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# CAN WIDEBAND CONTROLLER (WB1 & WB2) QUICK START GUIDE

## Suits Bosch LSU 4.9 Lambda Sensors

REV 1

## 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.



## CAN Wideband Controller (WB1 & WB2) Quick Start Guide

### Suits Bosch LSU 4.9 Lambda Sensors

Congratulations on your purchase of a Haltech CAN Wideband Controller. This product allows the user the ability to increase the functionality of their Haltech ECU by using the Haltech CAN system which is available to all Elite and Platinum Series ECU's.

The Haltech CAN Wideband Controller allows the user to accurately measure air/fuel ratios over a wide range from rich to lean via the Haltech CAN system for precise engine tuning.

This quick start guide will walk you through installation of a Haltech CAN Wideband Controller (WB1 or WB2) into a vehicle.

More information is available from the Haltech website.

### WARNING - HALTECH OFF-ROAD USAGE POLICY

In many states 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 or highways is prohibited by law unless a specific regulatory exemption exists. 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.

## PRODUCT OVERVIEW

### TECHNICAL SPECIFICATIONS

**Sensor Compatibility:** Bosch LSU 4.9

**Supply Voltage:** 6.5V to 16V

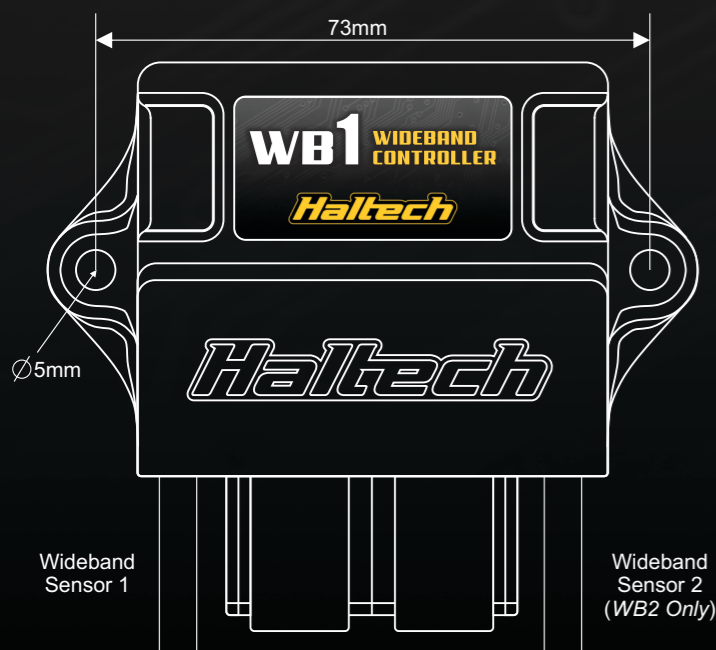
**Supply Current:** WB1: 650mA Typical / 3A Peak  
WB2: 1.3A Typical / 6A Peak

**Communications:** CAN (Haltech) at 1Mbit/sec

**Connectors:** 2 x Integrated DTM-4 Connectors

**Maximum Ambient Temperature:** 125°C

**Dimensions:** 86mm x 77mm x 28mm



## WB1 AND WB2 KIT INCLUSION

Included in Haltech Single Channel CAN Wideband Kit (HT-159976)

- 1 x Single Channel CAN Wideband Controller - WB1
- 1 x CAN Cable DTM-4 to DTM-4 (1200mm)
- 1 x DTM-4 Power Supply Cable
- 1 x Wideband Sensor – Bosch LSU 4.9
- 1 x Weldable fitting bung
- Quick Start Guide

Included in Haltech Dual Channel CAN Wideband Kit (HT-159986)

- 1 x Dual Channel CAN Wideband Controller - WB2
- 1 x CAN Cable DTM-4 to DTM-4 (1200mm)
- 1 x DTM-4 Power Supply Cable
- 2 x Wideband Sensor – Bosch LSU 4.9
- 2 x Weldable fitting bung
- Quick Start Guide

### Optional Accessories (Sold Separately)

- HT-010719 - Haltech LSU 4.9 Wideband Extension Harness (1200mm)

## INSTALLATION NOTES

### Mounting Location

The Haltech CAN Wideband Controller can be mounted to a flat surface in the engine bay using the two mounting holes provided in the enclosure. The controller should be located as far as possible from any extreme sources of heat (ie the exhaust system or turbocharger).

