



CAN WIDEBAND CONTROLLER
WBC 1 & WBC 2
BOX A, B, C, D
(HT-059970 & HT-059980)
QUICK START GUIDE



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

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!

HALTECH 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, valid in the original country of purchase only. Proof of purchase, in the form of a bill of sale or receipted invoice, which indicates that the product is within the warranty period, must be presented to obtain warranty service. Haltech suggests that the purchaser retain the dealer's dated bill of sale/receipt as evidence of the date of retail purchase. 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.

PRODUCT RETURNS

Please include a copy of the original purchase invoice 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.

Returning a sensor or accessory product within 30 days of purchase: Product may be returned for credit or full refund. (Any sealed packaging must not have been opened or tampered with)

Returning a sensor or accessory product after 30 days of purchase: Product may be returned for credit only (no refunds given) and is subject to a 10% Restocking fee. (Any sealed packaging must not have been opened or tampered with)

Haltech CAN Wideband Controllers (WBC 1 & WBC 2) Quick Start Guide

Congratulations on purchasing a Haltech CAN Wideband Controller.

This *Plug and Play* product allows the user the ability to increase the functionality of their Haltech ECU by using the Haltech CAN system which is fitted to all Platinum and Elite 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 the Haltech CAN Wideband Controller (WBC1 or WBC2) into a vehicle.

Included in Haltech Single Channel CAN Wideband Kit (HT-059976)

- Haltech Single Channel CAN Wideband Controller - WBC1
- Single Channel wiring harness
- Haltech CAN Cable DTM4 to 8-pin Tyco (300mm) (HT-130032)
- 1 x Wideband Sensor – Bosch LSU 4.2
- 1 x Weldable fitting bung
- Quick Start Guide

Included in Haltech Dual Channel CAN Wideband Kit (HT-059986)

- Haltech Dual Channel CAN Wideband Controller - WBC2
- Dual Channel wiring harness
- Haltech CAN Cable DTM4 to 8-pin Tyco (300mm) (HT-130032)
- 2 x Wideband Sensor – Bosch LSU 4.2
- 2 x Weldable fitting bungs
- Quick Start Guide

Optional Accessories (Sold Separately)

- Haltech CAN Cable DTM4 to 8-pin Black Tyco in various sizes 150mm up to 3600mm
(Please contact Haltech for sizes and prices)

Installation

Installing the Haltech CAN Wideband Controller into a vehicle is simple.

Method 1: Direct Connection to Haltech Platinum and Elite Series ECU

Connect the Haltech CAN Wideband Controller directly to a Haltech Platinum or Elite Series ECU via the CAN direct connection cable.

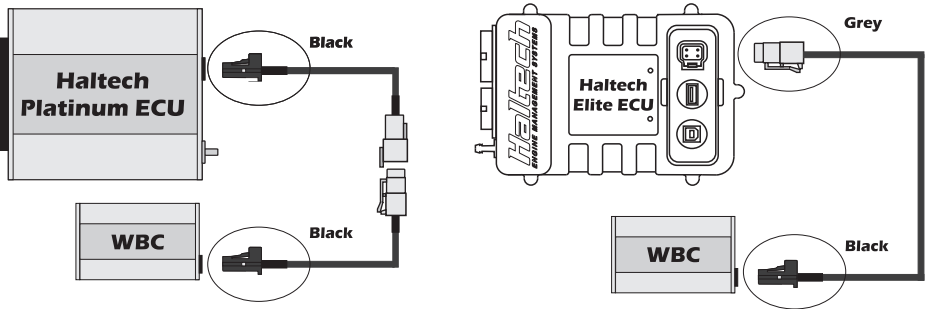


Figure 1 – Haltech Wideband Controller connected directly to a Haltech ECU

Method 2 : Connection Via Haltech DTM4 CAN Hub (HT-159000)

Connect the Haltech CAN Wideband Controller directly to the CAN Hub attached to a Haltech Platinum or Elite Series ECU (a Haltech CAN Hub connection cable may need to be purchased depending on your setup. Please refer to the Haltech CAN Hub quick start guide for details on connecting multiple devices to your Platinum or Elite Series ECU.)

