VDO Viewline 80/85mm Tachourmeter Installation and Calibration

These instructions are for the installation and in situ programming of VDO Viewline Tachourmeters and are an alternative to the VDO installation instructions. In case of doubt, or if the NMEA 0183 signal or PC programming is to be used, the VDO instructions must be followed.

The tachourmeter is supplied with two looms, one with an 8 pin connector, the other with a 14 pin connector, which both plug into the back of the gauge. The two momentary (push button) switches supplied must be wired in for programming. Wiring connections are as follows:

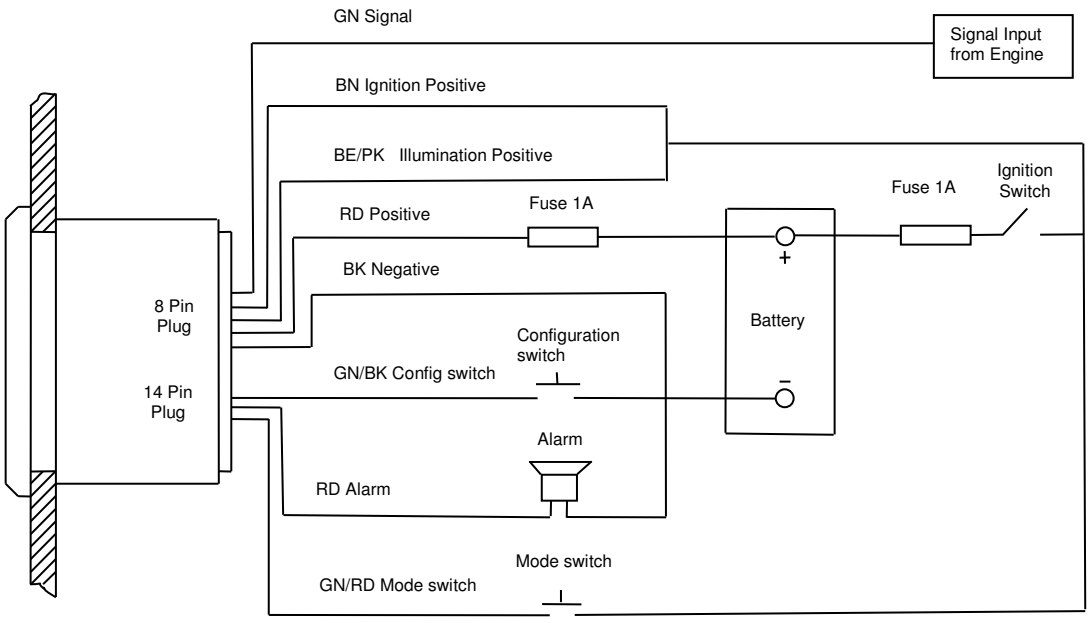
8 pin connector:

Pin 1, red wire: Battery positive 12V or 24V,fused (see FAQ on Page 4)
Pin 2, black wire: Battery negative
Pin 4, brown wire: Ignition, i.e. switched positive 12V/24V, fused
Pin 5, green wire: Signal Input
Pin 6, blue/pink wire: Backlighting positive, must be fused

NB: Pins 3, 7 and 8 are not used. Both positive connections, (Pin1, red wire & Pin 4, brown wire) must be made for the instrument to work. Pin 3 can optionally be used as a negative feed to the sensor, if required.

14 pin connector:

Pin 11, green/black wire – Configuration push button switch to negative
Pin 12, green/red wire – Mode push button switch to positive (ignition)
Pin 13, red wire – Alarm output 100 mA max (optional)
Pins 1 to 10 and Pin14 are not used.



To calibrate the tacho, the number of impulses per engine revolution must be programmed into the instrument.

Determining the Impulses per engine revolution

If the number of impulses per revolution is not known, measurement must first be made, using a hand held, optical or mechanical tacho to measure the engine speed and a multimeter or oscilloscope to take a reading of the impulses generated.

With the engine running at a constant speed of at least half the rated engine speed, the engine speed must be measured with the hand held tacho. If no hand held tacho is available, the engine can be run at full throttle under no load, and the engine speed then be assumed to be the rated speed according to the engine manufacturer's specifications.

