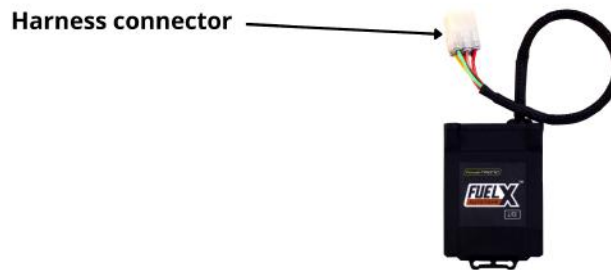


Image 2.7

3. FuelX Harness Connectors

The harness contains

- The Lambda (O_2) connectors [2 Pre-cat connectors, 2 Post-cat connectors]
- FuelX connector
- Ground/battery negative connector.



Image 3.1

The type and number of connectors may vary depending on the vehicle, year of manufacture, and the number of cylinders. Examples of different types of Lambda sensor connectors are shown below.



Image 3.2

The FuelX is connected between the Lambda sensor connector and the ECU. The male connector of FuelX is connected to the female of the Lambda sensor and vice versa.

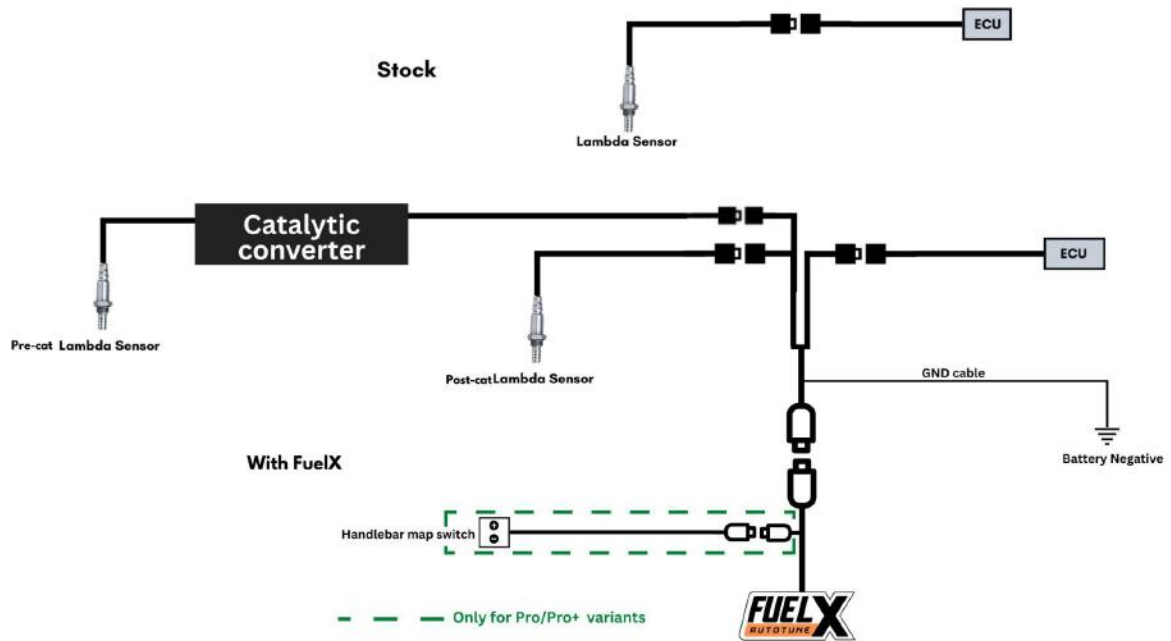


Image 3.3

4.1 Removing panels and fairing

Park the bike using the center stand on a level surface (Or a paddock stand).