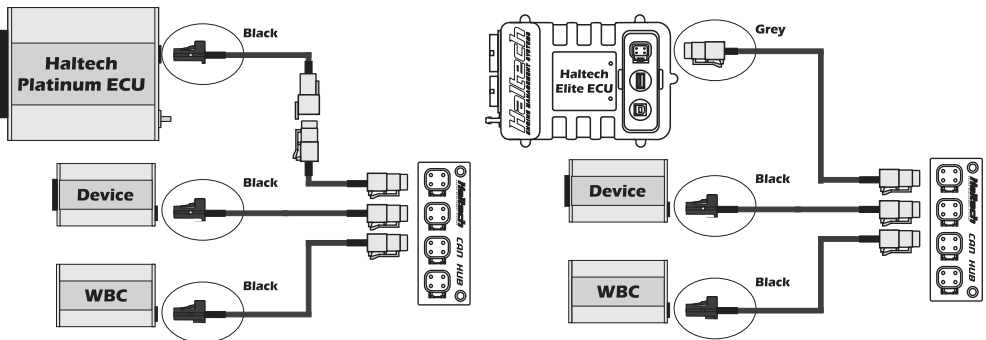


Figure 2 – Haltech CAN Wideband Controller connected via the Haltech DTM4 Can Hub

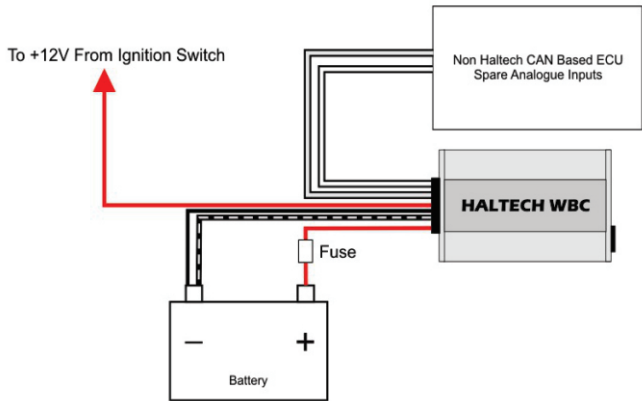
Method 3: Connection Via Analogue output to Non Haltech CAN Supported ECU

The Haltech CAN Wideband Controller is able to be used with ECU's that do not support the Haltech CAN System.

To enable the Haltech CAN Wideband Controller to function as an analogue device please connect the harness as described below:

- Connect the Red wire labelled "+13.8V Battery" to a + Battery Fused source (7.5A fuse minimum) or directly to the Battery + terminal
- Connect the Black wire labelled "Ground" to Battery -.
- Connect the Red wire labelled "Gauge Power" to a +12V Switched Ignition
- Connect the Black/White wire labelled "Signal Ground" to Battery -
- Connect the White wire labelled "CH 1 Output" to any available analogue input on your NON Haltech CAN supported ECU
- Connect the Grey wire labelled "CH 2 Output" (only available to WBC2) to any available analogue input on your non Haltech CAN supported ECU
- Calibrate the AVI input in the ECU software as:
 - 0V = AFR 10
 - 5V = AFR 20

Your Haltech CAN Wideband Controller can now be used with earlier Haltech NON-CAN based ECU's.



Pin	Wire Colour	Labelled	Description/Connection
1	Red	+13.8V Battery	To Battery +
8	White	CH 1 Output	Ch 1 Analogue Output Signal to ECU
11	Red	Gauge Power	To +12V Switched Ignition Input
12	Black	Ground	To Battery -
20	Grey	CH 2 Output	* Ch 2 Analogue Output Signal to ECU
23	Black/White	Signal Ground	To Battery -
<i>*Available in Dual Channel WBC Harnesses Only</i>			

Figure 3 – Haltech CAN Wideband Controller Connected via Analogue Outputs

Harness Installation

Ensure the Haltech CAN Wideband Controller is NOT connected to the wiring harness until installation of the harness has been completed.

