Data Logger

Quick start / system check to ensure the DL1CLUBGTCUP is operating correctly

This test MUST be performed with the supplied SD-card inserted, power ON and in open air conditions (outside and away from buildings – not in the pits) with the GPS antenna correctly installed.

A, Power LED must be on solidly to indicate power to the unit

B, Logging LED must be off while vehicle is stationary, and on while car is driving faster than 50 km/h

C, GPS lock must be on no later than 2 minutes after powering up the unit in open air conditions (not in the pits).

D, Status LED on solidly when ready to begin logging, off at all other times. The SD card must be present, correctly formatted, and not full, to be ready for logging. Status light will be off during logging, and when not able to log.

Contents:

Introduction

The DL1CLUBGTCUP data logger/scrutineering system comprises of 3 main components, the data logger, the wiring loom, and the memory card. In some applications additional mounting hardware may be supplied.

System elements

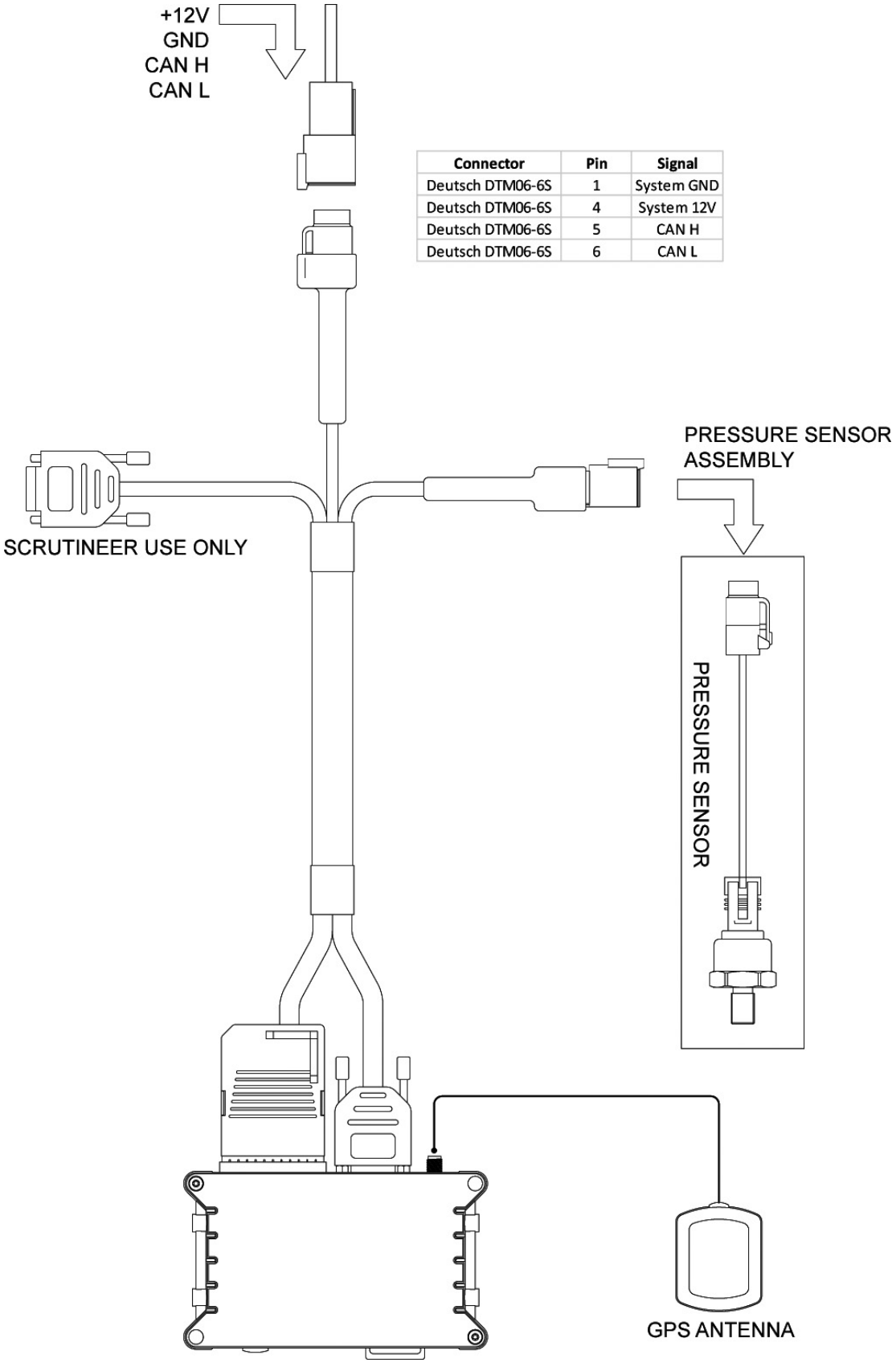
Hardware

- **DL1CLUBGTCUP data logger** – The heart of the system, takes in data from the required sensors (eg. GPS, accelerometers, ECU via CAN, analogue and frequency sensors) and saves it to a removable SD memory card.

- **SD memory card** – Recording to removable memory cards makes transfer of data, saved by the DL1CLUBGTCUP, to the scrutineers quick and easy.

- **Wiring harness** – The assembly of cables and connectors that is required to connect the data logger to the required sensors on the vehicle – configuration will vary depending on application.

System diagram



Connector	Pin	Signal
Deutsch DTM06-6S	1	System GND
Deutsch DTM06-6S	4	System 12V
Deutsch DTM06-6S	5	CAN H
Deutsch DTM06-6S	6	CAN L

Installation:

Sensor Pre-Installation Requirements

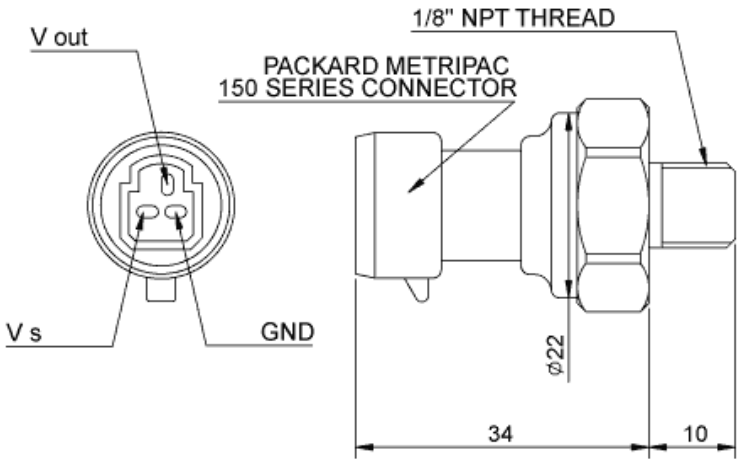
Turbo charged cars require 1 sensor to be fitted.