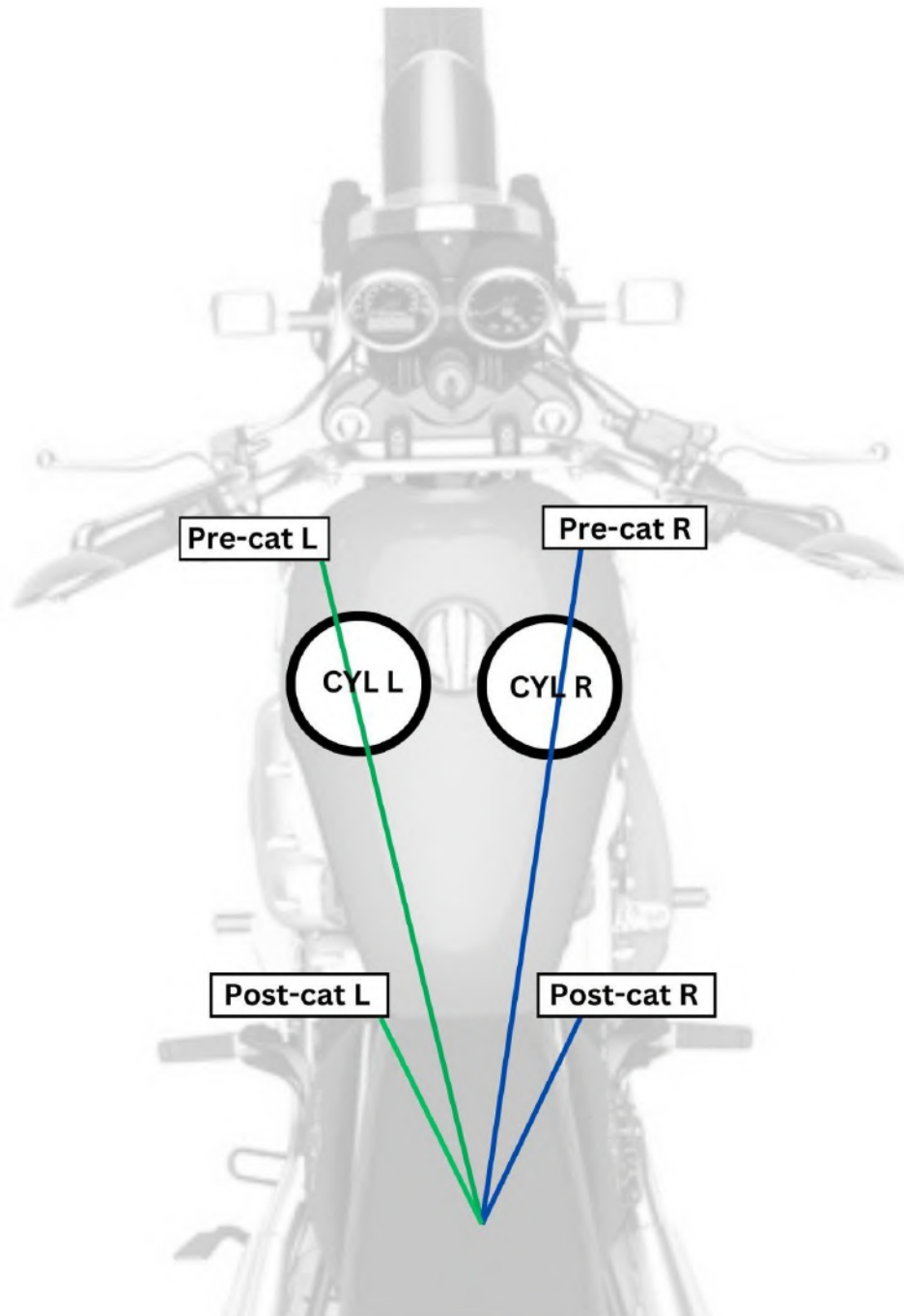


Image 1

Locate the position of the Lambda sensor connectors.



Image 2



Refer to the above image to identify the position of each connector on the FuelX harness.

