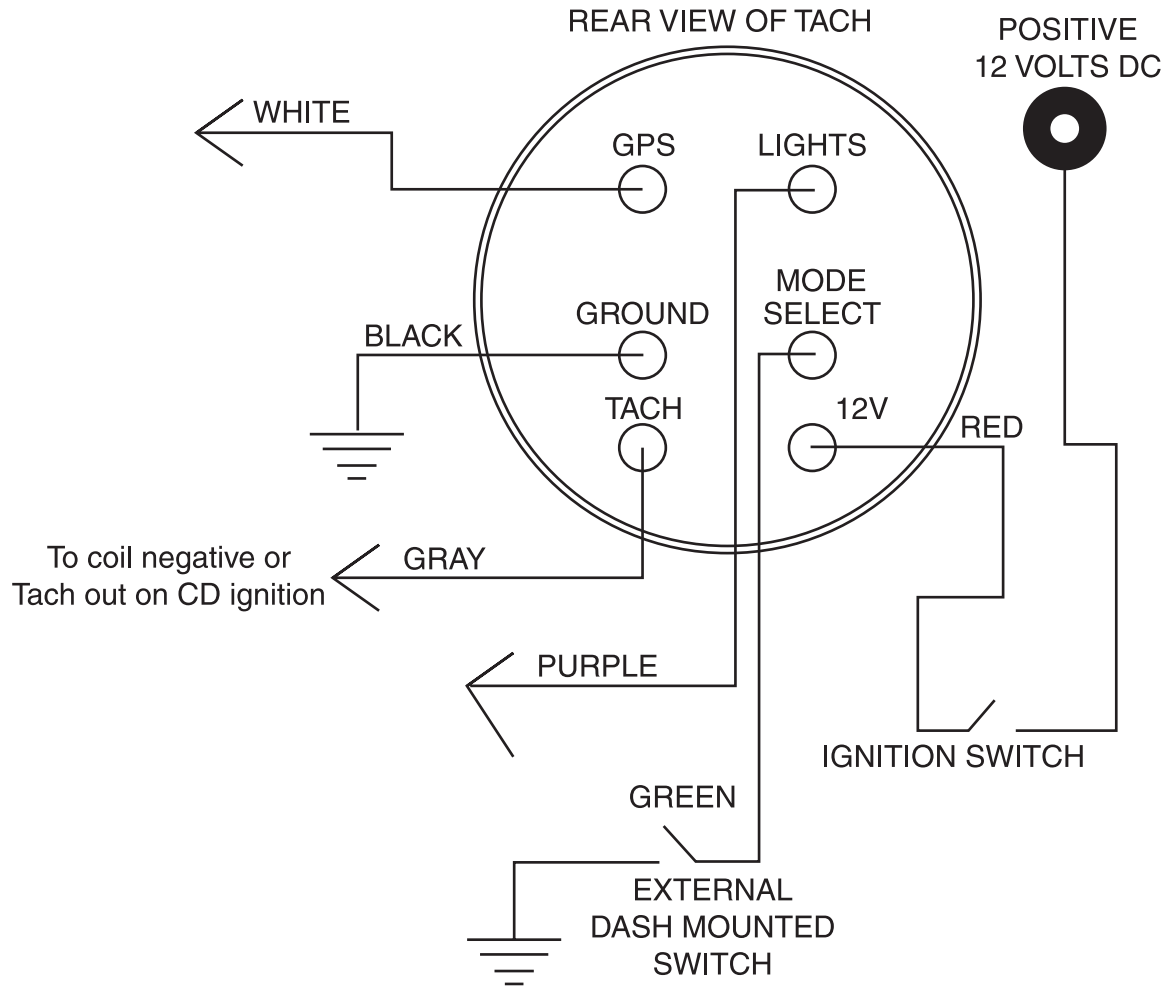


Nordskog Performance Products

Installation Instructions For GPS Speedometer and Tachometer



Connect the black wire to the exact ground location as your GPS.

Connect the red wire to a fused accessory or the switched ignition circuit.

Gray - Tach input, connect to coil or tach out of ignition system.

Purple - Running lights, this is for night time viewing of the gauge.

White - This wire must be connected to the NMEA output from your existing handheld or stationary GPS system with a one second update rate. All GPS systems can communicate with each other through the industry standard NMEA output. To purchase this connector, you will need to contact your GPS manufacturer. We do not supply connectors for interfacing to your GPS.

Green - Connect this wire to a momentary normally open switch and then to ground. This switch is used for memory recall and to switch modes. **CAUTION!** If this green wire accidentally touches or receives 12 volts, the unit will be destroyed and your warranty will be voided!

GPS head unit to receiver or existing GPS wire harness

- 1) Head unit white lead to receiver or GPS white lead
- 2) Receiver or GPS red lead to 12 volts power (if wired to continuous power - GPS will not have to initialize with satellite each time)
- 3) Receiver black lead to ground

All other wires on receiver are not used and should be taped off

***NOTE:** GPS receiver manufacturer recommends that receiver be powered up for approximately 48 hours (before the unit sits idle for no more than a 180 day period) to charge the internal battery.