1) Manifold pressure post turbo

The teams must have 1 of the following thread sizes available

- 1/8 NPT
- M10 x 1

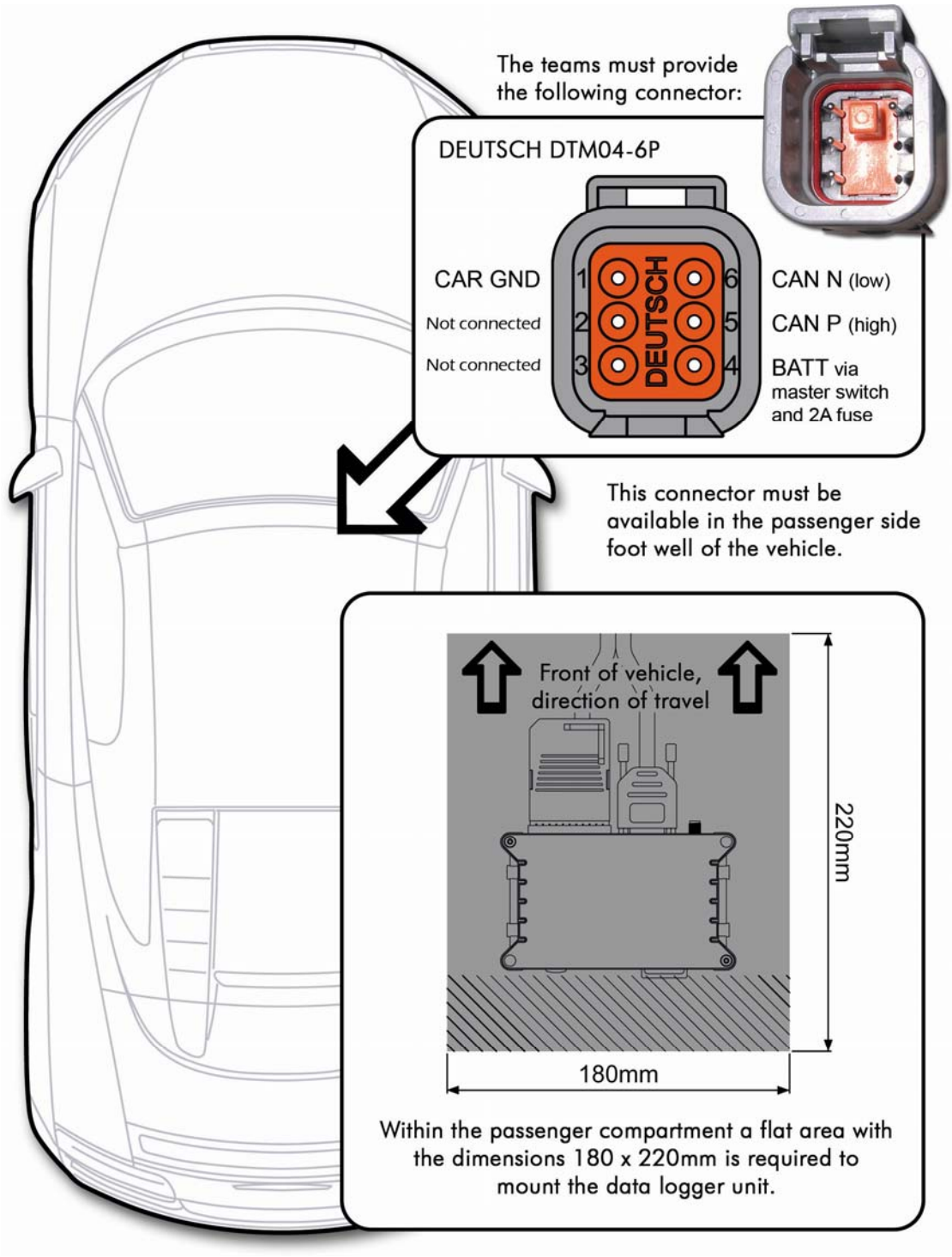
Sensor details:



M10x1 thread adaptor supplied

Mounting instructions

The mounting requirements allow space for connecting and disconnecting connectors, viewing LEDs and removing the SD card.



The maximum temperature for the logger is 50 degrees Celsius, this must not be exceeded. So the unit must be mounted away from sources of heat. An indicator on the unit will indicate the maximum temperature the unit has reached.

CAN Bus connection

All data on the CAN bus will be recorded using Race Technology CAN RAW option. The only required information is the CAN bus speed***.

Please ensure the minimum data available on the CAN bus contains:

