

# PowerTRONIC V4 Installation Manual- KTM Duke 390 (2024)

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Application information	Vehicle Specific
Vehicle	<b>KTM</b>
Model	<b>Duke 390</b>
Year of manufacture	<b>2024</b>
PowerTRONIC application	All PowerTRONIC ECUs

**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 may cause burns/cuts. Proceed with extreme caution or wait until the bike has cooled down. Always wear safety gloves.
- When the installation is complete, make sure to secure the wiring loom away from the movable parts or components which tend to heat up during the normal operation of the vehicle at any chance.
- PowerTRONIC is intended for motorsport use on a closed course, please check with your local laws before using this product. Race Dynamics / PowerTRONIC is not liable for consequences arising out of using the product.

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### 1. Parts list

1	PowerTRONIC	Piggyback ECU
2	Stock Coupler	Stand by unit <ul style="list-style-type: none"> <li>• Can be connected in place of the PowerTRONIC to run the bike in stock mode if need be.</li> <li>• Used for the verification of the connectors involved.</li> </ul>
3	Harness	Bike specific harness contains the following connectors <ul style="list-style-type: none"> <li>• Fuel injector connector</li> <li>• Spark/Ignition coil connector</li> <li>• Throttle position sensor connector (TPS)</li> <li>• Crankshaft position sensor connector(CKP)</li> <li>• Map selection connector</li> <li>• Quick shifter connector</li> <li>• Ground terminal</li> </ul>
4	USB cable	Can be used to connect the PowerTRONIC to a laptop for throttle calibration or change maps
5	Nylon Tags	To secure the wiring harness
6	User guide and Warranty card	Instructions

### 2. Tools required

Serial No	Main tools	Optional tools
1	M10, M12, M17 Hexagonal socket	Spinner handle
2	M10 T bar Hexagonal Socket wrench	Ratchet handle
3	Wire cutter	Extension bar or Sliding T-bar
4	Phillips head screwdriver	

### 3. Installation procedure

#### 3.1 Removing panels, fairing

Park the bike using the center stand on a level surface (Or a paddock stand). Refer to [Image 1](#)



Image 1

**3.1.1** Detach the pillion seat by inserting the key into the keyhole shown in **Image 2**, and unlock the pillion seat. **Image 3** shows the pillion seat detached.



Image 2



Image 3

3.1.2 Detach the rider seat. (Gently lift and slide it towards the rear end - Refer to **Image 4**).



Image 4

3.1.3 Locate the tank rear mounting bolts (4 nos). Refer to **Image 5**



Image 5



**3.1.4** Unscrew the tank rear mounting bolts using 4mm Allen key. Refer to **Image 6**



Image 6

**3.1.5** Locate and unscrew the tank front mounting bolts using a 14mm Hexagonal socket. Refer to **Image 7** and **Image 8**



Image 7



Image 8

3.1.6 Gently lift the tank front and locate the canister. Gently unplug the canister from the slot. Refer to [Image 9](#).



Image 9

3.1.7 Locate and unplug the Vacuum hoses from the tank. Refer to [Image 10](#)



Image 10

3.1.8 Detach Fuel plump connector. Refer to [Image 11](#).



Image 11



**3.1.9** Locate and gently detach the Fuel Line. Refer to **Image 12**.



Image 12

**3.1.10** Locate and gently detach the Bank angle sensor from the left side panel. Refer to **Image 13**.



Image 13

3.1.11 Gently lift the tank assembly and place it safely. Refer to [Image 14](#)



Image 14

3.1.12 Unscrew the bolts using the 5mm Allen key from the ignition coil cover. Refer to [Image 15](#)



Image 15

**3.1.13** Remove the ignition coil cover. Refer to **Image 16**



Image 16

**3.1.14** Remove the battery-relay box cover. Refer to **Image 17**



Image 17



**3.1.15** Locate the headlight adjuster bolt. Refer to **Image 18**



Image 18

**3.1.16** Unscrew the headlight adjuster bolt using a 4mm Allen key. Refer to **Image 19**



Image 19



**3.1.17** Locate and unscrew the headlight mounting bolts using a 5 mm Allen key from both sides. Refer to **Image 20**



Image 20

**3.1.18** Carefully keep the spring and washer. Refer to **Image 21**



Image 21

**3.1.19** Carefully unplug the headlight connectors. Detach the headlight assembly and place it safely. Refer to [Image 22](#) and [Image 23](#)



