



ELITE PRO PLUG-IN FORD FALCON I6 BARRA QUICK START GUIDE

LIMITED WARRANTY

Unless specified otherwise, Haltech warrants its products to be free from defects in material or workmanship for a period of **12 months** from the date of purchase.

Proof of purchase in the form of a copy of the original purchase invoice, receipt or bill of sale which indicates that the product is within the warranty period, must be presented to obtain warranty service. If the Haltech product is found to be defective as mentioned above, it will be replaced or repaired if returned prepaid along with proof of purchase. This shall constitute the sole liability of Haltech.

To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations, either expressed or implied, including any implied warranty of merchantability or fitness. In no event shall Haltech, be liable for special or consequential damages.

WIRING AND SETUP WARNING

If your ignition or fuel system is incorrectly configured and the ECU is powered up, damage to the engine or components may occur. To avoid damage remove the main ignition and injection fuses before powering up for the first time. Re-fit fuses when configuration of the ignition and fuel system is completed and checked in the Elite Software Programmer.

It is good practice to also disconnect when updating firmware within the ECU. Failure to follow all the warnings and precautions in this manual can lead to damage to engine components and may possibly void your warranty. Incorrect setup of the ECU can also lead to damaged engine components.

Damaged components due to incorrect setup will not be regarded as warranty repairs.

INSTALLATION OF HALTECH PRODUCTS

No responsibility whatsoever is accepted by Haltech for the fitment of Haltech Products. The onus is clearly on the installer to ensure that both their knowledge and the parts selected are correct for that particular application. Any damage to parts or consequential damage or costs resulting from the incorrect installation of Haltech products are totally the responsibility of the installer.

Always disconnect the battery when doing electrical work on your vehicle. Avoid sparks, open flames or use of electrical devices near flammable substances. Do not run the engine with a battery charger connected as this could damage the ECU and other electrical equipment. Do not overcharge the battery or reverse the polarity of the battery or any charging unit. Disconnect the Haltech ECU from the electrical system whenever doing any welding on the vehicle by unplugging the wiring harness connector from the ECU. After completing the ECU installation, make sure there is no wiring left un-insulated. Uninsulated wiring can cause sparks, short circuits and in some cases fire. Before attempting to run the engine ensure there are no leaks in the fuel system. All fuel system components and wiring should be mounted away from heat sources, shielded if necessary and well ventilated.

Always ensure that you follow workshop safety procedures. If you're working underneath a jacked-up car, always use safety stands!

PRODUCT RETURNS

Please include a copy of the original purchase invoice, receipt or bill of sale along with the unused, undamaged product and its original packaging. Any product returned with missing accessory items or packaging will incur extra charges to return the item to a re-saleable condition. All product returns must be sent via a freight method with adequate tracking, insurance and proof of delivery services. Haltech will not be held responsible for product returns lost during transit. The sale of any sensor or accessory that is supplied in sealed packaging is strictly non-refundable if the sealed packaging has been opened or tampered with. This will be clearly noted on the product packaging. If you do not accept these terms please return the sensor in its original unopened packaging within 30 days for a full refund.



Elite PRO Plug-in Ford Falcon I6 Barra

Quick Start Guide

Congratulations on your purchase of an Elite Series Haltech Engine Management System.

This *fully programmable* product opens the door to virtually limitless performance modifications and tuning of your vehicle.

Programmable systems allow you to extract all the performance from your engine by delivering precisely the required amount of fuel and ignition timing that your engine requires for maximum output under all operating conditions.

This quick start guide will walk you through installation of a Haltech Elite Pro Plug-in Series ECU into a vehicle.

This guide is accompanied by the Help information located on the Haltech Elite Software Programmer package provided on the USB with the ECU that you or your tuner will need to refer to before completing your installation and configuration.

More information is available from the Haltech website.

WARNING - HALTECH OFF-ROAD USAGE POLICY

It is unlawful to tamper with your vehicle's emissions equipment. Haltech products are designed and sold for sanctioned off-road / competition non-emissions controlled vehicles only. Using Haltech products for street/road use on public roads is prohibited by law. It is the responsibility of the installer and/or user of this product to ensure compliance with all applicable local and federal laws and regulations. Please check with your local vehicle authority before using any Haltech product.

