



Caerbont Automotive Instruments

Fitting Instructions

Tachometer fitting instructions (Petrol Engines)

Help : Fitting Instruments : Tachometer fitting instructions

CAI Electronic Programmable Tachometer (EPT)

Introduction

The EPT can be programmed to accommodate 4, 6 or 8 cylinder engines and to accept inputs from Contact Breaker Ignition Systems and Electronic Ignition Systems.

IMPORTANT INFORMATION

- Only to be fitted to negative earth vehicles
- Disconnect your vehicle's battery prior to installation
- Operating voltage is nominally 12V (11volts min 17volts max)
- The Tachometer complies with CE regulations regarding electromagnetic compatibility

Input Signals

The EPT can accept input signals from: -

1. The low tension side of the coil. On contact breaker or electronic ignition systems (except multispark and CDI systems)
2. Electronic Ignition Systems Dedicated tacho outputs. (Normally provided when the electronic system is multispark or CDI)

Programming Your EPT

1. Make sure that the battery is disconnected.
2. Make sure that your vehicle is negative earth.
3. Determine number of cylinders.
4. Determine input source, i.e. either contact breaker or electronic ignition.
5. Remove the black hole plug on the rear of the tachometer, by pressing it inwards, just above it's centre, and then inserting a small coin or screwdriver into the edge of the plug.
6. Removing the plug will reveal 6 switches.
7. To programme the number of cylinders the switches should be set as follows:-

No of Cylinders	Switch1	Switch 2	Switch 3
4	Off	Off	On
6	Off	On	On
8	On	Off	On

This is correct for vehicles with a single distributor. (The same number of spark lead outputs from the distributor as the number of cylinders in the engine) See note (A)

If your ignition system is multicoil and / or has no distributor

8. For petrol engine applications switch 5 is always ON and switch 6 is always

OFF

9. Please note, switch 4 adjusts for two types of electronic ignition, one of which generates it's own voltage output for the tachometer (type b) and the other which requires the tachometer supply voltage (type a). If you do not know the type of ignition you have, set switch 4 experimentally to OFF. If this fails and the tacho does not work, switch to ON and try again.
10. To programme the input signal the switches should be set as follows:-

Input Signal	Switch 4	Switch 5	Switch 6
Contact Breaker	Off	On	Off
Electronic Ignition (type a)	On	On	Off
Electronic Ignition (type b)	Off	On	Off

Installation Of Your EPT

1. A hole is needed in the fascia panel, the diameter of which will depend upon the tachometer purchased, with sufficient clearance behind to accept the body of the tachometer.
2. Check that the battery is disconnected.
3. Wire the tachometer as follows:-
 - o *Green Wire*– Connect to power source via a 3 amp fuse
 - o *Black Wire*– connect to earth/ground
 - o *Brown/Slate Wire*– Not used in this application
 - o *Red/White Wire*–Power for the tachometer lamp, connect to a dash lighting power feed.
 - o *White/Black Wire*– For use with Electronic Ignitions which have a dedicated tacho output connection, otherwise not needed. Do not connect to the coil or distributor.
 - o *Red/Blue Wire*– For use when you have a contact breaker or electronic ignition without a dedicated tacho output. Connect to the low tension side of the coil. Otherwise not needed.

4. The tachometer can now be installed in the fascia panel hole, and clamped against the back of the panel using the fixing clamp, spring washers and knurled nuts supplied.
5. N.B. if the tachometer is totally inoperative at this point, when tested, and you have an electronic ignition system, it is well worth checking the settings of switches 4 and 5, and determining whether your system is type a or b. A simple way to check is to meter the voltage output from the electronic ignition, tachometer connection, if voltage is zero, then you have type a, any kind of voltage detected would indicate type b. Make sure that switches 4 and 5 are set according to the table in item 8 of the programming instructions.

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Caerbont Automotive
Instruments

FITTING INSTRUCTIONS

CAUTION

GAUGE TO BE FITTED TO NEGATIVE EARTH VEHICLES ONLY

DISCONNECT THE BATTERY CABLE PRIOR TO INSTALLATION

GENERAL INFORMATION:

OPERATING VOLTAGE: 11-17VDC: NOTE-Instrument is equipped with a 12v lamp.

INPUT SIGNAL: Battery ignition (Coil), Alternator tap (Diesel engine), Digital ECU.

COMPLIES WITH 95/54/EC, ISO7637 & ISOTR 10605

CALIBRATION:

The Semi-Programmable tachometer is calibrated (programmed) by setting a combination of six switches found on the rear of the instrument. To gain access to these switches remove the hole plug. Set the switches prior to installing the instrument.

NOTE: The switch setting must be done with the power 'OFF'.

CALIBRATION PROCEDURE: Set the switches to the correct values for the number of cylinders or for diesel engine. Refer to the 'CALIBRATION SWITCH SETTING' table. Locate the setting, then set the switches marked with "0" to the "OFF" position (down).