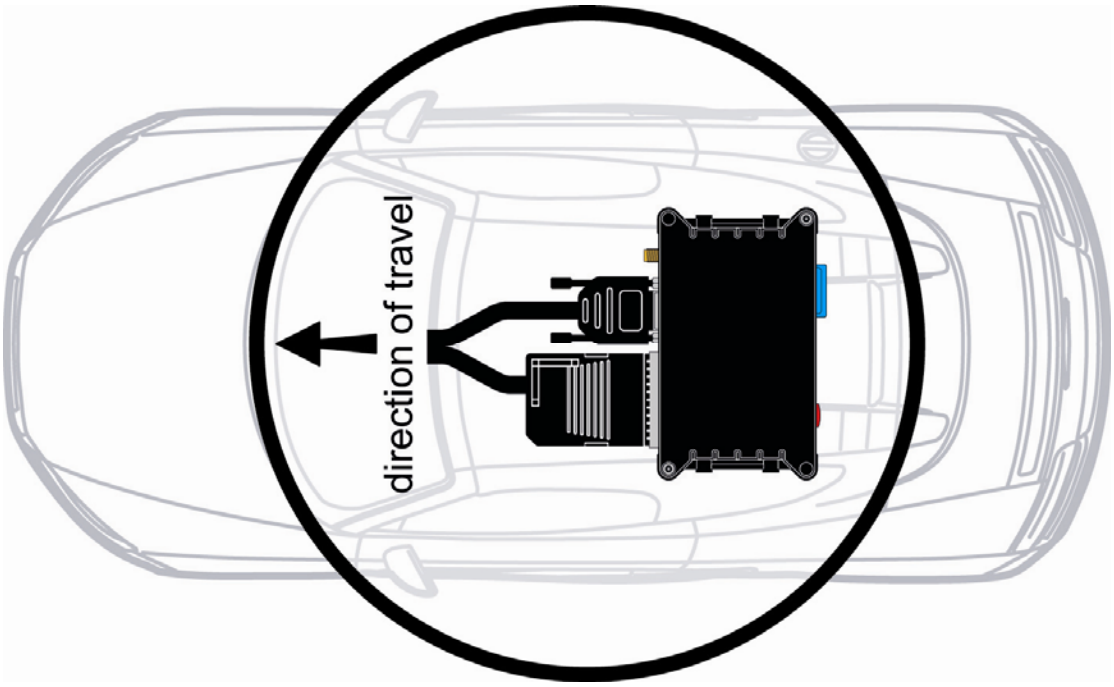
- **RPM**
- **Throttle pedal position**
- **Boost pressure (If turbo car)**

If the following data is available on the car it must also be transmitted to the DL1CLUBGTCUP:

- **Air temp**
- **Water temp**
- **Fuel temp**
- **Wheel speeds (4)**
- **Brake pressures (2)**
- **Ambient air pressure**
- **Gear position**
- **Steering angle**
- **Lambdas (2)**

*** Protocol information will be requested in cases when manufacture's CAN protocol has not been used

Please connect to the vehicle's main high speed CAN bus. In cases of a dedicated CAN bus for the DL1CLUBGTCUP ensure termination resistor is installed on car loom. If the specified data is available on the car it must be transmitted to the DL1CLUBGTCUP.



The DL1CLUBGTCUP should be mounted in the vehicle on a flat horizontal surface – a spirit level may be added to the system to assist when fitting. **The bubble must be within the inner circle when the car is parked with all of its wheels on a levelled surface** (not on the air jack).

The unit must be mounted with the connectors pointing towards the front of the vehicle – and the LED lights and SD card pointing towards the rear.

Correct Mounting of the GPS Antenna

"WARNING": To avoid any possible damage to the car paintwork, please take care when mounting magnetic GPS antennas. In particular make sure that there is no dust or grit under the antenna. In some cases it maybe required to add additional protection to the paintwork prior to mounting the antenna to avoid damage.

For correct, accurate operation of the GPS receiver it is absolutely essential that the antenna is mounted correctly.

- The antenna must be mounted on the roof of the vehicle.
- The antenna must be mounted on a horizontal orientation facing directly up. The underside of the antenna cannot receive GPS information, similarly don't mount the antenna on a vertical surface.
- The antenna must not be covered in tape, in particular dark coloured tapes. Many tapes absorb the weak GPS radio signal. In general, black tapes are the worst in this respect as they contain high amounts of carbon - however, to be safe, avoid using any tape at all.
- The antenna must be physically remote from sources of electrical noise. The GPS radio signal is very weak and can easily be blocked out by radio interference, so to get a good signal the antenna must be as far away from radio interference as possible. By far the strongest source of radio interference is a gasoline engine's ignition system, so keep the antenna away from all aspects of it including the engine management system, coil, leads, distributor etc.
- Avoid trapping, pinching or kinking the antenna cable. The lead from the GPS antenna to the receiver is a special very high frequency cable and it is not normally practical to repair it - so if you do trap, pinch or cut it then the antenna will have to be replaced and this isn't covered by the warranty. Do not try to feed the antenna cable through a closure gap that is too small or compress it with a door seal or window seal.