ECU OVERVIEW

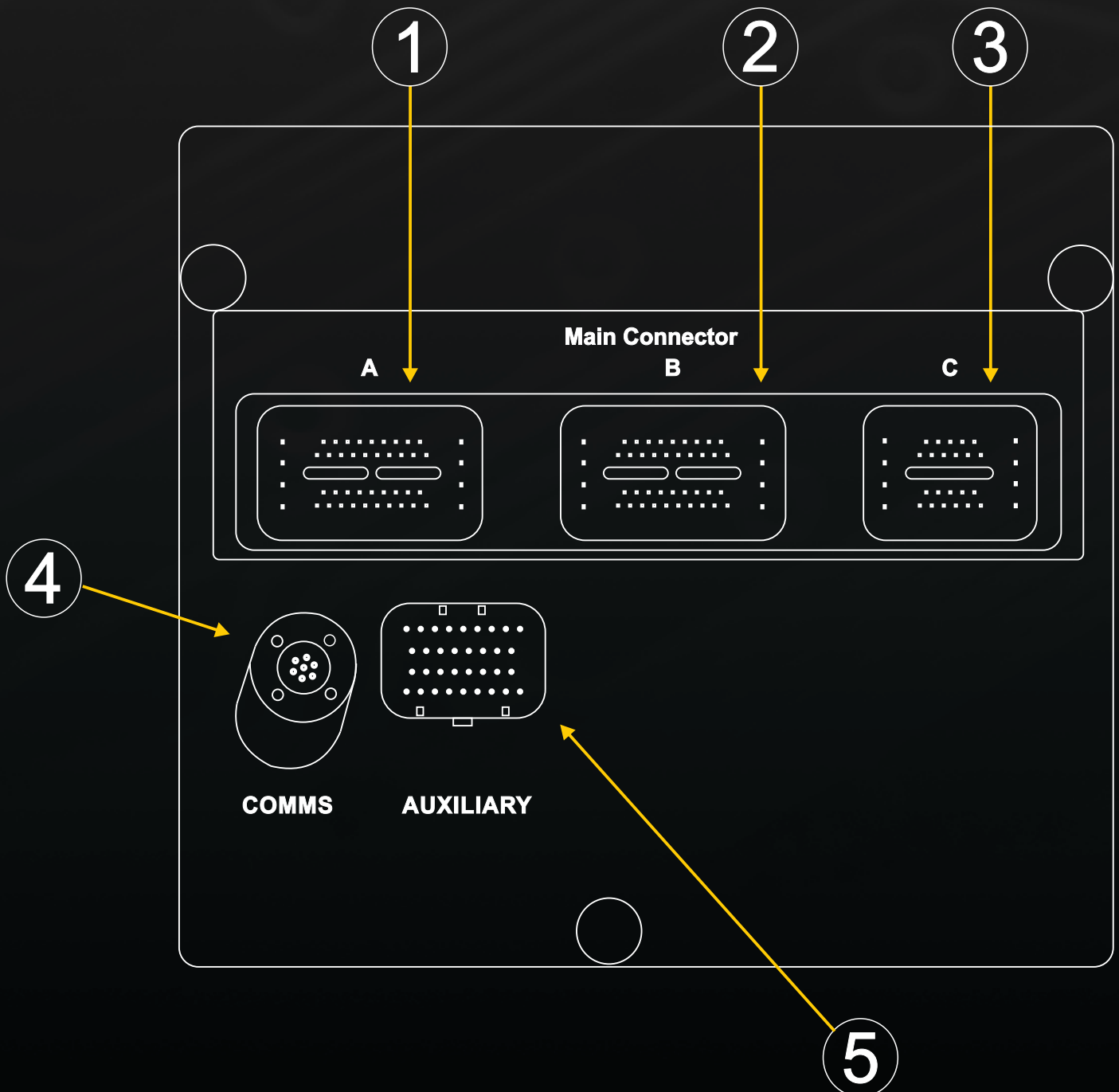
1 Main Connector A

4 Communications Port

2 Main Connector B

5 Auxiliary Connector

3 Main Connector C



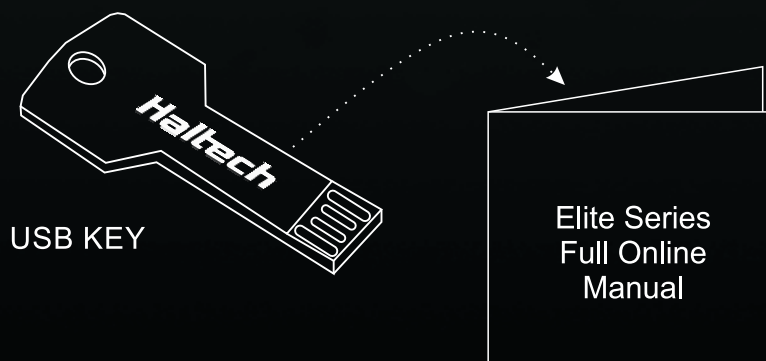
AUDIO MODULE WARNING

THE FACTORY FORD AUDIO MODULE MAINTAINS COMPLETE FUNCTIONALITY WITH THE INSTALLATION OF THE HALTECH ECU. FOR SOME VARIANTS, IF THE OEM ECU IS REINSTALLED AFTER THE HALTECH INSTALLATION, THE AUDIO MODULE MAY REQUIRE REPROGRAMMING. PLEASE CONTACT YOUR LOCAL FORD DEALERSHIP TO RE-ESTABLISH CORRECT OPERATION.

ELITE SOFTWARE PROGRAMMER INSTALLATION

MINIMUM SYSTEM REQUIREMENTS

Operating System:	Windows XP / Vista / 7 / 8 / 10
Processor:	Dual Core 2GHz
RAM:	2GB
Video Card:	128MB graphics card with 3D acceleration
USB:	1.1
HDD Space:	300MB
Min Screen Resolution:	1024 x 768 pixels



INSTALLATION

Installation of the Elite Software Programmer onto your PC is performed similar to any other Windows software package. Installation is outlined below.

