

DigiDash² - LITE Display Quick Start Guide

Please read thoroughly before attempting installation of the DigiDash²

This quick start guide is intended for fast installation and set-up of the DD²-LITE with basic parameters to get you up and running in a short period. For more detailed instructions on installation, set-up and operation, please refer to the DD²-LITE manual supplied on the accompanying CD-ROM.

Installation

1. Copy DigiTools (on CD-ROM) to your PC's Hard Drive

- Insert the DigiTools CD into your CD-ROM Drive.
- Using the mouse, Left double-click on "My Computer" Icon
- Right-Click on CD-ROM Drive Icon and select "Explore"
- Select all files shown on CD-ROM and by Right-Clicking on these files, drag and drop them into a suitable folder on your Hard Drive.

2. Information Required for Set-up

You will need to obtain some information about your vehicle before starting installation. This is necessary for the unit to show Speed, RPM and Engaged Gear. These are:-

- Transmission type (e.g. Rear wheel drive with speed sensor mounted on prop-shaft).
- Tyre Size (e.g. 205/50/15")
- Differential Ratio (e.g. 3.62:1)
- Gear Ratios (e.g. 1st Gear – 3.65:1, 2nd Gear 1.97:1....)
- 'Speedo Cal' – (Obtained from using DigiDash² Tools 'Calculator' software on the CD)
- 'Gear Cal' – (Obtained from using DigiDash² Tools 'Calculator' software on the CD)

Please refer to the Sheet entitled 'DigiDash² – LITE Wiring Schematic'

1. Connect DigiDash² to 12 volt supply

The cable supplied with a RED 9-pin connector should be connected to the Display module. Connectors are gender specific to prevent incorrect connection.

Of the wires coming out of this green connector, you will find a RED wire with black fuse holder, and a single BLACK wire. Connect the RED wire to a switched +12v (positive) supply (usually this is a 12 volt feed from your ignition switch), and connect the black wire to the vehicle Ground (negative (-ve)). It is more preferable to connect the RED wire to a position on the Ignition switch that does not require the engine to be running.

2. Install Sensors supplied and connect according to Wiring Schematic

After installing the sensors supplied with the unit, connect wires as shown on the wiring schematic, either directly using the cable supplied or to an existing wiring harness.

3. Turn on your Vehicle Ignition Switch

Switch on Ignition in order to supply 12 volts to the DigiDash² and the Display will power up and go through its initial start-up sequence.

Initial Set-up Using DigiDash² – LITE Display

1. Enter Configuration Menu

In order to begin basic configuration of the DigiDash² - LITE, you will need to select the set-up menu.



To enter the set-up Menu, Hold Down Buttons A & B Together

To move to the next Menu screen, press Button 'A'. To Edit the Menu displayed, press Button 'B'. Once you have finished editing a particular Menu screen, press Button 'A' (shown on LCD as 'OK') to return the Main editing menu.

2. Editing Configuration

There are 30 menu displays for editing the set-up of the DigiDash². The majority of the Menu editing functions are self-explanatory. The key parameters that require initial editing are:-

<u>Menu Display</u>	<u>Edit Function</u>	<u>Default</u>
MPH or KMH	Select units of Speed and Odometer (Miles or Kilometres)	MPH
Shift RPM	Sets the maximum RPM limit (Point at which main RED shift LED is lit.)	6000rpm
Shift Delta	Sets the RPM increments of each shift LED (e.g. 200rpm)	200rpm
Pulses/Cycle	Sets the numbers of engine cylinders. Note that on certain types of ignition systems the output pulses of the system may not match the number of engine cylinders. This number can be changed from 1 to 8 to accommodate this.	2
Speedo Cal	Numeric factor dependent on speed sensor location, tyre size and differential ratio. Obtained from DigiTools Calculator software.	
Gear Cal	Numeric factor dependent on Gear and Speed ratios. Obtained from DigiTools Calculator software.	
Primary Ratio	On a vehicle using a car engine and gearbox, this ratio is usually 1:1. On vehicles using motorcycle engines and gearboxes, this ratio can be set using this menu function.	1:1
Num Gears	Sets the number of forward gears in the gearbox	6
Gear 1	Allows the user to enter the ratio of 1 st gear. Please note that when entering Gear ratios, the ratio displayed is in abbreviated format. (e.g. the ratio of 2.657:1 is shown as 2657)	
Gear 2-6	Allows the user to enter the gearbox ratio of 2 nd Gear. The next 4 menu screens are for entering the gearbox ratios for gears 3 to 6.	

Once editing is complete, press and hold Buttons A & B together and you will be asked whether you wish to exit set-up. Press Button A to select 'YES' and exit.

3. Speed Sensor Installation

There are 2 small, powerful magnets supplied with kit. You must use both magnets for the DD2 to read correctly. These magnets are mounted on a surface that rotates in relation to vehicle speed and supply electrical pulses as they pass in front of the speed sensor to the DigiDash².

The harness with the RED 9-pin connector incorporates the speed sensor. The sensor can be disconnected from this harness to aid ease of installation.

You must first locate a suitable position for mounting the speed sensor and magnets on your vehicle. The speed sensor and magnets are commonly mounted in one of three locations: -

- Prop-shaft (either at the differential end or gearbox end)
- Drive-shaft Coupling (with Sensor mounted on Gearbox)
- Front Hub (with sensor mounted on steering arm)

The recommended gap between the sensor and top surface of the magnets is **1mm** and therefore you must ensure that whatever location is used, any movement in the position of the magnets is replicated in the movement of the sensor to maintain a constant gap.