The wires labeled “Main Power Input” supply power to the device.
Connect the Red wire to Battery (+) terminal via an inline fuse (7.5A Minimum)
Connect the Black wire to Battery (-) terminal.



Figure 4 – Main Power Wiring

Sensor Installation

Location: The best location for the sensor is approx 1 meter from the closest exhaust valve (measured along the central axis of the exhaust pipe) or 1 meter from the turbo outlet (for turbo charged vehicles)

Mounting: The sensor requires the included M18 x 1.5 mild steel bung to be welded into the vehicles exhaust system.

Weld the bung into the chosen position, install the sensor.

It is recommended that the sensor be orientated in such a way that minimises any condensation entering the sensor during warm up and operation.

Wiring: Install the harness through the firewall and into the engine bay.
Connect the wideband sensor via the 6 position connector.
Secure the wiring.

Notes: If removing the pins from the terminated harness O2 Sensor connector to run through the firewall please ensure the WBC and Main Power are disconnected.
Ensure all wiring is secured and away from any extreme sources of heat (ie exhaust manifold).
Use grommets when passing wires through the firewall of the vehicle to avoid damage to wiring.

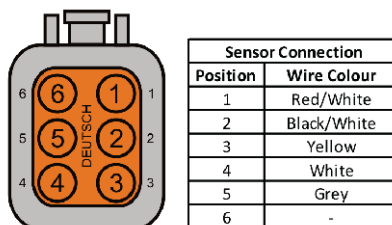


Figure 5 – Harness side Wideband sensor termination

Free Air Calibration

After installation, a free air calibration is required, preferably with the O2 sensor removed from the exhaust system and placed in non hydrocarbon contaminated open air location.

Calibration Procedure:

Turn the free air calibration trimpots on the Haltech CAN Wideband Controller full counterclockwise.

Turn ignition on and wait for 60 seconds so the system can fully stabilize.

Slowly turn each free air calibration trimpot clockwise until the corresponding LED starts flashing at a rapid rate.

Set each trimpot at the point where its LED just starts to flash.

If you cannot get an LED to flash when its trimpot is turned full clockwise, you either have a damaged sensor or very high hydrocarbon levels in your environment.

A fault indication will cause the status LED to blink at a slow rate.

Fault conditions include less than 11 volts or greater than 16.5 volts of battery voltage, sensor open circuit, and sensor short circuit conditions.

Your Haltech CAN Wideband Controller is now ready to use.

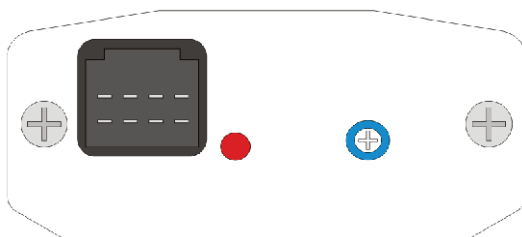


Figure 6 - Haltech WBC1 LED and calibration trim pot location

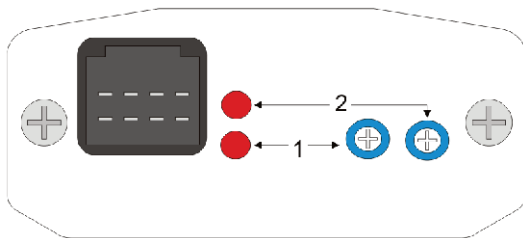


Figure 7 - Haltech WBC 2 LED and calibration trim pot locations

Optional Digital Display Gauge Installation

Installation of the optional Haltech digital display gauge will allow the user to see the Air / Fuel Ratio of the engine without the need for a laptop.