Although the Haltech CAN Wideband controller is a sealed unit, it is good practice to mount the controller with the connectors orientated in a way that avoids water from being able to be collected in the connectors.

### Connection to Sensors

Connect the Bosch 4.9 LSU sensors via the available pre terminated cables from the controller.

### CAN Connection

Connect the controller to the Haltech CAN Bus on your ECU by either of the 2 integrated DTM-4 connectors on the device using the included cables.

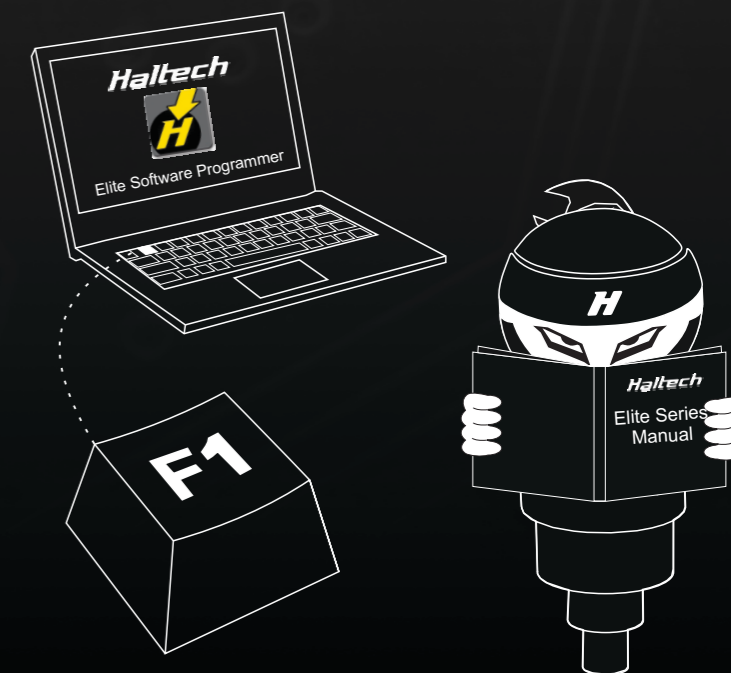
**Please Note:** Haltech Elite Wideband Controllers draw up to 3A per sensor upon startup with cold sensors. Please ensure wiring guidelines are followed as damage to your ECU or wiring may result.

Please see wiring installation information on the reverse of this guide.

## INTEGRATED HELP MANUAL

A comprehensive instruction manual is available within the Elite Software Programmer which contains detailed information regarding installation and setup of your Elite Series ECU and auxiliary devices.

To access, start the Haltech Elite Software Programmer and press the "F1" key on your computer.





# INSTALLATION

## WIRING INFORMATION ELITE SERIES DUAL CONNECTOR ECU'S

Connect the Haltech CAN Wideband Controller directly to a Haltech Elite Series ECU using the included DTM-4 Power supply cable and CAN cable DTM-4 to DTM-4 in series. Any CAN Port connected to Haltech CAN Bus can be used.

Connect the DTM-4 Power supply cable RED power wire to a 12 Volt switched "Fused Key On" power source. For ease of installation this is available from the Elite ECU harness at Pin A26 (Red/Blue).

Connect the DTM-4 Power supply cable Black ground wire to a good ground location. For ease of installation this is available from the Elite ECU harness on Pin A10 (Black).