1. Insert the included Haltech USB key into your computer
2. Open “My Computer” and see what drives are shown. The Haltech USB Key should be shown as a device with removable storage icon named “HALTECH”. Double click on the device icon to open the root directory of the Haltech USB Key.
3. Double click on the “Start Haltech Resource.exe” file to run the Haltech Resource Centre. A browser window will appear and you will need to agree to the terms stated before progressing. Read the disclaimer and click on “AGREE” if you agree. You will now be able to access all the information contained on the Haltech USB Key.
4. To download and install the Elite Software Programmer click on the software link. You will be prompted to install the software. Click “Install” to install the software to your computer.
5. Follow the software prompts to complete the Elite Software Programmer installation. Please note DirectX is required for correct operation of the Elite Software Programmer, the installer package will check your system and prompt for installation of DirectX if not already installed. Follow the prompts to complete.
6. Alternatively the software package can be directly downloaded and installed from the Haltech website www.haltech.com.au

INITIAL ECU SETUP

Your Elite Pro Plug-in Series ECU has been shipped in a default state. It will NOT start your vehicle without ESP configuration. Please follow the steps below to ensure you upload the correct Map, set your vehicle variant and calibrate your Drive-By-Wire system.

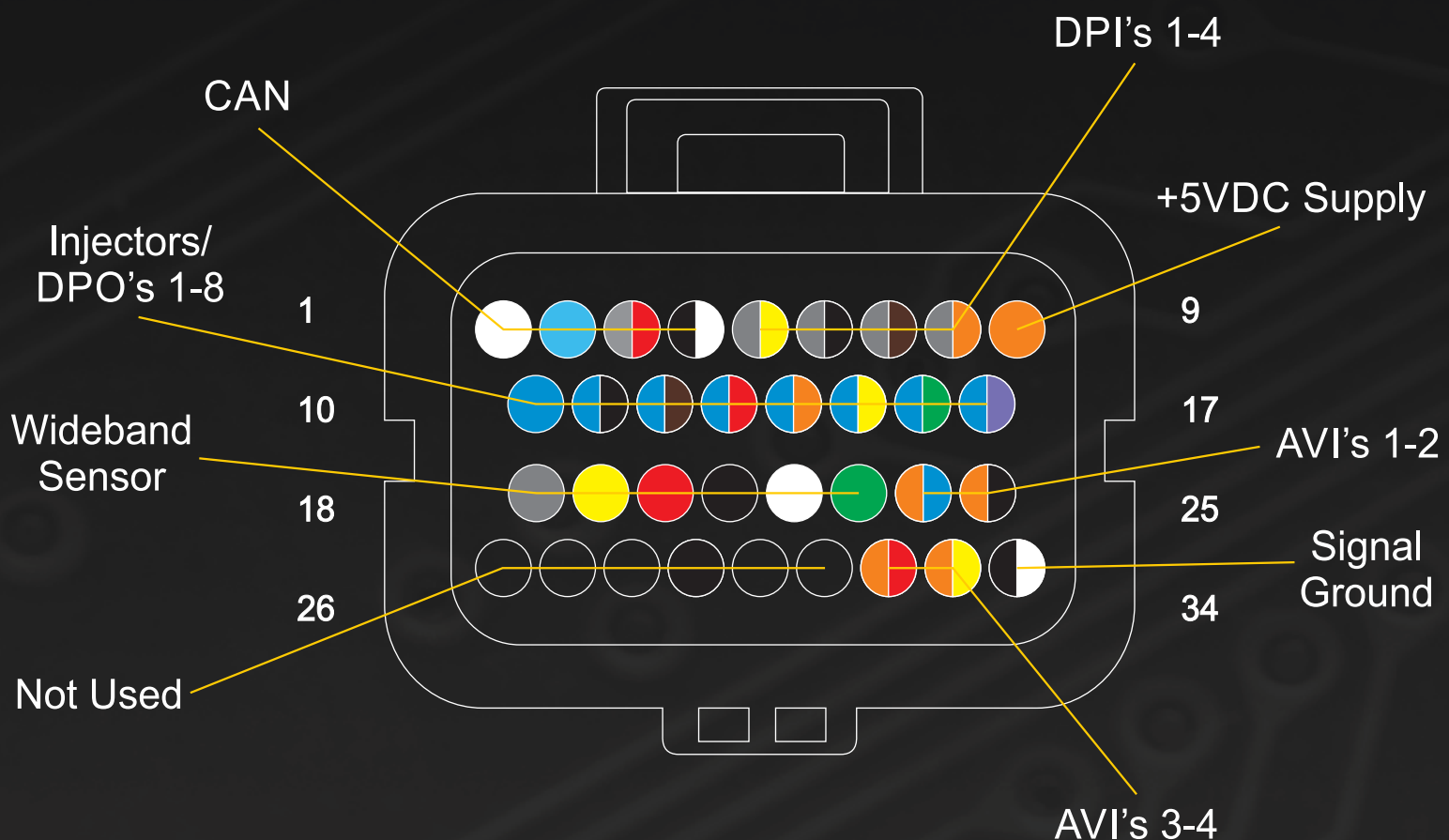
1. Ensure that the communications cable is connected to the communications port on your ECU and the USB cable is connected to your PC.
2. Power up the ECU by switching the ignition on and connect to your ECU through the Elite Software Programmer. Please wait until the Map loads and is fully displayed.
3. Click the 'File' tab and select 'Upload Map'. Ensure you choose the Map most specific to your vehicle variant.
4. Click the 'Setup' menu and select 'Main Setup'. Under Plug-in Information, choose your vehicle model. The chosen vehicle model must reflect how the vehicle came from the factory. If the vehicle was naturally aspirated from the factory, however is now turbocharged or supercharged, the naturally aspirated variant must be selected.
5. Select the 'Functions' tab and locate the Drive-By-Wire function. A Disclaimer will open up, be sure to read this and accept.
6. Select the Calibration tab in the Drive-By-Wire function and start the calibration process by first calibrating the Accelerator Pedal Position (APP) and then the Throttle Position Sensor (TPS). The TPS calibration will be performed automatically and when complete, click apply and the ECU is ready to be re-booted.
7. Your ECU is now set up and you may start the vehicle.