Installation is simple as all the necessary wires are bundled together in the included wiring harness labeled as "Gauge"

If the gauge wiring is not used please ensure all wires are isolated and insulated in the harness before powering up the device.

Please refer to the diagrams below for correct termination.

Connection of the green wire to the +12V output from the headlight switch will dim the gauge display brightness to 50% when the headlights are turned on.

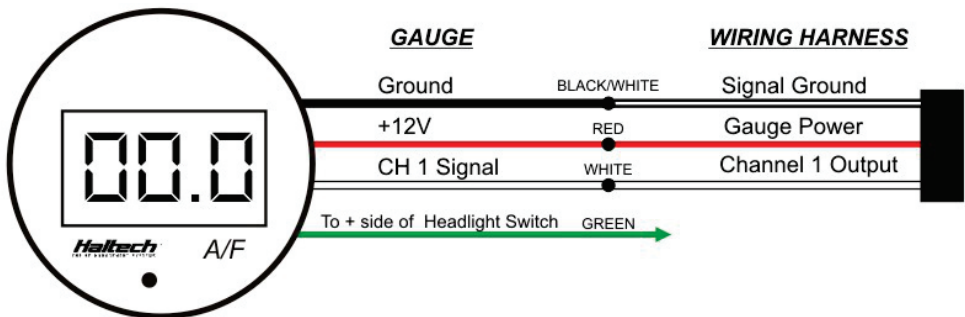


Figure 8- Haltech Single Channel Digital Display Gauge (HT-012001)

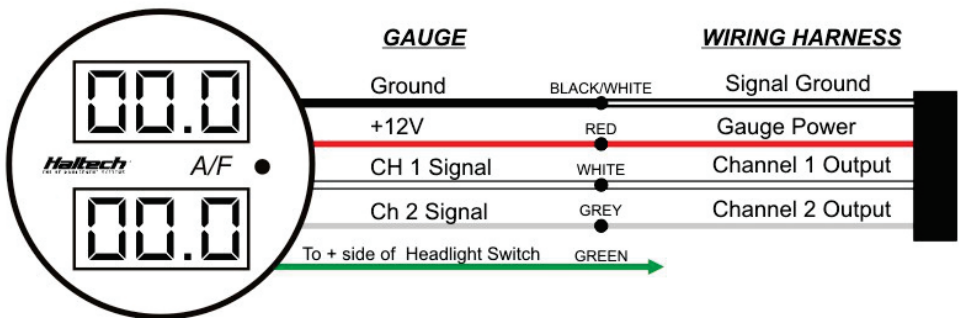


Figure 9 - Haltech Dual Channel Digital Display Gauge (HT-012007)

Software Setup

With your new Haltech CAN Wideband Controller installed it's now time to setup the software.

When powered up and connected to ECU manager or the Elite Software Programmer, your Haltech ECU will automatically recognize the new device which will be shown in the devices tab (Figure 10).

To enable the device right click on the “Options” tab and select “Enable Device”, alternatively you can enable the device by accessing the device page within the Main setup menu.

When the device is enabled you will have access to the “Wideband Devices” tab within the “Inputs setup page”, this is where you can allocate the wideband sensor input to be used as wideband 1 or wideband 2.

When you have completed your setup reset the ECU, once reset the device tab should change from “Device Found” to “Online”. The device is now ready to use.