4.1.1 Locate the seat bolts. Refer to **Image 3**.



Image 3

4.1.2 Unscrew the bolts using a T handle. Refer to **Image 4**.



Image 4

4.1.3 Gently remove the seat bolts. Refer to **Image 5**.



Image 5

4.1.4 Detach the rider seat gently. Refer to **Image 6**.



Image 6

4.1.5 Locate the tank mounting bolt. **Image 7** shows the position.



Image 7

4.1.6 Unscrew the nut and gently remove the bolt. Refer to **Image 8**.



Image 8

4.1.7 Gently lift the tank rear end, detach the fuelline. Refer to **Image 9**



Image 9

4.1.8 Locate and unplug the Fuel pump connector, and disconnect the vacuum hoses. Refer to **Image 10**



Image 10

4.1.9 Gently lift the fuel tank and place it safely. Refer to **Image 11**



Image 11

4.1.10 Locate and unscrew the 3 bolts for the panel under the rider seat. Refer to **Image 12**.



Image 12

4.1.11 After removing the panel bolts, detach the panel. Refer to **Image 13**.



Image 13

4.1.12 Locate and unscrew the right side panel mounting bolt. Refer to **Image 14**



Image 14

4.1.13 Locate and unscrew the right side metal panel mounting bolts. Refer to **Image 15**.



Image 15

4.1.14 Locate and unscrew the right side metal panel mounting bolts. Refer to **Image 16**.



Image 16

4.1.15 Locate and unscrew the right side panel mounting bolts. Refer to **Image 17**



Image 17

4.1.16 Gently detach the right side panel. Refer to **Image 18**.



Image 18

4.1.17 Locate and unscrew the side metal panel bolt and detach the panel. Refer to **Image 19**



Image 19

4.1.18 Route the FuelX harness. Refer to **Image 20**.



Image 20

4.1.19 Route the FuelX pre-cat right and left side connectors as shown in the image. Refer to [Image 21](#)



Image 21

4.1.20 Route the FuelX Pre-cat right and left side connectors as shown in the image. Refer to [Image 22](#)



Image 22

4.1.21 Refer to **Image 23** to locate the Pre-cat Lambda sensor Connector on the right side.



Image 23

4.1.22 Disconnect the male and female connectors. Refer to **Image 24**.



Image 24

4.1.23 Connect the FuelX male connector to the Stock female Lambda connector. Refer to **Image 25**



Image 25

4.1.24 Connect the FuelX female connector to the Stock male Lambda connector. Refer to **Image 26**



Image 26

4.1.25 Refer to **Image 27** for the completed view. **Repeat the processes on the other side also.**



Image 27

4.1.26 Using the zip ties provided within the kit, tie the cable to the frame. Refer **to image 28**



Image 28

4.1.27 Remove the underbelly panel and access the post cat Lambda connectors. Refer to image 29



Image 29

4.1.28 Route the FuelX Post cat Lambda sensor connectors as shown in the image. Refer to image 30



Image 30

4.1.29 Route the post cat Lambda ensor connectors as shown in the image. Refer to image 31



Image 31

4.1.30 Connect the FuelX Post cat male connector to the Stock female Lambda connector. Refer to image 32



Image 32

4.1.31 Connect the FuelX Post cat fe male connector to the Stock male Lambda connector. Refer to image 33



Image 33

4.1.32 Connect the ground connector of the FuelX to the battery negative terminal. Refer to Image 34



Image 34

4.1.33 For the Handlebar map switch installation in variants, start from the front end. Refer to **Image 35**



Image 35

4.1.34 Route the connector end of the handlebar map switch as shown in the image. Refer to **Image 36**



Image 36

4.1.35 Connect the dovetail bracket, and using the 2.5 mm allen key, tighten the bolts. Refer to **Image 37**



Image 37

4.1.36 Attach the second bolt. Refer to **Image 38**



Image 38

4.1.37 Place the FuelX securely under the seat. Refer to **Image 39**



Image 39

4.1.38 Connect the FuelX to the harness. Refer to **Image 40**



Image 40

4.1.39 Connect the handlebar map switch connector to the FuelX connector. Refer to **Image 41**



Image 41

4.1.40 Using the provided nylon tags, secure the FuelX and the harness by attaching them to the frame.

4.1.41 Repeat the Lambda sensor connector on the other side as well.

4.1.52 Attach the panels and the tank back.

5. FuelX Configurations and Settings

For Pro versions, maps on the FuelX can be changed according to the preference of customer. By just pressing the +/- button on the Handlebar map switch. The **Green LED** on the FuelX Handlebar map switch will help the customer know which map is active. Ie, the number of blinks on the handlebar switch indicates the number of maps.