User's Manual for Nordskog GPS Speedometers

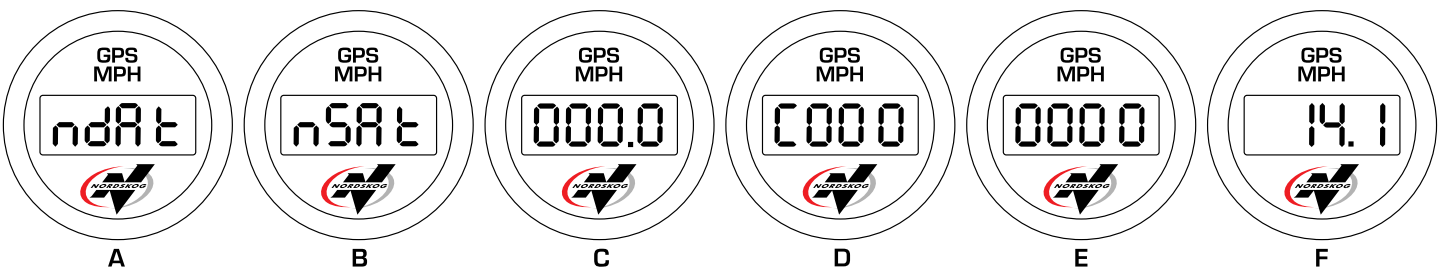
The Nordskog GPS memory speedometer also includes a voltmeter, compass and a configurable tachometer.

It is imperative that the Nordskog speedo is properly grounded at the same EXACT location as your existing GPS. You must locate the NMEA output from your GPS and connect this to the white wire from the speedo. This is how the speedo gets its information. You will have to contact your GPS manufacturer if you have any questions about the connector. The gray wire is used for the tachometer function. If you do not want to use the digital Tach then just leave the gray wire disconnected. When power is applied, the voltmeter will momentarily display system voltage. After a few seconds the speedo function will appear. If the speedo displays the letters **ndat** (NO DATA) **(A)**, this means that the speedo is not communicating with your GPS. You will need to check your connections again. If the GPS reads **nsat** (NO satellites) **(B)**, this means that the GPS and the speedo are communicating, however, your GPS has not fully determined its position yet. This may take up to 10 minutes initially, if your GPS is new. After the GPS figures out where on the planet it is, then it will start to display speed in MPH **(C)**. After driving your boat, the top speed can be displayed by pressing and holding the push-button, (Push button OPTIONAL). It will display the top speed that your boat has reached. If you continue to hold the button,

then this number will be reset back to zero, so that you can retest your boat. If the button is just "tapped" momentarily it will then switch to the Compass mode **(D)** simply "Tap" the button again. To switch to the Tach mode **(E)** simply "Tap" the button again. To switch to VOLTmeter mode **(F)**, momentarily "Tap" the button again. Tapping the button momentarily will make the gauge switch to the next mode. Pressing and holding the button will display the highest reading in Speedo mode. Pressing and holding the button even longer will erase the highest reading. The Tachometer has 4 digits. You can program the Tachometer, by the use of the internal dipswitches on the back of the housing, to determine how many active digits you want and what the update rate is. If the Tach is used on a high performance race boat, may want only the first 2 digits to be active and the second 2 digits to remain reading 00. In this mode, the Tachometer updates at 100 times per second. If the tachometer is used for synchronizing, you want to make all 4 digits active and the update rate will only be 1 time per second. If you want something in between, then you can make the first 3 digits active and the last digit read 0. In this mode, the Tach will update at 4 times per second. There are 4 dip switches on the circuit board that can be accessed through the top hole on the back of the Speedo housing. 2 switches are for determining active digits/update rate and the other 2 digits are used for

determining if you want the Tach to be used on a 4,6,8cyl, or outboard engine.

There are 4 switches 'ganged' together on the back of the circuit board. Access is through the top hole on the back of the gauge housing. If you look inside there you will find the small dip switches used for programming the Tachometer. Switch number 1 and 2 (starting from the left) controls the number of active digits. If both switches are off (down) then all 4 digits are active and the Tachometer will update very slowly (once per second). If the first switch is pushed up (on) then 3 digits are active and the last (right hand) digit will remain on zero. If both the first and second switches are on, then only the first 2 digits will be active and the Tachometer will update very fast. The last 2 switches are utilized for changing from a 8 cylinder engine to a 6 or 4 cylinder engine. If both switches (3 and 4) are both off then the Tachometer will work on a 8 cylinder engine. If switch number 3 is on (up) then the Tach will work on a 6 cylinder engine. If both of the last switches (3 and 4) are on, the Tach will be programmed for a 4 cylinder engine. If switch number 3 is off (down) and 4 is on (up), then Tach will work for outboards. You may want to try the operation of the Tach in a couple of different modes to see which update rate that you like the best.



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