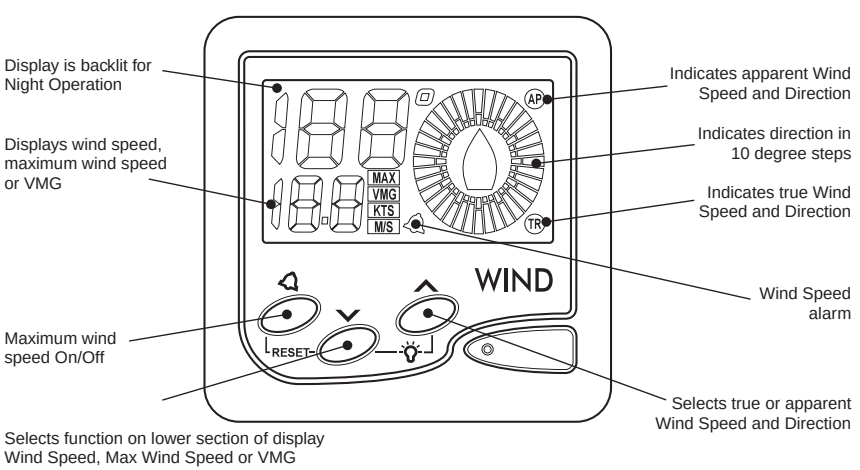
NAVMAN

Contents

Specification

- **Power Supply**
  10.7 to 16.6 VDC, 30mA nominal, 40mA with backlight on.
- **Operating temperature**
  0°C to 45°C.
- **Size of display**
  112 x 112 x 24mm (4.4 x 4.4 x 1”), overall depth 35mm (1.4”) behind panel.
- **Display type.**
  Twisted Nematic (TN) grey background, 0°C to +70°C.
- **Illumination**
  Red LED switchable from key pad.
- **RF interference**
  Less than 6 dB maximum quieting on any marine radio channel with 3 dB gain antenna within 1 metre of instrument display head (European EC specifications).
- **Wind Direction**
  Apparent and true 180 degrees to port and starboard.
- **Wind speed**
  0 to 99 knots, or 0 to 50 m/sec with maximum wind speed recording.
- **Alarm**
  Wind speed alarm user settable value.
- **VMG display**
  Displayed in 0.1 steps to 19.9 knots and 1.0 steps above 20 knots.
- **NMEA input (for VMG and True Wind Data calculation)**
  Accepts VHW sentence from NAVMAN S100 speed log or other instrument with NMEA output.
- **NMEA output**
  NMEA 0183 format VWT, VWR, MWV, VPW for NAVMAN R100 system repeater or other NMEA compatible instrument. Short circuit protected. Drive capability for up to four NMEA receivers.
- **Transducer cables.**
  5 pin Fuji connector for wind mast head transducer, 5 conductor cable for NMEA input, output and power connections.
- **Transducer**
  Lightweight weatherproof type with 30 meters of cable. Electronic sine cosine output.



Installation

Location

The NAVMAN W100 is designed for above or below deck installation. Select a position that is:

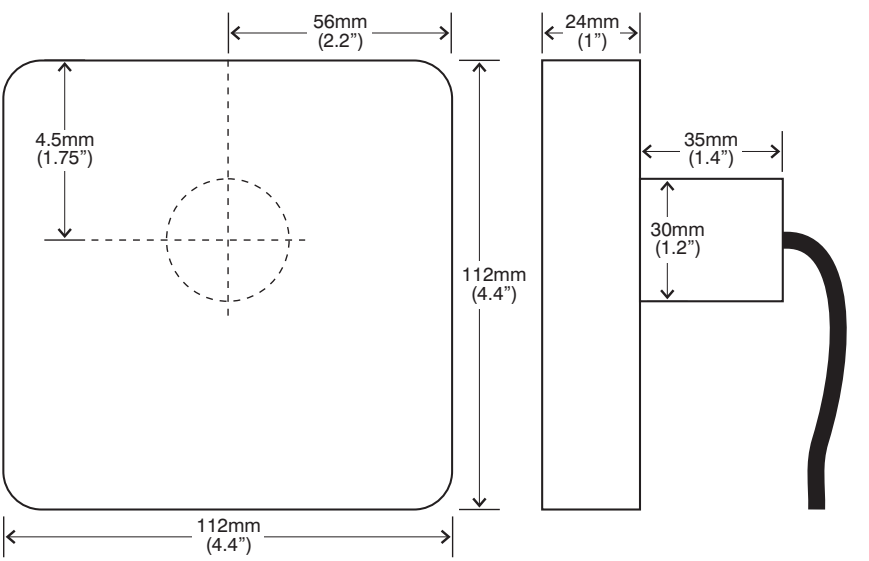
- At least 300mm from a compass
- At least 500mm from any radio
- Easy to read by the helmsman and crew
- Protected from physical damage
- Accessible to electrical cable connections

Mounting

The mounting surface must be flat. Use the template to set the centre of the fixing hole.