Map No	Map Description
1	LEAN (Less Fuel)
2	
3	STOCK
4	
5	
6	
7	
8	
9	
10	RICH (More Fuel)

Image 5.1

The rider can choose the map according to the fuel enrichment he wants.

The first two maps are lean maps.

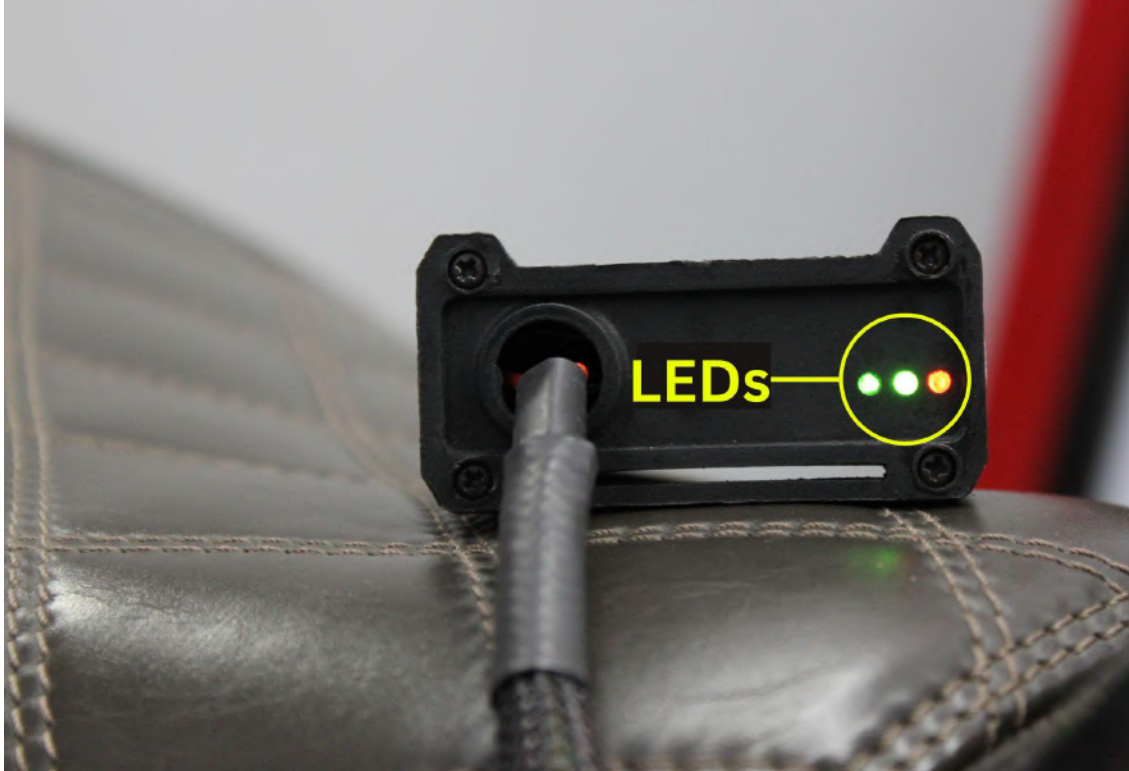
Map 3 runs with stock AFR set by the OEM manufacturer.

Maps 4 from 10 make the AFR richer as the numbers go higher.

For Lite versions, a single autotune map is provided for adjusting the AFR for the best operational parameters.

6. FuelX LEDs

FuelX has LEDs on the module to indicate the operation.



The blinking of the **Red LED** indicates that the Map on the FuelX is being activated. The Red LED starts blinking after the key and the kill switch are on.

The blinking of the **Green LEDs** during the idling of the engine indicates that the FuelX is working in sync with the OEM ECU.

The working of both Green and Red LEDs indicates that the FuelX is functioning as intended.