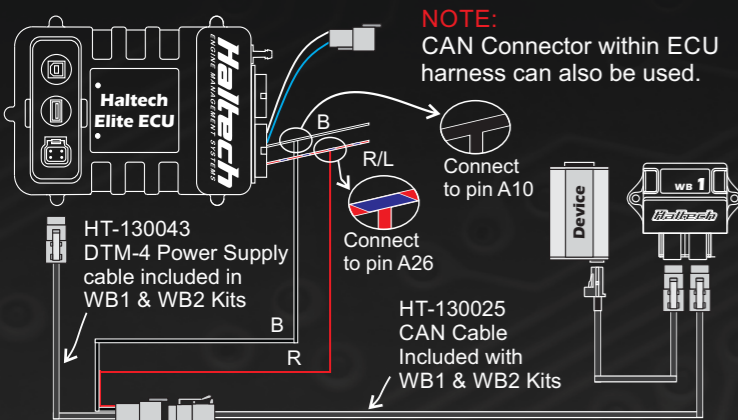


Figure 1 - Haltech WB1 connected to Elite series dual connector ECU

## WIRING INFORMATION PLATINUM PRO PLUG-IN SERIES ECU'S

Connect the Haltech CAN Wideband Controller directly to a Haltech Platinum Series ECU using the included DTM-4 Power supply cable and CAN cable DTM-4 to DTM-4 in series with the DTM-4 to 8 pin Tyco CAN cable provided with the ECU as shown below.

Connect the DTM-4 Power supply cable RED power wire to a 12 Volt switched "Fused Key On" power source.

Connect the DTM-4 Power supply cable Black ground wire to a good ground location.

For ease of installation power and ground will be available from the vehicle harness please refer to your specific ECU's Quick start guide for reference and locations.

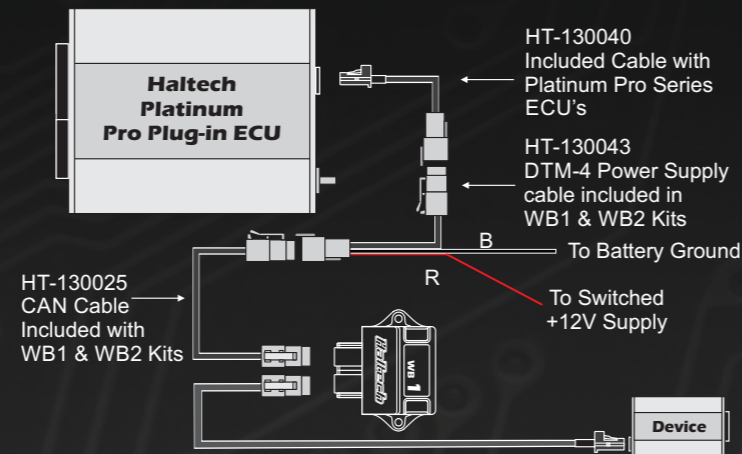


Figure 2 - Haltech WB1 connected to a Haltech Platinum Pro Plug-in ECU

## MULTIPLE DEVICES

The Haltech CAN Wideband Controller WB1 and WB2 can be used in a "daisy chain" to connect multiple widebands or other compatible Haltech CAN Devices such as a TCA, I/O Expander, GaugeArt CAN Gauge or Dash, as shown below.

### WARNING

When multiple wideband controllers are connected on the CAN Bus the 12V Switched Power Supply must be supplied by a relay due to current required. Please refer to wiring diagram below.