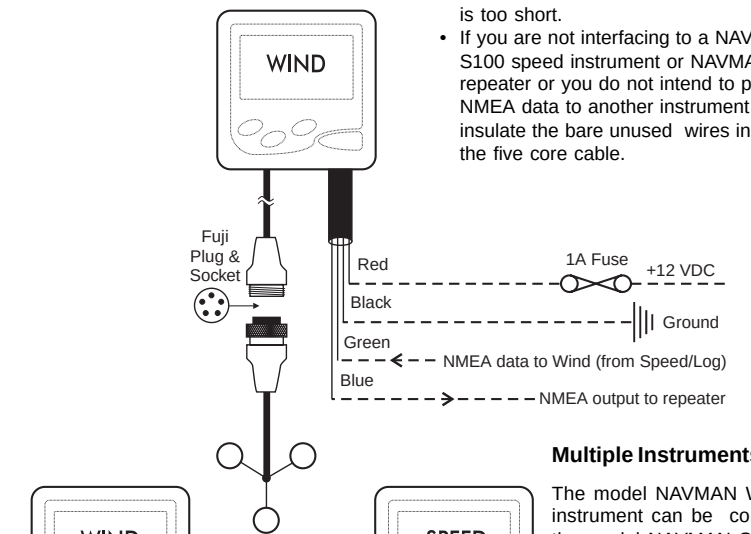
- Drill a 32mm (1.25") diameter mounting hole through the bulkhead.
- Remove the fixing nut. Peel the protective paper off the foam gasket and attach the gasket to the rear of the instrument.
- Insert the instrument through the bulkhead.

  Hand tighten the nut and then finally tighten with a spanner. Do not over tighten so that the water sealing ability of the gasket is damaged.



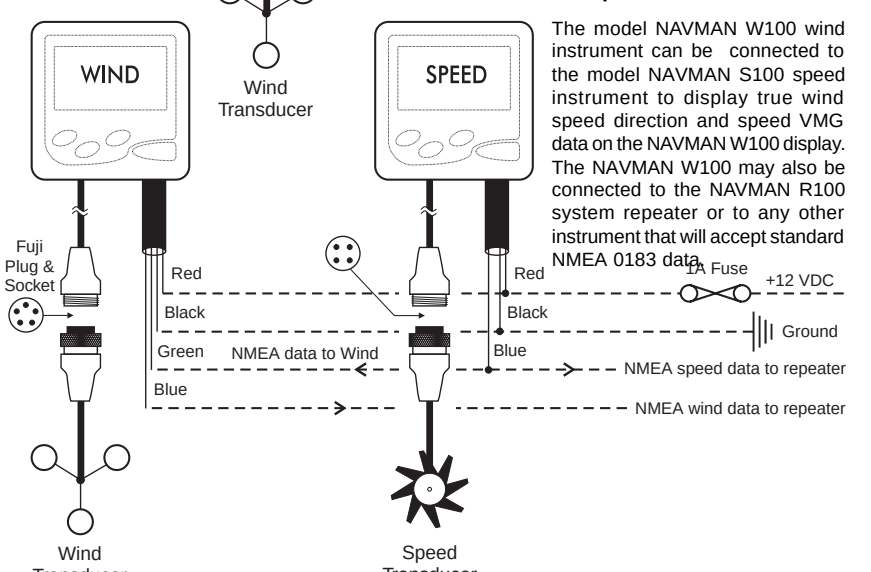
Wiring Connection

- Keep electrical and transducer cables away from alternator or other noise generating electrical cables. Avoid connecting the instrument to power circuits that share loads with ignition, alternators, inverters and radio transmitters. Electrical power supply connections should always be as short as possible.
- Connect the red wire to the positive supply via a 1 amp fuse or a 1 amp circuit breaker. Connect the black wire to the electrical ground. A 1 amp fuse will provide protection for up to five 100 series instruments.
- Connect the 5 pin Fuji connector to the wind transducer cable connector. Do not cut or shorten the transducer cable. Extension cables are available if the transducer cable is too short.
- If you are not interfacing to a NAVMAN S100 speed instrument or NAVMAN R100 repeater or you do not intend to provide NMEA data to another instrument then insulate the bare unused wires in the end of the five core cable.