Image 22

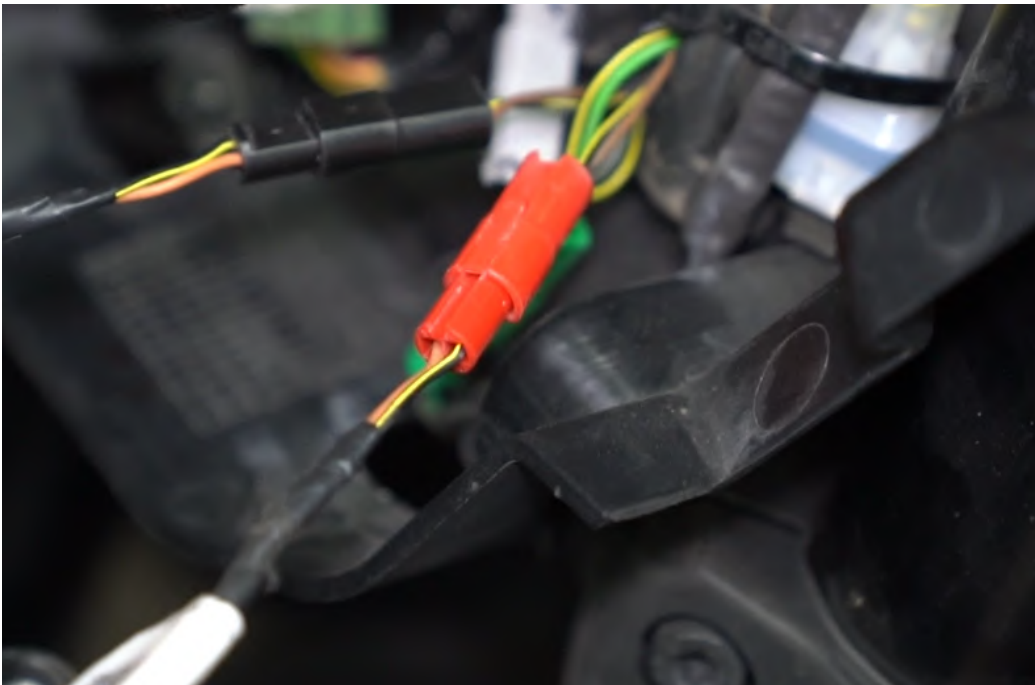


Image 23

### 3.2 Routing the harness

3.2.1 Place the harness on the bike and route the harness branches to the individual connectors. Refer to **Image 24.**



Image 24

3.2.2 Route the CKP connector to the position shown in the image below. Refer to **Image 25.**



Image 25



**3.2.3** Note that the TPS connector goes to the front end of the bike, behind the headlight assembly. Refer to **Image 26** to understand the routing of The TPS connector.



Image 26

**3.2.4** Route the SPK connectors to the ignition coil. Refer to **Image 27**



Image 27



### 3.3 Fuel Injector Connector (Left side of the bike)

3.3.1 Locate the stock injector connector of your bike. Refer to **Image 28** and **Image 29** below.



Image 28



Image 29

**3.3.2** Identify the fuel injector connector in the PowerTRONIC wiring harness. The connectors are labeled 'INJ'

**3.3.3** Disconnect the injector connector on your bike. Refer to the zoomed view (**Image 30**) below.



Image 30

**3.3.4** Connect the female PowerTRONIC injector connector to the stock male injector connector. Refer to **Image 31**



Image 31

3.3.5 Connect the stock female injector connector to the PowerTRONIC male injector connector. Refer to [Image 32](#)



Image 32



### 3.4 Crank position sensor (Left side of the bike)

3.4.1 Locate the stock crankshaft position sensor connector on the bike. Usually located right above the engine. Refer to **Image 33** and **Image 34** below.



Image 33



Image 34



3.4.2 Disconnect the stock CKP connector. Refer to [Image 35](#).



Image 35

3.4.3 Connect the PowerTRONIC male CKP connector to the stock female CKP connector. Refer to [Image 36](#)



Image 36

3.4.4 Connect the PowerTRONIC female CKP connector to the stock male connector. Refer to **Image 37**



Image 37



### 3.5 Ignition Coil Connector (Left side of the bike)

**3.5.1** Locate the stock Spark/Ignition coil connector on the ignition coil. Usually located right above the engine. Refer to **Images 38** and **Image 39** below.



Image 38



Image 39



- 3.5.2 Identify the Spark/Ignition coil connector in the PowerTRONIC wiring harness. The connectors are labelled 'SPK'
- 3.5.3 Disconnect the stock ignition coil connectors. Refer to **Image 40** below.



Image 40

- 3.5.4 Connect the PowerTRONIC Ignition coil male connector to the stock ignition coil female connector. Refer to to **Image 41** below.