With the engine still running at the same speed, the signal (impulses per second or Hz) must be recorded.

The impulses per second (Hz) must be converted to impulses per minute, i.e. multiplied by 60. Then the impulses per minute must be divided by the revolutions per minute to give the number of impulses per revolution. That is the figure required to calibrate the tacho.

i.e. **Impulses/rev = 60 x impulses/s (Hz) : r/min**

Calibration

1. Turn on the battery power (Pin 1, red wire) e.g. battery isolating switch.
2. Turn off the ignition power (Pin 4, brown wire) e.g. engine key switch.
3. Press and hold down the Configuration Key (Pin 11, green/black wire).
4. Turn the ignition power back on.
5. Release the Configuration Key. The screen will now display "PULSE".
6. Press and hold the Configuration Key until the set impulse number is displayed, with the first digit flashing.
7. Briefly pushing the Configuration Key repeatedly advances the flashing digit by one at a time.
8. When the correct digit is displayed, press and hold the Configuration Key again until the next digit starts to flash.
9. Repeat the process until the correct number of impulses per rev are displayed. Note that the leading digits may have to be zeros. To finalise the setting, the last digit (i.e. right hand side) must be flashing.
10. Press and hold the Configuration Key until the screen display changes back to "PULSE".
11. Turn off the ignition power. This saves the setting.
12. Unplug the 8 Pin connector from the instrument and then reconnect.
13. The calibration is now complete.

Selecting Time Mode (12h or 24h) and Setting Alarm Threshold

1. Turn on the battery power.
2. Turn off the ignition power.
3. Press and hold down the Mode Key. (Pin 11, green/red wire).
4. Turn the ignition power back on.
5. Release the Mode Key.
6. Press and hold the Mode Key until “UNIT” is displayed.
7. Briefly pushing the Mode Key will alternate the clock format between 12h and 24h.
8. When the required format is displayed, press and hold the Mode Key until “UNIT” is displayed again.
9. Press the Mode Key briefly, the display changes to:”WARN”.
10. Press and hold the Mode Key until the alarm threshold is displayed, with the first digit flashing.
11. Using the Mode Key, adjust the speed as required in the same way that the impulse calibration was done above.
12. When the desired threshold speed is displayed, press and hold the Mode Key until the display changes back to “WARN”.
13. Turn the ignition power off.
14. The time mode and alarm threshold are now set.

Selecting Display Indicator during Operation

1. Turn on the battery power.
2. Turn on the ignition power. The Engine Hours are displayed.
3. Briefly press the Mode Key repeatedly to sequentially scroll through the Engine Hours, Trip Hours, Time and Voltage displays.

Resetting the Trip Hour Counter

1. Turn on the battery power.
2. Turn on the ignition power.
3. Briefly press the Mode Key once. The Trip Hours are displayed.
4. Press and hold the Mode Key until the display is zeroed.

Setting the Clock

1. Turn on the battery power.
2. Turn on the ignition power.
3. Briefly press the Mode Key repeatedly until the Time is displayed.
4. Using the Mode Key, adjust the Time as required in the same way that the impulse calibration was done above.
5. Press and Hold the Mode Key. A steady display of the time indicates that the time has been set.

Setting the LCD Display Brightness

1. Turn on the battery power.
2. Turn on the ignition power.
3. Briefly press the Mode Key repeatedly until the Voltmeter is displayed.
4. Press the Mode Key briefly
5. Press the Mode Key repeatedly until the desired brightness is attained. [Can be set between 0 (Off) and 10.]
6. Press and Hold the Mode Key. The desired brightness is now permanently set.

FAQ

1. **Can the engine hours run prior to installation of the instrument be programmed into the instrument?** – Yes, but this must be done by Continental VDO or one of their service agents. The hours must be specified prior to ordering the instrument or the instrument must be returned to VDO or one of their agents to have this done. This work will be charged for.

2. **Will the instrument loose its calibration if the constant battery connection is interrupted?** – No, the calibration will not be lost, but the setting for the clock will be lost if the battery power is turned off. It is therefore suggested that the instrument (Pin1, red wire) be directly wired to the battery with a fused essential services connection, i.e. one that is not switched off when the battery isolation switch is turned off.