AUXILIARY CONNECTOR

OVERVIEW

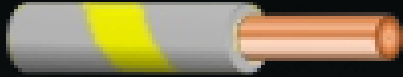
An auxiliary connector provides access to a number of additional inputs and outputs. This Elite Pro Plug-in ECU is equipped with an auxiliary connector kit (HT-131001). This kit contains 1 x auxiliary connector, 1 x pre-terminated CAN connector & 10 x pins. An appropriate crimping tool kit (HT-070300) can be purchased at www.haltech.com. An Elite Pro Plug-in 2.6m flying lead auxiliary harness (HT-131000) may be purchased if needed. Both the connector kit and 2.6m flying lead harness allow support for an additional 4 x AVI's, 8 x Injectors/DPO's & 4 x DPI's. Further access to support a Bosch LSU 4.9 wideband sensor is available with the purchase of an Elite Pro Plug-in wideband hardware pack (HT-010740).

The diagram below depicts an outline of the auxiliary connector and its pin numbering style.

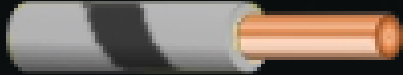


AUXILIARY CONNECTOR CONNECTION INFORMATION

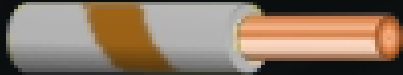
Digital Pulsed Inputs



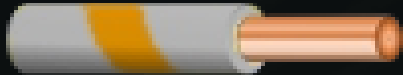
DPI 1 (Duty Cycle, Frequency or State, 25V Max Input)



DPI 2 (Duty Cycle, Frequency or State, 25V Max Input)



DPI 3 (Duty Cycle, Frequency or State, 25V Max Input)



DPI 4 (Duty Cycle, Frequency or State, 25V Max Input)

Analogue Voltage Inputs



AVI 1 (1K Switchable Pull-up, 0-5V Range, 20V Max)



AVI 2 (1K Switchable Pull-up, 0-5V Range, 20V Max)

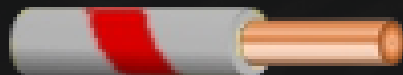


AVI 3 (1K Switchable Pull-up, 0-5V Range, 20V Max)



AVI 4 (1K Switchable Pull-up, 0-5V Range, 20V Max)

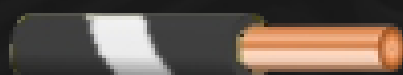
Power Sources



+12VDC Sensor/Relay Supply (2A Max)

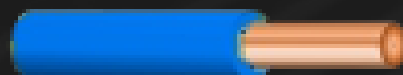


+5VDC Sensor Supply (100mA Max)



Signal Ground for Input Sensors

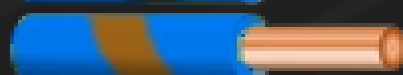
Stage 2 Injectors / Digital Pulsed Outputs



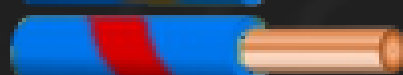
Injector #1 (8A Peak / 2A Hold) / DPO #1 (1A MAX)



Injector #2 (8A Peak / 2A Hold) / DPO #2 (1A MAX)



Injector #3 (8A Peak / 2A Hold) / DPO #3 (1A MAX)



Injector #4 (8A Peak / 2A Hold) / DPO #4 (1A MAX)



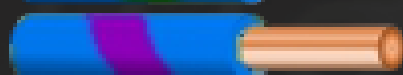
Injector #5 (8A Peak / 2A Hold) / DPO #5 (1A MAX)



Injector #6 (8A Peak / 2A Hold) / DPO #6 (1A MAX)



Injector #7 (8A Peak / 2A Hold) / DPO #7 (1A MAX)



Injector #8 (8A Peak / 2A Hold) / DPO #8 (1A MAX)

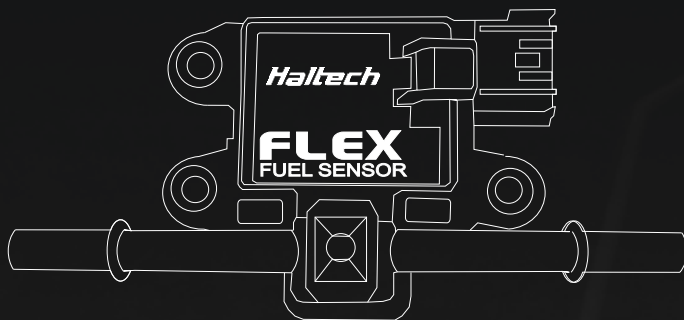
DPI

DIGITAL PULSED INPUTS

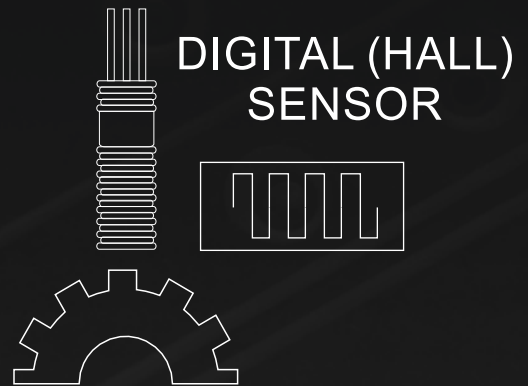
OVERVIEW

Digital Pulsed Inputs (DPI's) are capable of measuring the duty cycle, frequency or state of a signal. These inputs are suitable for speed sensors and switches such as fuel composition sensors, road speed sensors, flat shift switch and more.