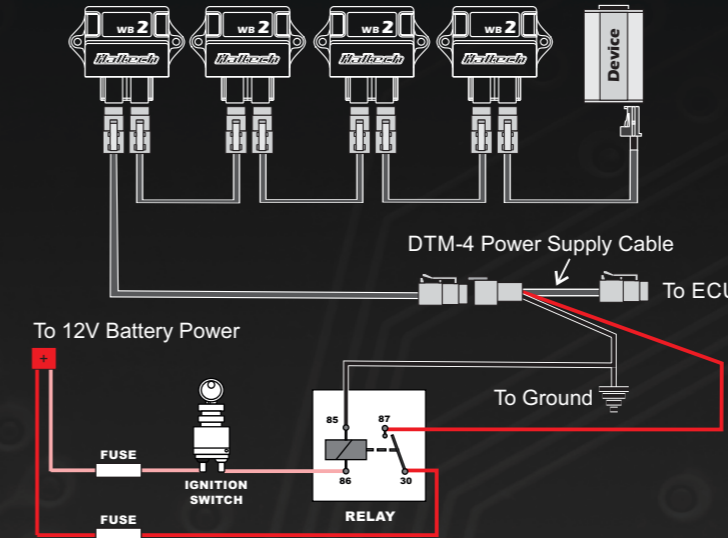


Figure 3 - Wiring diagram when using multiple widebands

## SENSOR INSTALLATION

### LOCATION

The best location for the sensor is approximately 1 metre (3ft) from the closest exhaust valve (measured along the central axis of the exhaust pipe) or 1 metre (3ft) from the turbo outlet (for turbo charged vehicles).

### MOUNTING

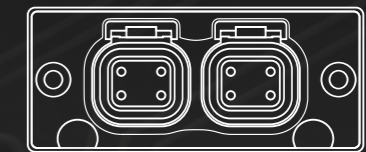
The sensor requires the included mild steel bung to be welded into the vehicles exhaust system. Weld the bung into the chosen position and install the sensor. It is recommended that the sensor be orientated in such a way that minimizes any condensation entering the sensor during warm up and operation.

### WIRING

Connect the wideband sensor to the pre-terminated 6 position connector on the Wideband Controller. Ensure all wiring is away from extreme heat sources and secured in place.

### NOTE

On a WB2 Controller the sensors are allocated as shown below.



## WIRING INFORMATION ELITE SERIES SINGLE CONNECTOR ECU'S

Connect the Haltech CAN Wideband Controller directly to a Haltech Elite Series single connector ECU using the CAN connector within the ECU harness, the included DTM-4 Power Supply Cable and CAN cable DTM-4 to DTM-4 as shown below.

Connect the DTM-4 Power supply cable RED power wire to a 12 Volt switched "Fused Key On" power source. For ease of installation this is available from the Elite ECU harness at Pin A26 (Red/Blue).

Connect the DTM-4 Power supply cable Black ground wire to a good ground location. For ease of installation this is available from the Elite ECU harness on Pin A10 (Black).

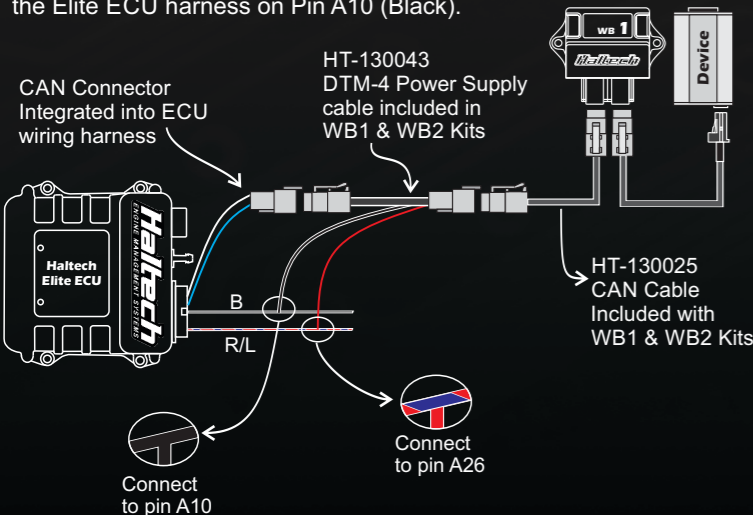


Figure 4 - Haltech WB1 connected to a Elite Series single connector ECU

## WIRING INFORMATION PLATINUM SPORT SERIES ECU'S

Connect the Haltech CAN Wideband Controller directly to a Haltech Platinum Sport Series ECU using the included DTM-4 Power Supply Cable and CAN cable DTM-4 to DTM-4 in series with the DTM-4 to 8 pin Tyco CAN cable as shown below.

