Instructions for PROLED Programmable Tachometer.

- Fuel contents with low level warning.
- Coolant or Oil temperature with high temp warning.
- Oil pressure with low pressure warning.
- Speed in MPH or Km/h
- Odometer and trip in Miles or Kilometres

Application Notes

- For fitment to negative earth petrol powered vehicles only.
- Operating voltage 10-16 volts DC.
- Compatible with most popular ignition systems.

Caution: Disconnect the negative battery cable prior to any installation.

Electrical Connections

The tacho is supplied with two harnesses featuring 8 way and 10 way connectors respectively which mate with the tacho. The 10 way incorporates the programming button. The flying leads should be connected as follows.

Note: you will be left with some unconnected 'spare' leads, this is quite normal/acceptable.

8 way	Connect to:
Green	Ignition +12Volts.
Red/Black	Signal from 2 wire speed sensor.
Red/Blue	Signal from 3 wire speed sensor.
Red/White	+12Volts for illumination.
Black	Ground.
Red	Connect to +12Volts only if ECU requires resistive load for tacho.
White/Black	If contact breaker ignition used, connect to negative side of coil.
White	Connect to signal output If magnetic sensor is used .

10 way	Connect to:
Slate	Connect to +12Volts if speed sensor required resistive load OR connect to ground if using a 2 wire quenched oscillator sender.
Green/Black	Connect to fuel sender signal.
Green/Blue	Connect to temperature sender signal.
Green/Orange	Connect to oil pressure signal.

Programming

Once the electrical connections have been made, reconnect the battery cable.

Using the push-button in the harness, press and hold the button whilst switching the ignition on. The words 'Release Button' should be displayed on the OLED screen. The tacho is now in programming mode. Now release the button. From now on, each momentary push of the button will increment through the programming menu in the following order.

Release Button

Drive to set for speedo calibration.

Pulses per unit, alternative method of speedo calibration.

Cylinders, to set number of cylinders.

Fuel sender, to set fuel sender characteristics or turn off fuel display.

Temp sender, this can be linked to either oil or coolant temperature or to turn off temperature display.

Oil sender, to set sender characteristics or turn off oil pressure display.

MPH Km/h, to set speed display in MPH or Km/h. The trip and odometer display automatically adjust for Miles or Kilometres.

Programming (continued)

Once in programming mode, each momentary press of the button moves through the major menu headings. With a major heading displayed, pushing and holding the push-button for one to two seconds will take you into the programming section for that heading.

Speedometer Calibration

There are two methods of setting the speedometer calibration:

(i)   Drive to set

(ii)   Manually input the PPU number

Drive to Set

In programming mode, press the programming button momentarily until the display reads 'Drive to set'. Push and hold the button until the display shows 'Drive' together with the current PPU (pulses per unit) count and a zero.

Now drive the vehicle exactly one mile and then press the programming button. While driving, the speedo will count the number of pulses generated by the sender.

On the completion of the one mile trip, stop the vehicle, the display will still show the old PPU, the 'zero' will have incremented to the new PPU figure. Press the button momentarily and the display will read 'PPU SETxxxxxx' where xxxxxx is the number just generated. After approximately five seconds the display returns to the main menu 'Drive to set' and the new PPU figure is implemented.

Note: The new PPU figure must be greater than 400 and less than 125,000 or no new figure will be stored.

Manually Inputting the PPU Number

(i)   Calculate the PPU Number

To begin, you need to know the number of times your wheels revolve per mile (or kilometre). Stand the vehicle on a flat surface and mark the tyre at the closest point to the ground, mark the ground at the same point. Move the vehicle forward by one complete wheel revolution and measure the distance travelled.

Wheel revs per mile = 63360 divided by the distance travelled in inches.

Wheel revs per km. = 1000 divided by the distance travelled in metres.

To Calculate the PPU Number (pulses per mile/km)

- For magnetic sensor, magnets or bolt heads moving past the sensor (eg. prop shaft mounting).

PPU number = (wheel revs per mile/km) x (diff ratio) x (number of magnets or bolts).

- For sender driven from transmission cable drive.

Push vehicle forward on flat ground for 6 complete wheel revolutions and count the number of cable turns.

Cable turns per mile (or km) = (Wheel revolutions per mile ÷ 6) x cable turns counted.

PPU number = Cable turns per mile (or km) x number of pulses per sender revolution.

(ii)   Input PPU Number

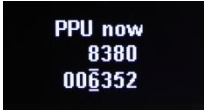In programming mode, press the button momentarily until the main menu heading is 'Pulses per unit.'