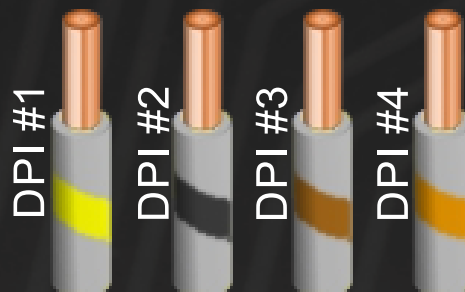
DPI's are compatible with digital (hall effect or optical) based sensors, have a maximum input voltage rating of 25VDC and can measure up to 50KHz Maximum frequency.



FREQUENCY BASED
FLEX FUEL SENSOR



DIGITAL (HALL)
SENSOR



AVI

ANALOGUE VOLTAGE INPUTS

WITH SELECTABLE PULL-UP TO 5V

OVERVIEW

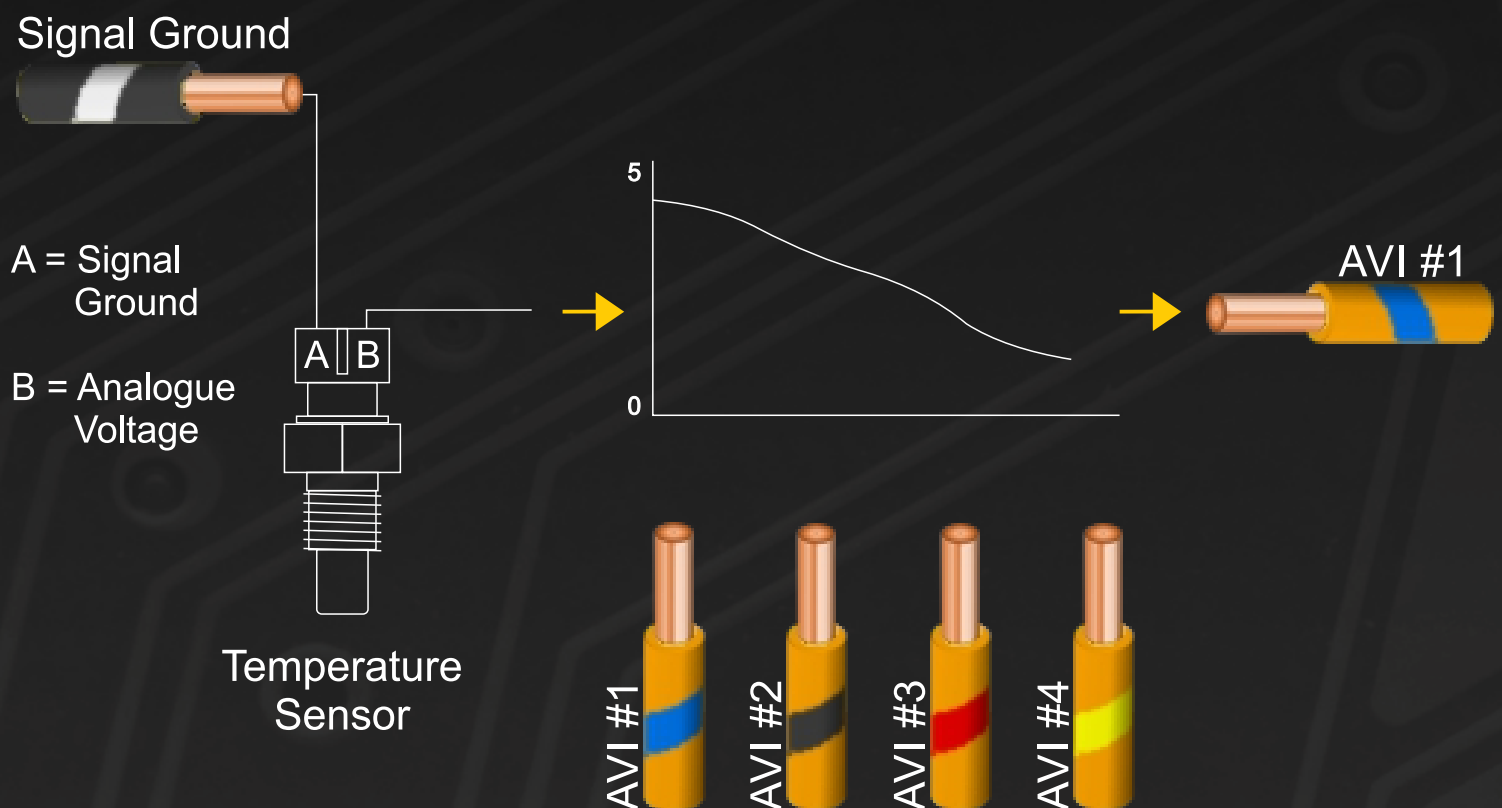
Analogue Voltage Inputs (AVI's) are inputs to the ECU that accept variable voltage signals from 0VDC to +5VDC such as signals from pressure, temperature and fuel level sensors.