Calibration Switch Settings:(petrol engines)

No of cylinders	Pulses/rev	Sw 1	Sw 2	Sw 3
8 cylinders	4	ON	OFF	ON
6 cylinders	3	OFF	ON	ON
4 cylinders	2	OFF	OFF	ON

Signal Input Settings:

Input signal	Sw 4	Sw 5
Contact breaker ignition	OFF	ON
Hall Effect	ON	ON
Ecu (Open collector output)	ON	ON
Ecu	OFF	ON
Alternator 'W' terminal	OFF	ON
AC Generator	OFF	OFF

EXAMPLE: Number of cylinders= 4, contact breaker ignition: therefore, switches 1,2,4, and 6 are switched "OFF". 3 and 5 are switched 'ON'.

Calibration Switch Settings:(Diesel Engines)

Pulses/rev	Sw 1	Sw 2	Sw 3
2 to 5	OFF	OFF	ON
4 to 12	OFF	ON	ON
8 to 22	OFF	OFF	OFF
20 TO 48	ON	OFF	OFF

To adjust the tachometer to the correct engine speed, remove the hole plug as explained earlier in this section. Ensure that all electrical connections have been completed. Access to the rear of the instrument is necessary to adjust the potentiometer. Start and run the engine at a mid scale rpm, adjust the potentiometer until the tachometer indicates the correct engine rpm. If you cannot independently measure the engine rpm to set the calibration potentiometer, you will need to take the vehicle to an engine tuning specialist for assistance.

Switch '6' is NOT used for calibration and must be switched 'OFF'

INSTALLATION:

When mounting the gauge in an instrument panel, cut a hole in the instrument panel suitable to fit the diameter of the gauge and clearance for the depth and wires.

Mount the tachometer in the instrument panel and connect the wires as below:

GREEN - Connect to Ignition power source. (+ve) via 3A fuse

BLACK - Connect to ground. (-ve)

BROWN/SLATE - N/A (Tacho hourmeter only)

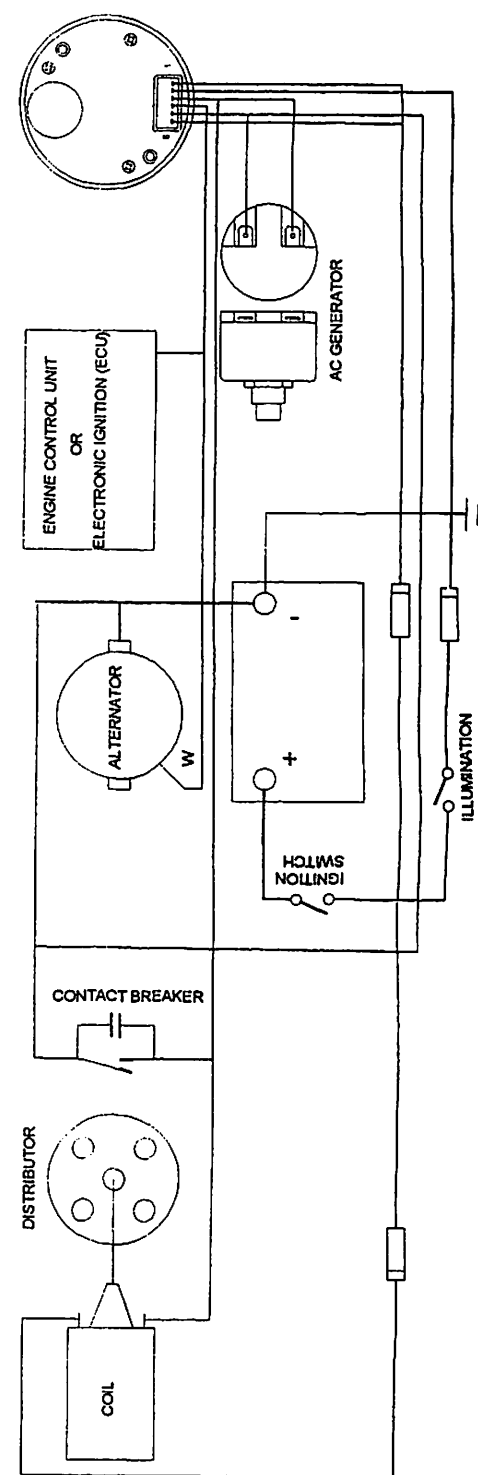
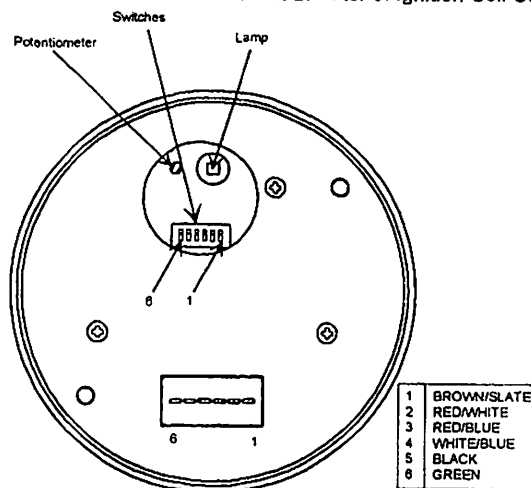
RED/WHITE - Connect to dash lamp power

Signal input alternatives:-

The circuit diagram shows all alternatives, only one is needed.