Figure 10 – Haltech ECU Manager CAN Wideband device tab status indicators

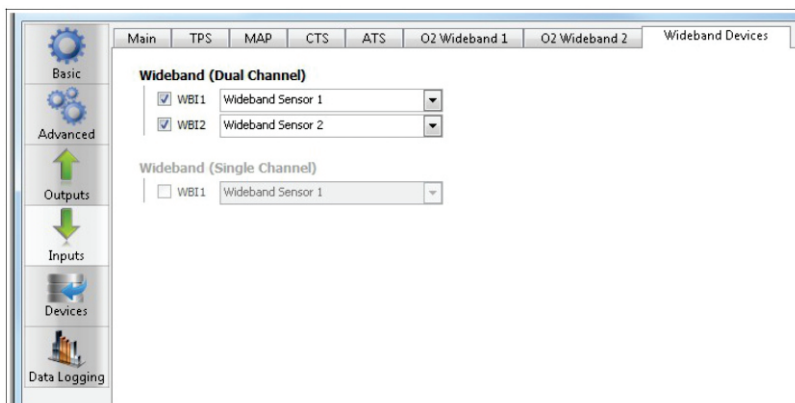
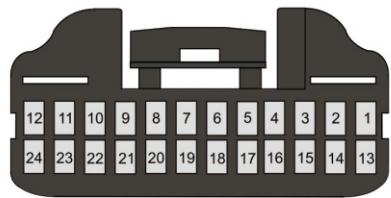


Figure 11 – Haltech ECU Manager CAN Wideband setup page

Harness Pinout



CONNECTOR (24 PIN)
REAR VIEW (WIRE SIDE)

Pin #	Wire Colour	Connection
1	Red	+13.8V Battery
2	Grey	WB1 Heater +
3	White	WB1 Heater -
4	Black/White	WB1 Cell
5	Yellow	WB1 Com
6	Red/White	WB1 Pump
7	-	-
8	White	CH 1 Analogue Signal Output
9	-	-
10	-	-
11	Red	^{*2} +13.8V Gauge Power
12	Black	Ground
13	Red	+13.8V Battery
14	* Grey	^{*1} WB2 Heater +
15	* White	^{*1} WB2 Heater -
16	* Black/White	^{*1} WB2 Cell
17	* Yellow	^{*1} WB2 Com
18	* Red/White	^{*1} WB2 Pump
19	-	-
20	* Grey	^{*1} CH 2 Analogue Signal Output
21	-	-
22	-	-
23	Black/White	^{*3} Signal Ground
24	Black	Ground
^{*1} Available to Dual Channel Wideband Controller only (WBC2)		
^{*2} 12V Ignition Input required if used with Non Haltech CAN Based ECU		
^{*3} Signal Ground input required if used with Non Haltech CAN Based ECU		

Figure 12 – Haltech CAN Wideband Controller harness connector and pinout

Wiring Diagrams

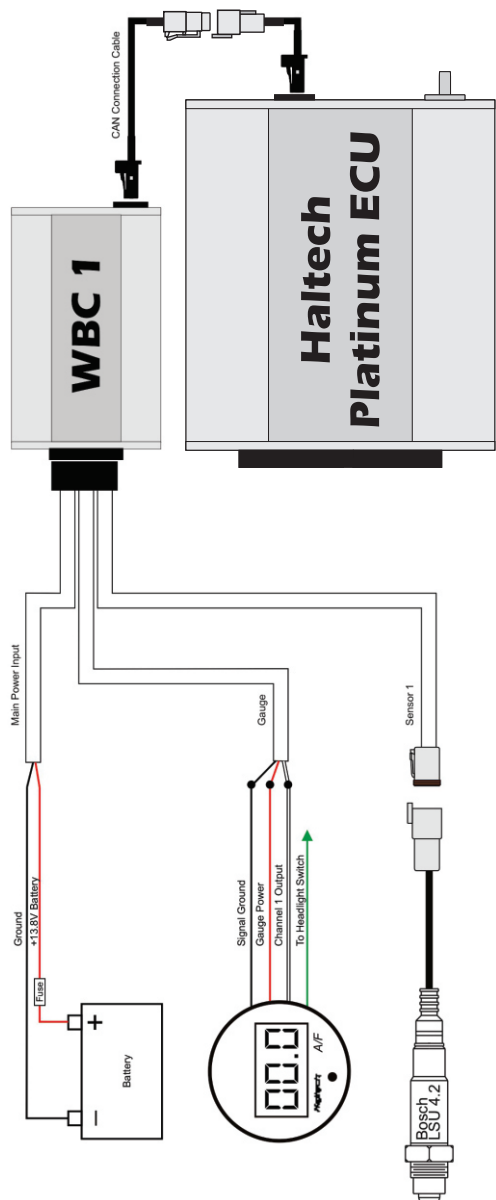


Figure 13 – Haltech WBC 1 Installation Diagram (CAN)