Image 41

3.5.5 Connect the PowerTRONIC Ignition coil female connector to the stock ignition coil male connector. Refer to [Image 42](#) below.



Image 42

### 3.6 Throttle position sensor connector (Right side of the bike)

**3.6.1** Locate the TPS connector of your bike. It is generally located on the throttle body, parallel to the throttle cable return springs. Refer to **Image 43** and **Image 44** below.

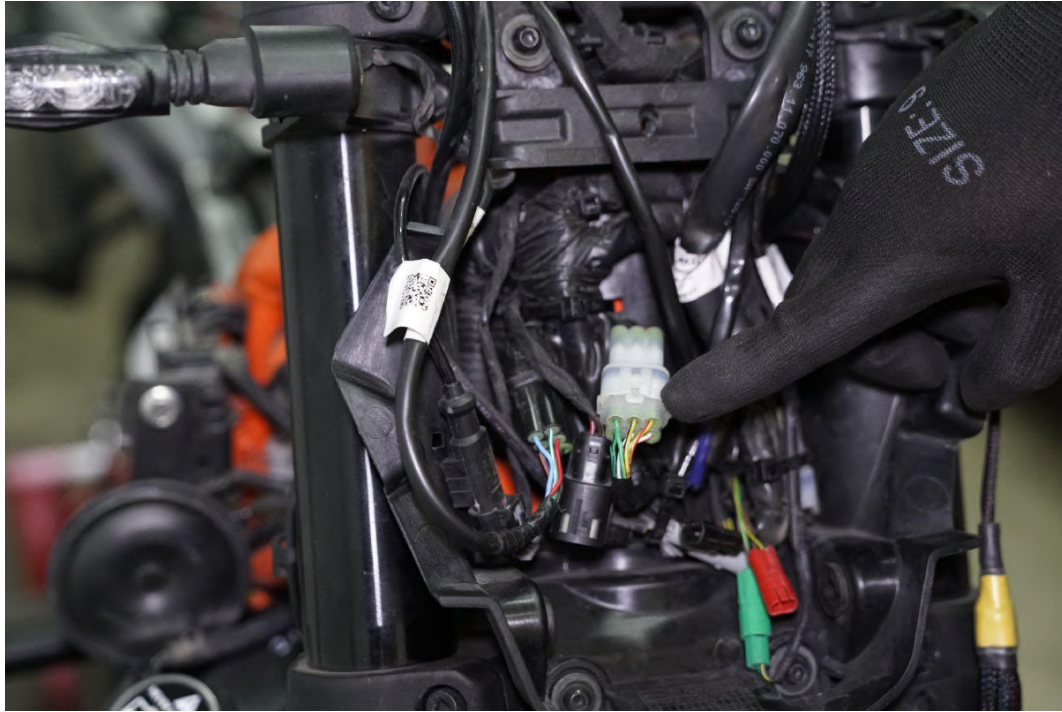


Image 43



Image 44



**3.6.2** Identify the Throttle Position sensor connector in the PowerTRONIC wiring harness, labeled as 'TPS'

**3.6.3** Disconnect the stock TPS connector. Refer to **Image 45**



Image 45

**3.6.4** Connect the PowerTRONIC male TPS connector to the stock female connector. Refer to **Image 46**.



Image 46

**3.6.5** Connect the PowerTRONIC female TPS connector to the stock male connector. Refer to **Image 47**.



Image 47

**3.6.6** We advise you to perform a TPS calibration after the installation of PowerTRONIC ECU.  
Refer to the detailed TPS calibration document.

### 3.7 Ground Terminal Connector

3.7.1 Identify the Ground terminal connector labelled GND. Refer to **Image 48**



Image 48

### 3.8 Securing the harness using ties

3.8.1 Secure the harness away from general heating areas by attaching it to the chassis or frame using the zip ties provided wherever necessary. Refer the **Image 49**



Image 49



**Important note:** The PowerTRONIC harness contains a Quick shifter connector. If you have bought the Quickshifter please attach the connector to it.

If you have not bought the Quickshifter, you can leave it disconnected but make sure the harness is secured using zip ties provided.

### 3.9 Testing with the stock coupler

3.9.1 Attach the fuel tank.

3.9.2 You can verify the connections by attaching the stock coupler. Refer detailed Stock coupler test document.



Image 50

3.9.3 **DO NOT** proceed with PowerTRONIC ECU without verifying the connections with stock coupler.

### 3.10 Plugging in the PowerTRONIC ECU.

Connect the PowerTRONIC to the harness by connecting the 24-pin connector. Secure it in the glove box. Refer to [Image 51](#).



Image 51

### 3.11 Attaching the panels/fairing etc

Attach the panels, and fairing as removed from the bike.