AVI's can tolerate a maximum input voltage of +20VDC.

These inputs can also accept switched inputs that change between the two different voltage levels. The *On Voltage* and *Off Voltage* define what the thresholds are between the on and off states. The voltage can be viewed as a channel in the Elite Software Programmer to determine the thresholds for a switched input.

AVI's have a software selectable 1K pull-up resistor to +5VDC, which can be enabled or disabled with a check box within the setup page.

Pull-up resistors are generally enabled for temperature related sensors and switched to ground inputs.



WIDEBAND O2

HARNESS CONFIGURATION

OVERVIEW

A Wideband O2 sensor can be used by your Elite Pro Plug-in for monitoring purposes, or for closed loop O2 Control.

A wideband sensor, by definition, measures a broad section of the Air Fuel Ratio (AFR) scale. The Elite Pro Plug-in ECU provides on-board support for a Bosch LSU 4.9 wideband sensor and can be directly wired into the Auxiliary Connector. An Elite Pro Plug-in wideband hardware pack (HT-010740) may be purchased at www.haltech.com.

WIDEBAND HARNESS INSTALLATION (OPTIONAL)

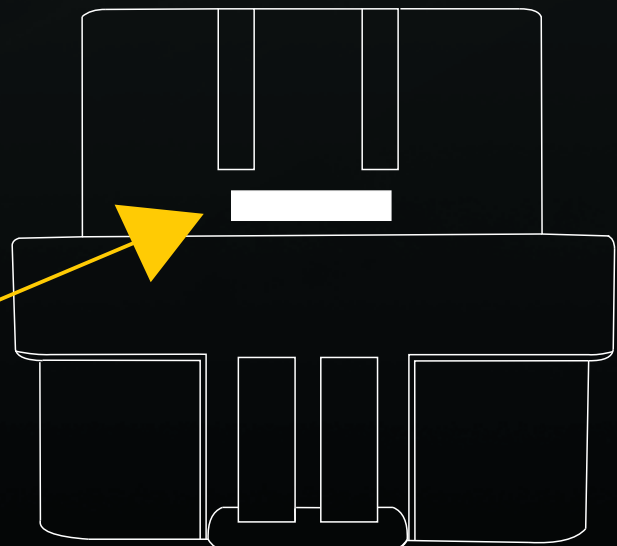
An Elite Pro Plug-in wideband harness pack (HT-010740) can be installed to the auxiliary connector by following the procedure below.

On the bottom side of the auxiliary connector there is a single white tab. Pushing this in will unlock all the pins and allow for insertion of the pre terminated wideband harness.

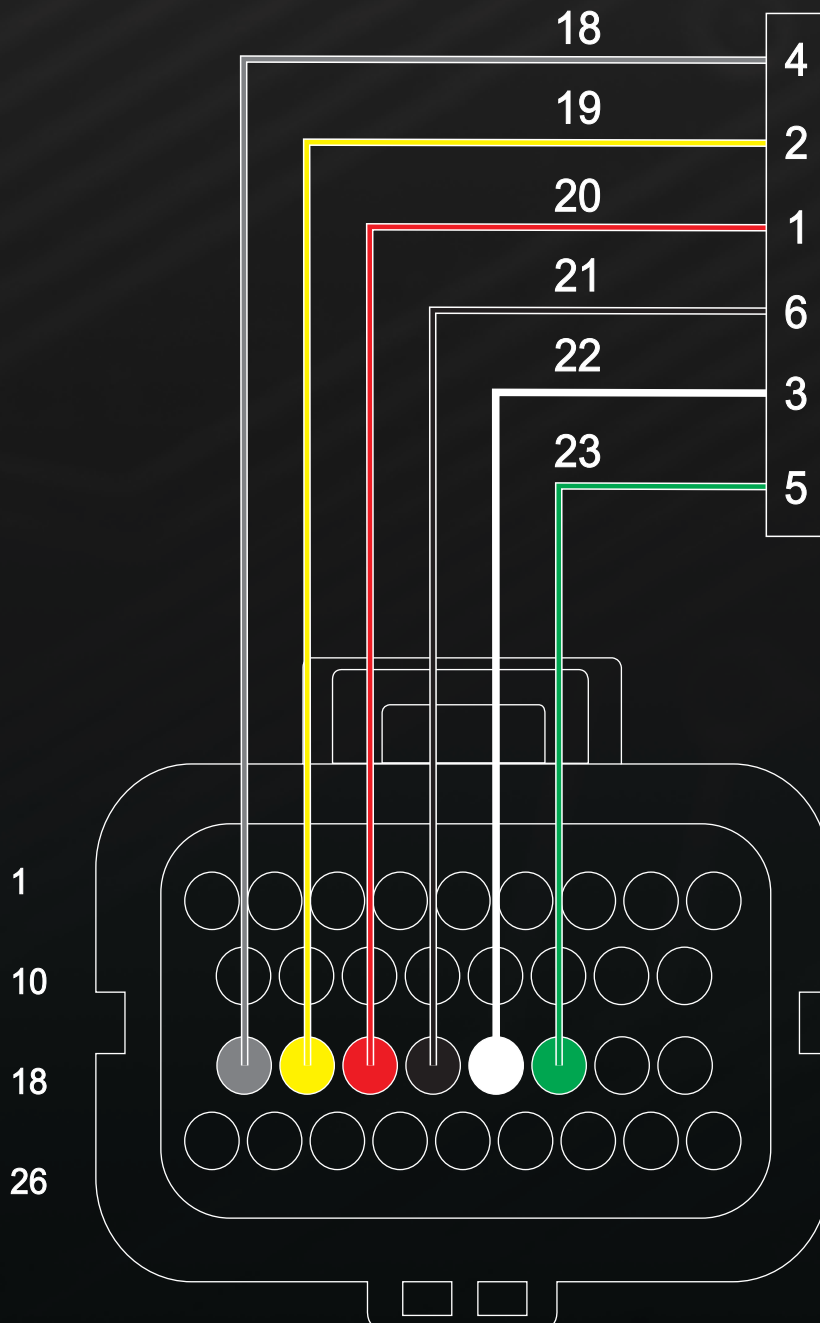
Insert the new terminated pins into their respective position as shown in the wiring diagram or image to the right. Ensure the pin is pushed all the way into the connector. Repeat with all connections.

