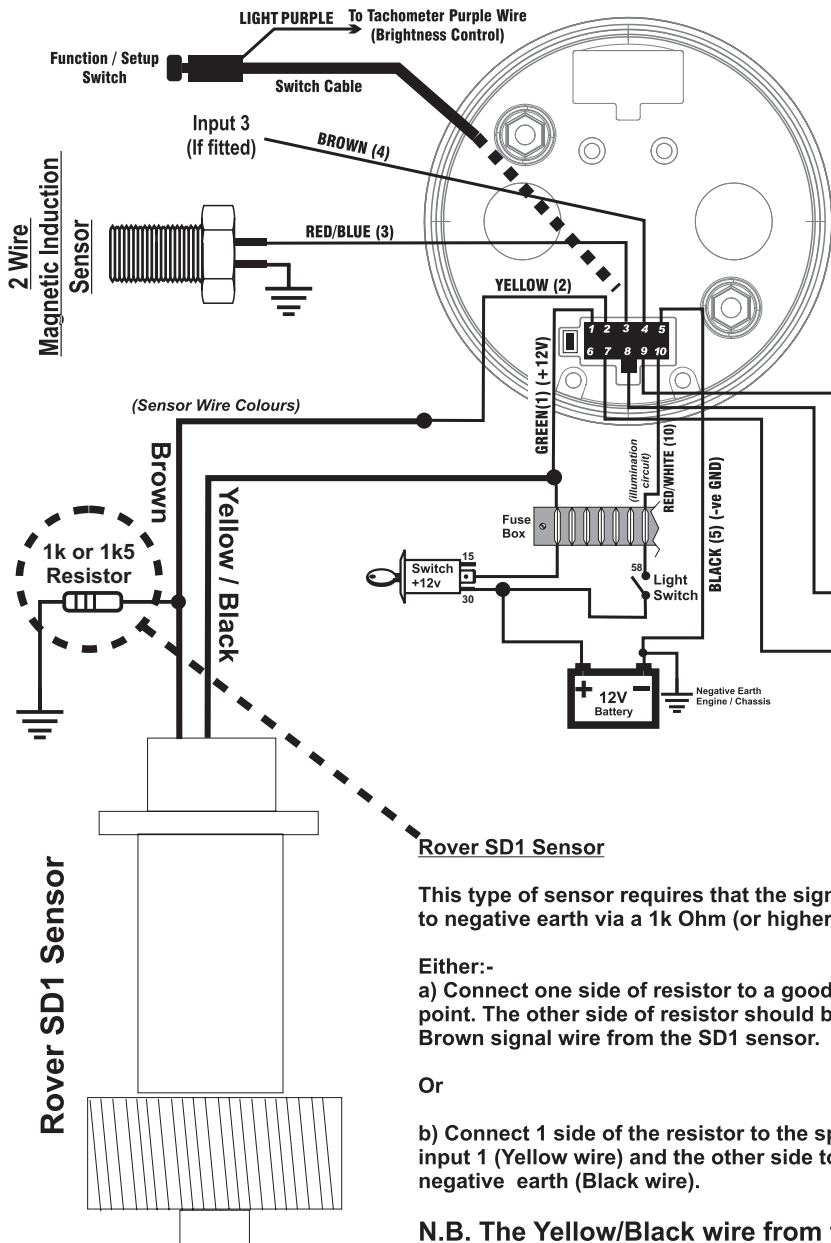


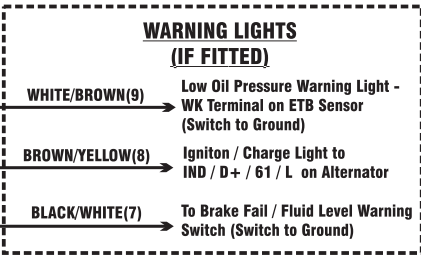
Programmable Speedometer - #1A-4408/10

NEGATIVE EARTH ONLY



Wiring / Connection Summary		
Pin	Colour	Function
1	GREEN	Positive (+12v Supply from Ignition Switch via Fuse box
2	YELLOW	Speed Signal Input from 3 wire Sensor or ECU
3	RED / BLUE	Speed Signal Input from 2 wire Inductive sensor
4	BROWN	Speed Signal Input 3 (Alternative input)
5	BLACK	Chassis / Battery Negative
6	PURPLE	To Switch / Brightness Control Tachometer (Optional)
7	BLACK/WHITE	Brake Fluid Level / Handbrake Switch (if fitted)
8	BROWN/YELLOW	Ignition / Alternator Charge Light (IND, D+, 61, L) (if fitted)
9	WHITE/ BROWN	Low Oil Pressure Switch (WK terminal on sensor) (if fitted)
10	RED / WHITE	Backlight illumination (+12v Supply from Light switch)

If in doubt telephone ETB Instruments Limited on (01702) 601055 for advice!