Press and hold the button until the display changes to show 'PPU Now' together with a number (showing current setting and row of six zeros.

The row of zeros is to be replaced with your newly calculated PPU number. Pressing the button momentarily will increment the last zero (the least significant figure) by one. Repeat the action until this digit matches the least significant figure of your new PPU number. When the two digits match, press and hold the button, the next digit in line is highlighted. Keep pressing the button

(momentarily) until the second digit matches that of the new PPU number. Press and hold the button to bring the third digit into play. Repeat the actions until the full PPU number is shown.

Note: All six digits must be set ie. including any zeros. Pressing and holding the button when the last digit is set will result in the display reading 'PPU Set xxxxxx.' Where xxxxxx is your new PPU number. After approximately five seconds the display will return to the main menu 'Pulses per unit' heading.' The new PPU number is now in force.

Cylinders

Navigate to the main heading 'Cylinders' as described in the 'Programming' section. Press and hold the button until you read 'Cylinders' together with the number '1' on the display. Each momentary press of the button will increment the number up to a maximum of '12.'

This number should match the number of cylinders in your engine. Once you reach the desired number, press and hold the button, your number will be stored and the display reverts back to the main 'Cylinders' heading.

Please Note: This setting is true for single spark ignition systems. If you have a 'wasted spark' system then the tacho signal will feature double the number of pulses generated by that of a single spark – in this case you should set the number of cylinders to twice the actual number.

Fuel Sender

There are six options available, defined as shown in the following table.

Fuel Sender	Ohmic Values	
	Empty	**Full**
Euro	10	180
Classic	240	20
Dip Pipe	68	3
Smiths Euro	275	27
USA	240	33
OFF		

Navigate to the main heading 'Fuel Sender' as described in the 'Programming' section. Press and hold down the programming button until the word 'Euro', the first of the five options, apears on the

display. Momentary presses of the programming button will scroll through the options. Once the desired option appears in the display, press and hold the button until the main heading 'fuel sender' appears. The fuel sender characteristic are now set.
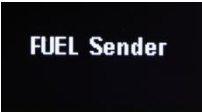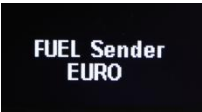

Low fuel warning operates as follows:

- When approximately 10% of fuel remains, the fuel symbol inverts.
- When approximately 2% of fuel remains, the fuel symbol will flash.

Temp Sender

The temp sender can be set for either coolant or oil temperature. The appropriate graphics will appear on the display once your selection of the six options is made.

| Temp sender Options |
| --- |
| EU Coolant |
| EU Oil |
| Smiths Coolant |
| Smiths Oil |
| USA Coolant |
| USA Oil |
| OFF |

Navigate to the main heading 'Temp Sender' as described in the 'Programming' section. Press and hold down the programming button until the 'Eu Coolant', the first of the six options, apears on the display. Momentary presses of the programming button

will scroll through the options. Once the desired option appears in the display, press and hold the button to set the high temperature warning function. The

coolant warning function range is between 96°C and 110°C Momentary presses of the programming button increments the warning level by two degrees celsius.

If the oil temperature reading has been selected then the warning function operates between 100°C and 145°C and increments by 5°C per press of the programming button.
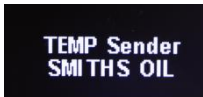
Oil Pressure Sender

The oil pressure has no sender options. The characteristic is fixed at 0 – 5volts. However, it can be turned off if desired.

Navigate to the main heading 'Oil Sender' as described in the 'Programming' section. Press and hold down the programming button until 'OIL PRESS' apears on the display. This enables the oil pressure display. At this point, a momentary press of the button will display 'OIL SENDER OFF' and disable oil pressure on the main display. Press and hold the programming button will reveal the pressure warning function. The
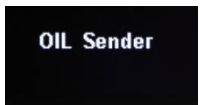
warning operates between 0.5 and 1.0 Bar. Momentary presses of the programming button advances the setting in increments of 0.1Bar. Once the desired warning point is reached, pressing and holding the button saves the setting and the display reverts to the 'Oil sender' heading. The oil pressure gauge is now set.

The pressure warning is shown on the main display as a flashing oil can symbol.

MPH or km/h

To set the digital speed indication, navigate to the MPH KPH display, as described in the Programming section.

Pressing and holding the button will display the MPH setting. Each momentary press of the button will effectively toggle between MPH and km/h. With your

choice of either MPH or km/h on the display, press and hold the button to select. The trip and total odometer display naturally follows the selection.