Push the two white tabs on the top side of the connector to lock all the pins into place and prevent them from sliding out.

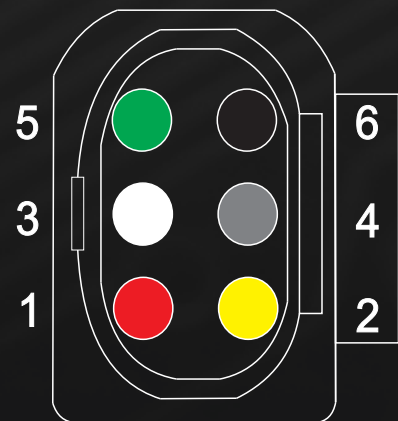
Locking Tab



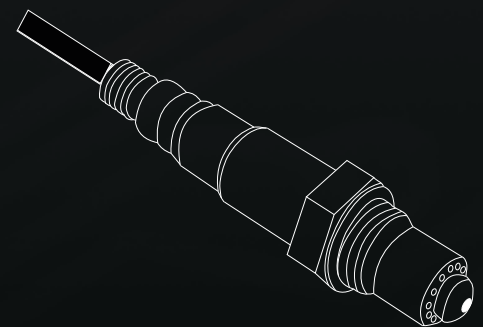
WIDEBAND O2 HARNESS PINOUT INFORMATION



LSU 4.9
Wideband Sensor



rear view
(wire side)



INJECTION / DPO

INJECTORS / DPO's 1 - 8

OVERVIEW

Injector outputs are capable of driving up to an additional 8 injectors for staged injection purposes. All injectors are wired to a common +12VDC supply from the injector relay located within the fuse box.