Wiring Instructions

- Always disconnect the battery prior to installation.
- Connect the BLACK wire on the speedometer to a good dedicated ground / earth location (i.e. where the negative (-) battery pole is connected to the chassis of the vehicle).
- Connect the GREEN wire on the speedometer to a switched ignition +12 volt supply (via the fuse box. A 3 Amp fuse is recommended)
- The signal input should be connected in either of the following ways:-
 - M8 NPN SENSOR 340 002** - The BLACK signal output wire from the sensor should be connected to the YELLOW wire on the speedometer. Connect the BROWN wire on the sensor to a fused, switched +12v supply, and the BLUE sensor wire to a good ground / negative earth location.
 - 2 Wire Magnetic Induction Sensors** - Connect the RED/BLUE wire to one terminal on the sensor & the other wire negative earth. It does NOT matter which way round you wire the sensor to the speedometer.
 - 3 Wire Hall-effect / OEM Gearbox Sensors** - Usually if there are 3 wires, (+12v supply, GND and signal out) the signal output is connected to the YELLOW wire on the speedometer. Please contact the sensor / vehicle manufacturer to obtain the wiring specification of gearbox sensor, or alternatively please contact ETB Instruments Limited on (01702) 601055 for advice.

Rover SD1 Sensor

This type of sensor requires that the signal is "pulled-down" to negative earth via a 1k Ohm (or higher) resistor.

- Either:-
- Connect one side of resistor to a good negative earth point. The other side of resistor should be connected to the Brown signal wire from the SD1 sensor.
- Or
- Connect 1 side of the resistor to the speedometer signal input 1 (Yellow wire) and the other side to the speedometer negative earth (Black wire).

N.B. The Yellow/Black wire from the SD1 sensor should be connected to +12v from ignition switch.

PLEASE READ FIRST!

General Safety Instructions for ALL Instruments

Prior to the actual installation work, the negative pole of the battery must be disconnected first, since otherwise there is danger of creating short circuits. Short circuits can cause cable fires, battery explosions, and damages in other electronic storage systems.

Basic knowledge of vehicle electrics and mechanics is necessary for installation to prevent harm to people, property and the environment.

Make sure that the engine cannot be unintentionally started during installation.

Do not wear loose fitting clothes!

For the installation location of the equipment unit, make sure that sufficient clearance is provided behind the installation aperture. Use a drill to pre-drill the installation opening and complete the opening using a compass saw or piercing saw (observe the safety instructions of the hand tool manufacturer.)

Electrical Wiring Safety Instructions for ALL Instruments

- Prior to the actual installation work, the negative pole of the battery must be disconnected first, since otherwise there is danger of creating short circuits. Short circuits can cause cable fires, battery explosions, and damages in other electronic storage systems.
- Connect the cables in accordance with the electrical connection diagram
- Take account of the cable cross section - a reduction in cable cross section results in a higher current density. This can cause the cable to heat up.
- When laying electric cables, use existing cable ducts and routes but without laying cables parallel to ignition or cables leading to high current consumers. Fix the cables with cable tape or adhesive tape.
- Do not route the cables over mobile components.
- Do not fasten cables to the steering column.
- Make sure that the cables are not exposed to tensile, compressive or shear forces.
- If the cables are routed through drilled holes, protect them with rubber sleeves or the like.
- Strip cables only with a cable stripper. Adjust the stripper so that no strands are damaged or severed.
- Crimp connections should only be made with a crimping tool.
- Insulate exposed strands so that no short circuiting can occur.

ETB Limited Warranty

ETB Instruments Limited warrants all merchandise against defects in factory workmanship and materials for a period of 12 months from date of purchase. This warranty applies to the first retail purchaser and covers only those products exposed to normal use or service. Provisions of the warranty shall not apply to an ETB product used for a purpose for which it is not designed, or which has been altered in any way that would be detrimental to the performance or life of the product, or misapplication, misuse, negligence or accident. On any part or product found to be defective after examination by ETB Instruments Limited, ETB Instruments Limited will only repair or replace the merchandise through the original selling dealer or on a direct basis. ETB Instruments Limited assumes no responsibility for diagnosis, removal and/or installation labour, loss of vehicle use, loss of time, inconvenience or any other consequential expenses. In the event of merchandise being returned to ETB Instruments Limited, The responsibility for payment of delivery rests with the customer. The warranties herein are in lieu of any other expressed or implied warranties, including any implied warranty of merchantability or fitness, and any other obligation on the part of ETB Instruments Limited, or selling dealer. Your statutory rights as a consumer are not affected.