WHITE/BLACK - Connect to Tacho output of electronic ignition, W terminal on alternator or AC Generator.

RED/BLUE - Connect to Contact Breaker of Ignition Coil Connection.



**Caerbont Automotive
Instruments**
"the original makers of SMITHS instruments"
**Instructions
for
Semi
Programmable
Tachometer**

Caution
**Disconnect the battery cable
prior to any installation**

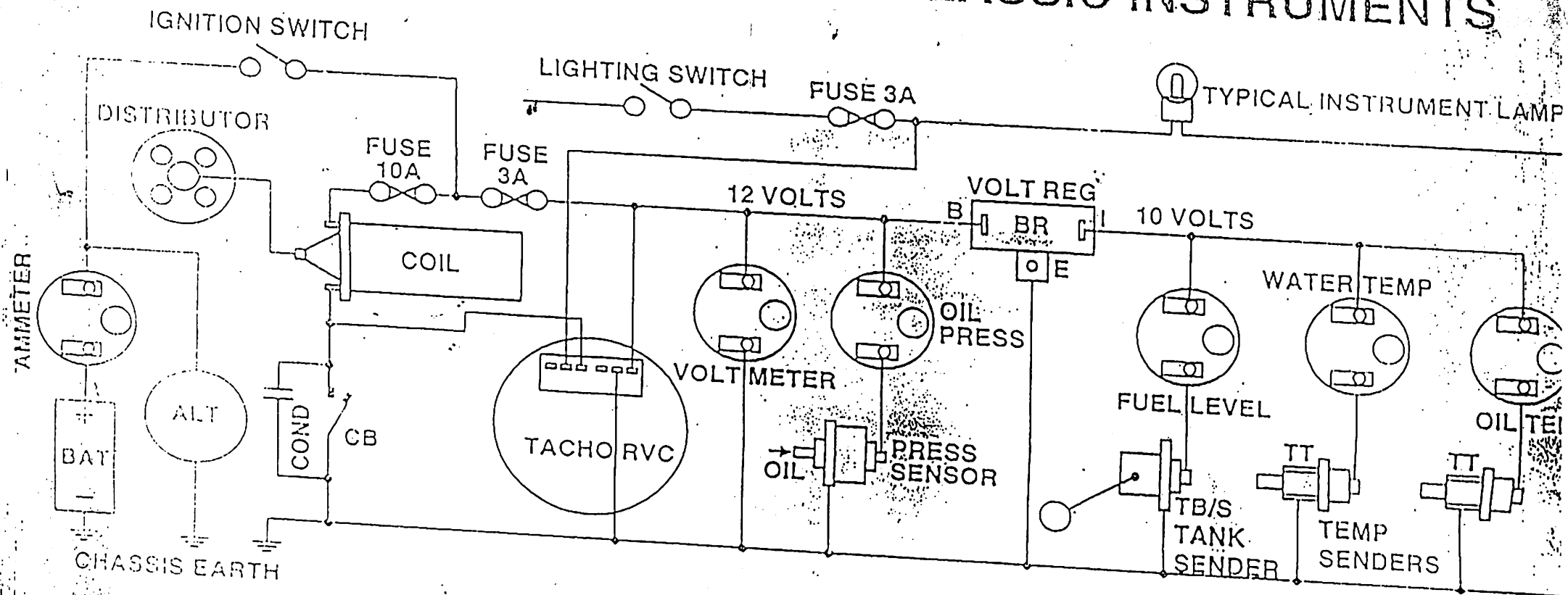
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Terms and conditions apply.

For further information go to the Caerbont
Automotive web site "www.caigauge.com".

Products designed and manufactured under ISO
9001(1994) quality standard.

WIRING DIAGRAM FOR SMITHS CLASSIC INSTRUMENTS



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WARNING: IF YOU ARE IN ANY DOUBT ABOUT THE FITTING AND ELECTRICAL CONNECTION OF THIS PRODUCT, YOU MUST CONSULT A QUALIFIED VEHICLE ELECTRICIAN. FAILURE TO INSTALL THE PRODUCT CORRECTLY MAY RESULT IN INJURY OR DAMAGE. PLEASE FOLLOW THE WIRING DIAGRAM ABOVE.