



VORTEX PERFORMANCE PTY LTD  
CROYDON SOUTH, 3136  
VICTORIA, AUSTRALIA

WWW.VORTEXCDI.COM

## KX450(F) 2024 VORTEX X10 ECU INSTALLATION INSTRUCTIONS

Thankyou for purchasing your Vortex X10 ECU (Engine Control Unit). We hope you will enjoy the benefits of our product. Please read and follow the below mounting and operation instructions carefully before using this product.

**Step 1:** Remove the bikes seat.

**Step 2:** Clean any dirt around the standard ECU box and main harness connector with a wet sponge and detergent. Allow to dry or blow off any excess water with high pressure air. **Give extra attention to any dirt near the connector housing as any dirt that enters the connector when it is unplugged can cause permanent damage to the wiring harness.**

**Step 3:** Remove the Standard ECU and rubber boot from the standard mounting bracket. **CAREFULLY** unplug the 33Way connector from the ECU. **Note: These connectors have a locking tab that needs to be pressed to release the locking tab before unplugging. DO NOT PULL ON THE WIRING HARNESS WHEN UNPLUGGING THE 33 WAY CONNECTOR.**

**Step 4:** Remove the Vortex ECU from its packaging and slide into the Vortex Rubber Mounting Boot as per the below picture. Note for this model the ECU will not be positioned all the way into the rubber boot.

**Step 5:** Use a small flat blade screwdriver to set the desired X10 Map then slide the VORTEX X10 ECU and Rubber Boot assembly onto the mounting bracket on the top of the airbox.



**Step 6:** Carefully plug the 33 Way connector onto the VORTEX ECU and push firmly until the locking tab clicks. Route the black Vortex ECU Programming harness (with rubber cap) and \* way Options Port Connector in front of the ECU towards the fuel tank and lightly zip tie to the main harness. **NOTE: Do not over tighten zip ties on any wiring**

**Step 7:** Replace the seat being careful there is no contact between the seat base and the ECU & Rubber Boot as this can cause damage to the ECU. Replace the seat bolts.  
Installation of the Vortex ECU is now **complete!** **NOTE: SEE OVER FOR OPERATING INSTRUCTION**

## MAP SELECTOR & FUEL TRIM Switch Operation:

The Vortex X10 ECU has 10 Pre-programmed Power settings from “Mild to Wild”. By changing the position of the X10 Switch on the ECU the user can change the type of power delivery for different rider styles or track conditions. See Map listing chart for explanation of the power type expected from each setting. In addition there are three switches which will modify the fuel supplied to the motor through the EFI system. These switches are divided as follows:

**LO:** 5-25% Throttle .....(Like a Pilot Jet on a Carby)

**MID:** 33-66% Throttle ....(Like a Needle Jet on a Carby)

**HI:** 75-100% Throttle .....(Like a Main Jet on a Carby)

Each switch position is either + or – fuel in 2.5% increments. The base position is “5,5,5” with position 6 through 0 adding fuel and position 4 through 1 is subtracting fuel from the selected X10 Map. For example if a fuel trim switch is on position 6 then 2.5% fuel is added to the selected map. If a fuel trim switch is in position 3 then 5% fuel is subtracted from the selected map.

**NOTE:** It is not advisable to go leaner on any setting unless you are an experienced engine tuner or are monitoring the Air/Fuel ratio with a wideband sensor / reader. Air / Fuel Ratios great than 15:1 can cause serious engine damage.

**NOTE:** This model bike has a gear position switch and the Vortex ECU will use MAP 9 for the Neutral gear position. This has a lower rev limit to prevent over rev under no load free revving.

## HANDLEBAR SWITCH OPERATION USING THE VORTEX ECU



## MAP SELECTION CONTROL VIA STANDARD SWITCH

The Vortex ECU interacts with the Standard Handlebar switch to select maps. The **BLUE “M”** switch can switch between MAP 1 (Single LED Flash) and MAP X10 which is the map selected via the X10 Switch on the VORTEX ECU. When the second map is selected the **BLUE LED** will flash the number of the selected map. To check what map you are on press the blue button quickly and the number of flashes 1 or X10 will indicate which map. To swap from one map to the other press the button for one second and release.

**Note:** This flash of the map number should not be confused with the Fault Flash Codes provided to indicate a faulty sensor. The Fault codes display as a slow flash with a long break between counts of the Amber Coloured LED. See included Fault Flash Codes sheet for a description of these codes.

## **LAUNCH CONTROL OPERATION (TIMER MODE):**

The Vortex X10 ECU has a launch control algorithm and Mapping that can be operated using the Standard Launch Switch. To activate Launch Mode put the bike in first or second gear, press the **BLUE** map button for 2 seconds.

**Note: If the button is pressed for 3 seconds then the launch mode will disable.** When in launch mode the **PURPLE** indicator LED will flash rapidly.

The intended method for starting in Launch Mode is to have the bike in second gear and hold the throttle so that the engine is on the rev limiter. When the gate drops feed the clutch out normally controlling the power. When the ECU detects launch a timer will be activated then will de-activate when the pre-programmed time has expired. Normal operation will then resumed. See map listing for further details.

## **DYNAMIC TRACTION CONTROL**

The Vortex X10 ECU has a feature called Dynamic Traction Control (DTC). As the name suggests when DTC is turned on the ECU will monitor rear wheel acceleration and when the pre programmed acceleration is exceeded will change parameters to reduce engine power and thus wheel spin.

To activate DTC with the Engine Running and in Neutral Gear - Press the **GREEN "T"** Button. The **GREEN LED** will come on SOLID when DTC is ACTIVE. To turn DTC off press the button again and the **GREEN LED** will be off.

## **TPS END-POINT SETTING**

This Vortex X10 ECU-8E can set the TPS (Throttle Position Sensor) endpoint voltages without the need for a PC or any other device. It may be necessary to set the TPS endpoints when you first install the ECU or after the ECU is re-programmed, the TPS is replaced, or the Idle Stop has been adjusted. To set follow the following steps:-

1/ With the THROTTLE CLOSED :- PRESS and HOLD the KILL SWITCH at the same time as pressing the STARTER BUTTON for 1 second. Release all and proceed to step 2.

2/ With the THROTTLE FULLY OPEN :- PRESS and HOLD the KILL SWITCH at the same time as pressing the STARTER BUTTON for 1 second.

3/ TPS endpoints are now set. This process can be repeated at any time as required.

## **INDEMNITY**

**Note:** This is a performance product and is designed for closed course competition use only. The manufacturer or their distributor accepts no responsibility for damage or injury caused by this product. Because we cannot control the application or use of this product, the buyer assumes all risks of any and all damage that may occur to their self, their machinery or third party due to the use of this product. The product is guaranteed against manufacturing defects.