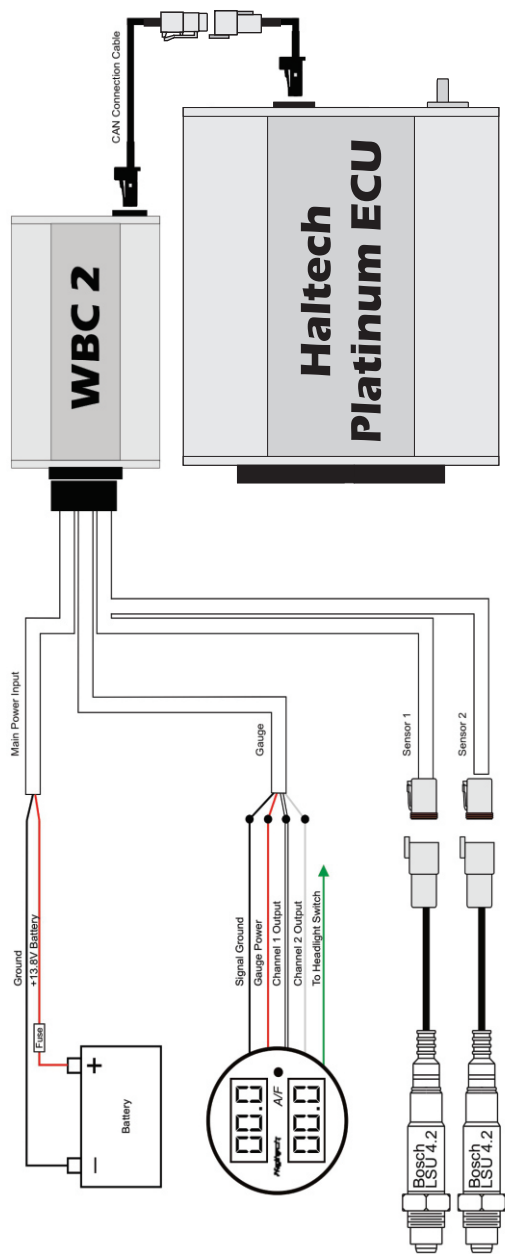
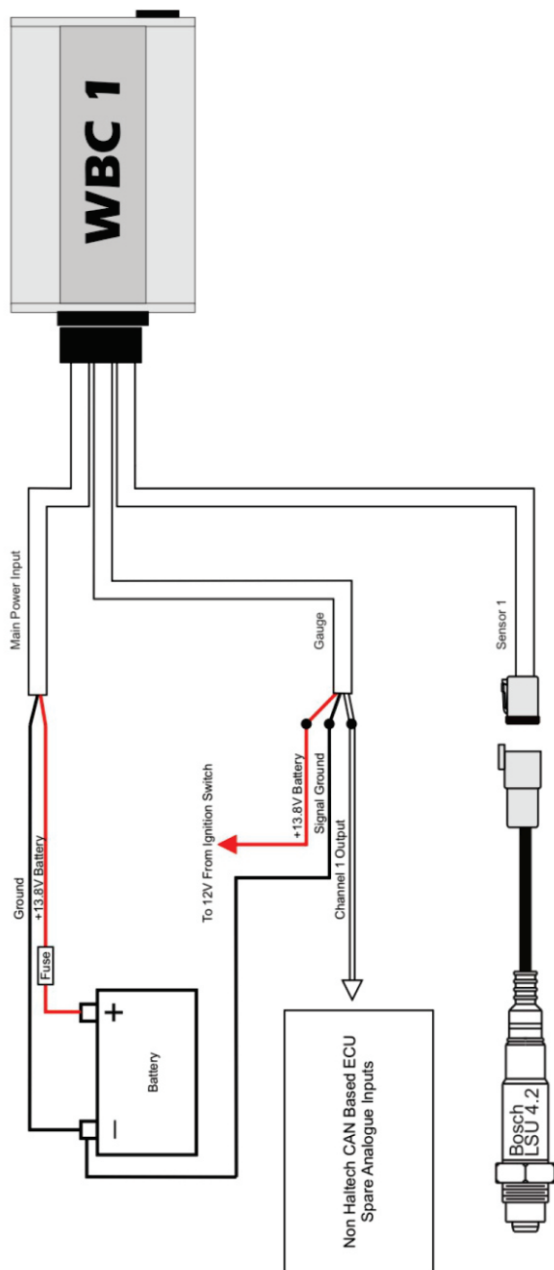