INJ #1 / DPO #1



INJ #2 / DPO #2



INJ #3 / DPO #3



INJ #4 / DPO #4



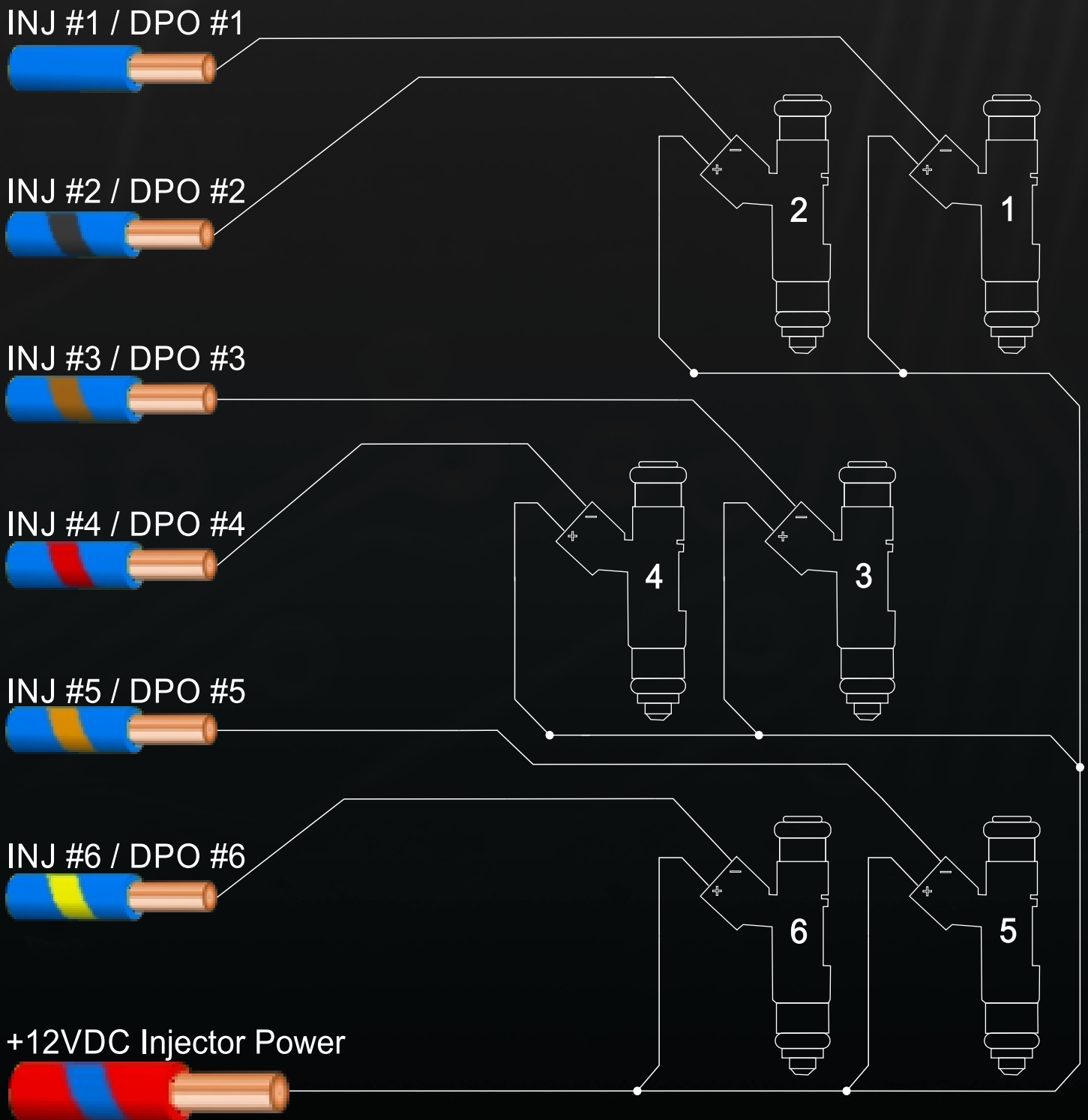
INJ #5 / DPO #5



INJ #6 / DPO #6



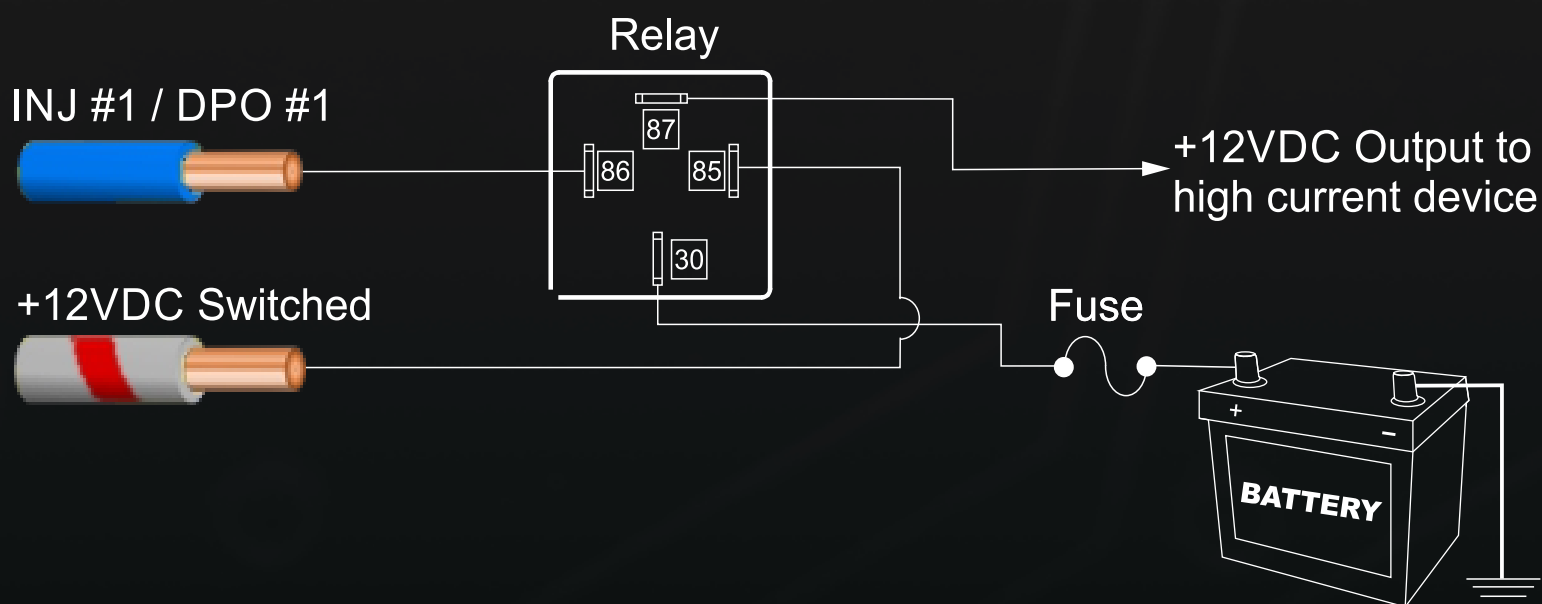
+12VDC Injector Power



When not used for staged injection, these outputs can be used as Digital Pulsed Outputs (DPO's) capable of switching 1A Max to ground. DPO's are capable of producing pulsed waveforms with varying duty and frequency.

DPO's can be used to control various devices such as thermofans, shift lights, bypass air control valves, boost control solenoids etc. When a DPO is activated by the ECU the output will switch to ground. Solenoid valves, shift lights, etc can be run directly from the output. However high current devices such as thermofans and additional fuel pumps must be activated through a relay, this way the DPO is only switching a relay and not a high current draw device.

OUTPUT: Ground @ 1A Max Current



NEED MORE HELP?

Technical Support Australia (Head Office)

Email: support@haltech.com.au

Phone: +61 2 9729 0999

Technical Support USA

Email: usasupport@haltech.com

Phone: +1 888 298 8116



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