Please order HT-130040 DTM-4 to 8 pin Tyco CAN Cable to complete your installation.

Connect the DTM-4 Power supply cable RED power wire to a 12 Volt switched "Fused Key On" power source.

For ease of installation this is available from the Platinum Sport ECU harness at Pin A26 (Red/Blue).

Connect the DTM-4 Power supply cable Black ground wire to a good ground location. For ease of installation this is available from the Platinum Sport ECU harness on Pin A10 (Black).

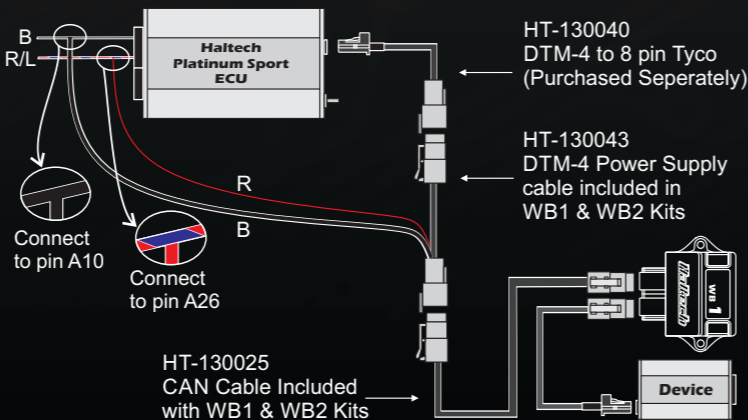


Figure 5 - Haltech WB1 connected to a Platinum Sport Series ECU

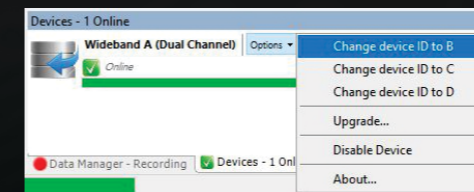
## ENABLING MULTIPLE WIDEBANDS

If two or more Haltech WB2 devices are connected to an ECU, each device must be allocated a unique device ID to function correctly. Haltech CAN wideband controllers are shipped from factory as device ID "A".

Up to 4 individual Haltech WB2 devices may be supported, depending on your ECU.

Updating of the device ID can be done through the Devices tab in ESP.

- Connect the Wideband to be updated and enable the device as previously noted.
- Select the "Options" tab and a menu will appear.
- Select "Change device ID to B".
- Connect the next device and repeat the process until each device is allocated a unique ID.



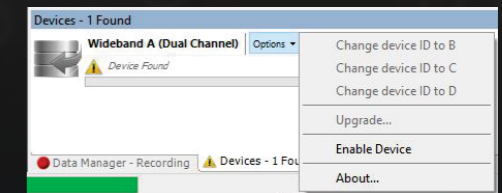
Once each device has a unique ID, the ECU must be reset. The sensors may now be enabled and allocated as wideband O2 sensor 1, 2, 3, 4 etc in the Functions tab.

**NOTE:** Devices which share the same ID will show an error if both devices are connected at the same time. One of the devices in error will need to be disconnected from the ECU before re-programming can occur.

## SOFTWARE SETUP

With the Haltech CAN Wideband Controller installed, it is now time to set it up in the software. When powered up and connected to ESP, your Haltech ECU will automatically recognize the new device which will be shown in the Devices tab.

To enable the device, click on the "Options" tab and select "Enable Device". Alternatively, the device may be enabled by accessing the "Devices" page within the Main Setup menu.



The ECU must now be reset. Once the ECU is reset, the device tab should change from "Device Found" to "Online". Once the device is online, the sensors may be enabled and allocated as Wideband O2 Sensor 1 or 2 in the Functions tab.