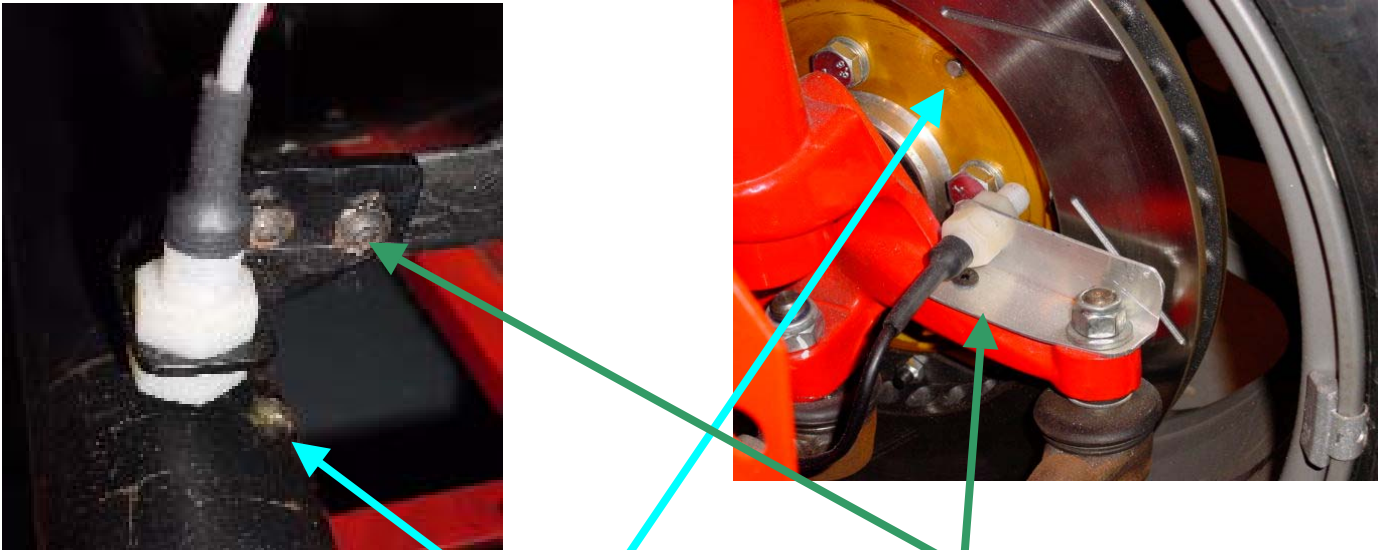
You will need to fabricate a strong bracket to hold the sensor in place, and bolt this bracket to a suitable mounting point.

Here are 2 examples:-

Prop-Shaft Mounting

Front-Hub Mounting

Important! – The speed sensor is polarity dependent. This means that the magnets must be mounted dimple-side DOWN.



Magnets glued in position. Liberal application of a strong adhesive such as 'Chemical Metal' or 'Araldite' will ensure that the magnets do not become dislodged during use.

Strong mounting brackets that hold the speed sensors in position. The brackets have been mounted in positions that move in unison with the magnets.

Important! - The recommended gap between the speed sensor head and top surface of the magnets is 1mm.

4. Connecting the Tachometer (RPM)

As well as the speed sensor cable, the RED 9-pin connector incorporates the yellow tachometer-input wire.

If the vehicle's ignition system uses an ignition coil, the yellow tachometer wire should be connected to the Negative (-ve) side of the ignition coil.

If the engine has an engine management system (or ECU), with a dedicated Tachometer output, the yellow tachometer input should be connected to this output from the ECU.

5. Test Mode

The Configuration menu (See above) accessed by holding down buttons A&B together has a TEST MODE for verifying the presence of a signal input for Speed, RPM and Lap timer receiver. To test the speed sensor is reading the magnets, enter Test Mode and rotate the part on which the magnets are mounted. A '++' sign should appear under the heading 'SP' each time a magnet passes in front of the sensor head. To test the lap trigger receiver, any infra-red TV remote Control can be used – by pressing a button on the handset, a '++' sign should appear under the 'LT' (and 'SW') heading.

General Safety Instructions

- When connecting wires to your vehicle's wiring loom, always ensure the negative pole of the battery is disconnected prior to starting work to prevent short circuits.
- Connect cables in accordance with the electrical wiring schematic.
- When routing cables, use existing cable ducts or conduits where possible and fix in place using suitable cable tape.
- Avoid routing wires near existing cables that carry high current, in particular the ignition cables, fuel pump wires or heater fan cables.
- Do not route cables over mobile components.
- If wires are routed through drilled holes, protect them with rubber sleeves or similar.
- Insulate any exposed strands of cable so that no short-circuiting can occur.
- Always ensure that the vehicle cannot be accidentally started whilst working on the vehicle.
- Double-check all connections before re-connecting the battery.

Help & Advice

Should you require help and advice when installing and configuring the DigiDash² please contact ETB and we will do our best to help.

ETB Instruments Limited
Unit 15 Brookside, Sumpters Way
Temple Farm Industrial Estate
Southend-on-Sea
Essex
SS2 5RR
United Kingdom

Tel: + 44 (0) 1702 601055

Fax: + 44 (0) 1702 601056

Email: info@etbinstruments.com