Figure 14 – Haltech WBC 2 Installation Diagram (CAN)



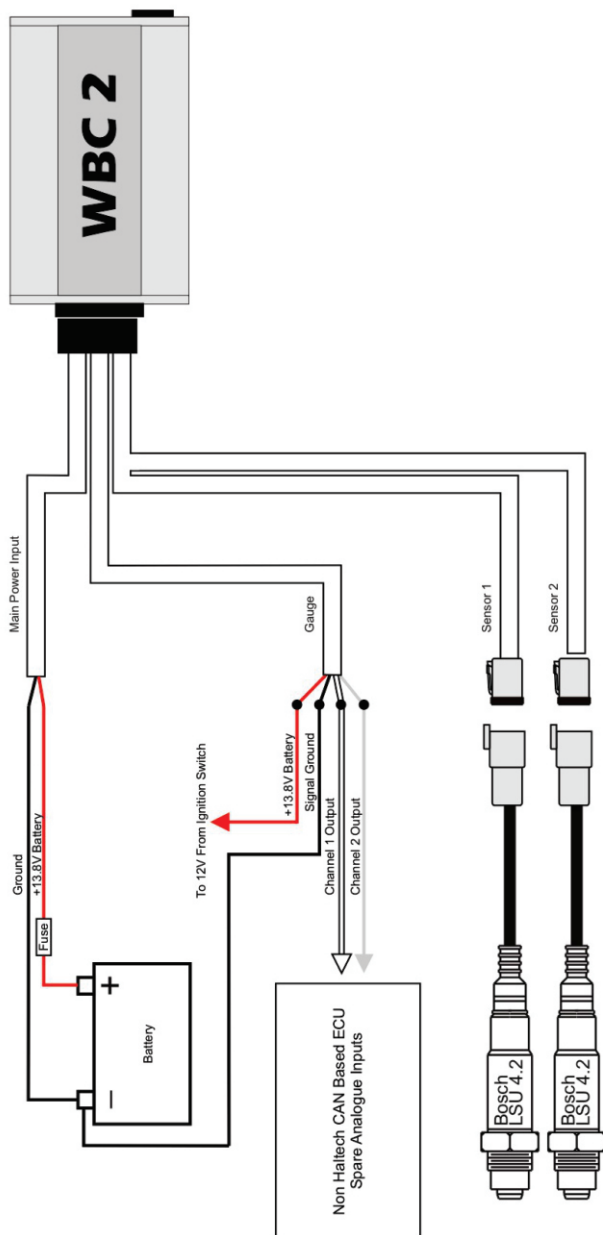
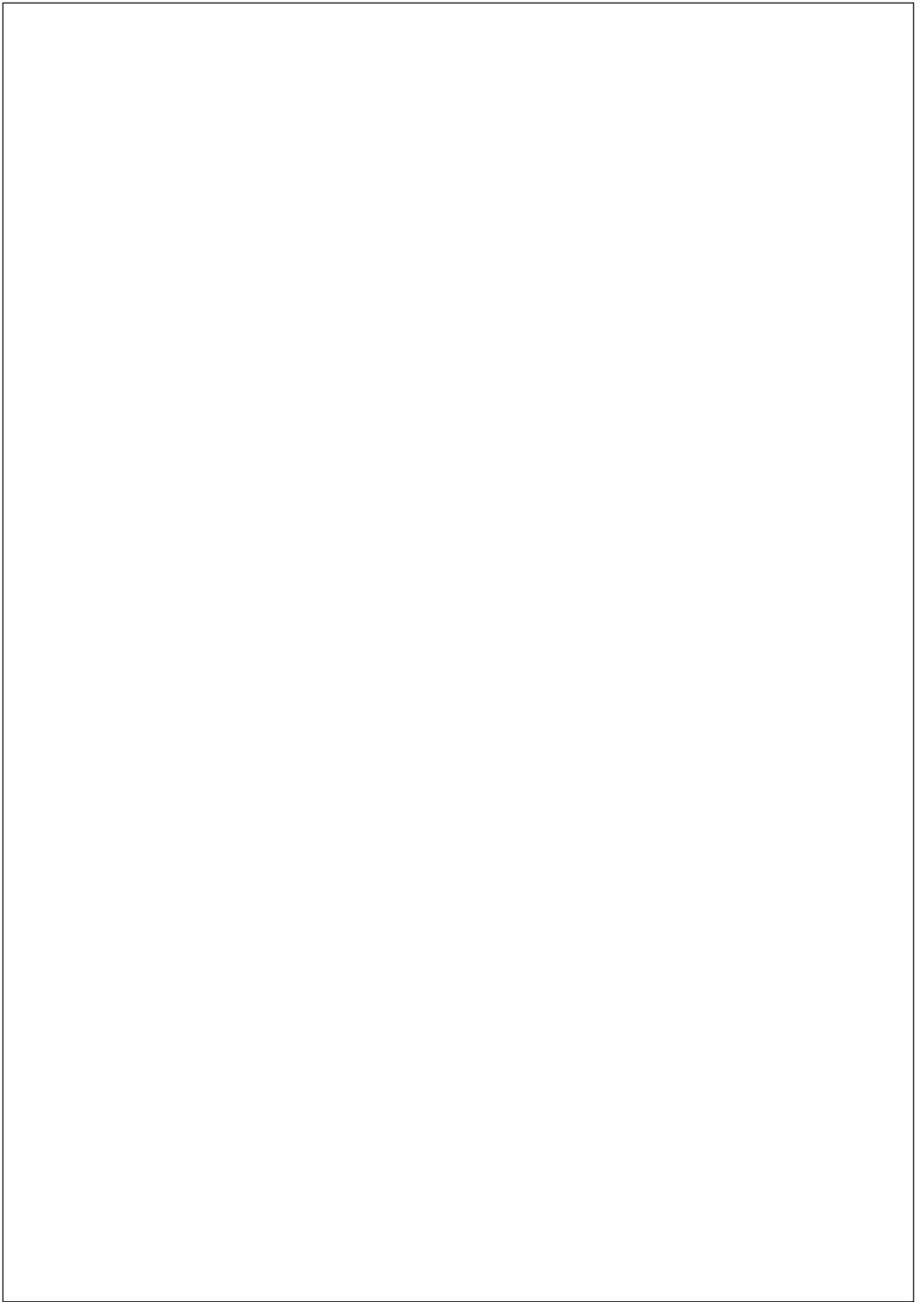


Figure 16 – Haltech WBC 2 Installation Diagram (Analogue Only)





V6.2

Need more help?



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