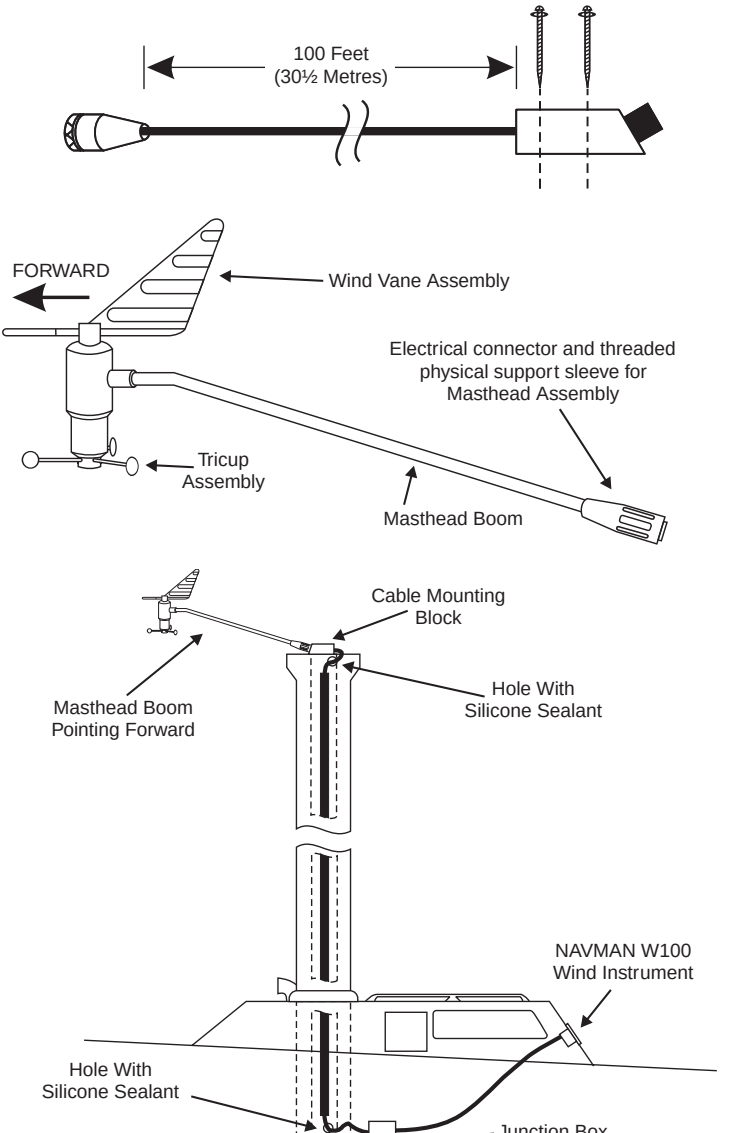


Multiple Instruments

The model NAVMAN W100 wind instrument can be connected to the model NAVMAN S100 speed instrument to display true wind speed direction and speed VMG data on the NAVMAN W100 display. The NAVMAN W100 may also be connected to the NAVMAN R100 system repeater or to any other instrument that will accept standard NMEA 0183 data.



Installation of the NAVMAN W100 Mast Head Transducer



Calibration Procedures

Linearisation of the Wind Sensor and Instrument

Each wind direction sensor has slightly different electrical characteristics. To provide a highly accurate display of wind direction data these characteristics must be entered into the wind display. This process is called linearisation.

Alignment of the Wind Vane and Display

It is very difficult to align the mast head transducer in an exact fore and aft position during installation on the mast. The NAVMAN W100 allows the user to carry out adjustments to the displayed wind direction after the transducer is installed.

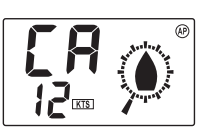
Wind Speed Calibration

The NAVMAN W100 wind speed transducer is factory calibrated to read the correct wind speed under normal conditions. If necessary the user is able to make adjustments to the wind speed reading.

Note:
When first installing the NAVMAN W100, the Linearisation should be performed first, followed by Alignment then Wind Speed.

Wind Speed

Press and hold the ◁ and ^ keys for 3 seconds.



To increase reading press the ^ key.

To decrease reading press the v key.

Each key press results in a 5% change. It may take 2 or 3 key presses before a change to the speed can be observed.

To exit press the ◁ key.

Alignment

Whilst in Wind Speed mode, momentarily press the ◁ and ^ keys.

Press the ^ and v keys to change the displayed wind direction.

To exit press the ◁ key.

Linearisation

Whilst in Alignment mode, press the ◁ and ^ keys until the display shows LE. The display will flash for 6 seconds before displaying LE.

Rotate the wind vane through two complete revolutions to allow the NAVMAN W100 to perform the automatic linearisation process. The vane can be rotated in either direction.

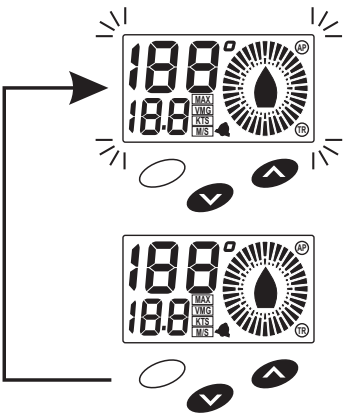
To exit press the ◁ key.

Note:
If there is any doubt about the accuracy of the display wind direction, repeat the linearisation & alignment calibration procedures.

Operation

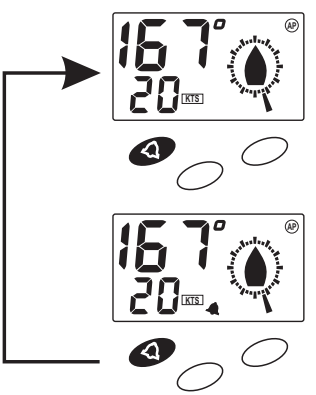
Backlighting On / Off

Simultaneously press the ^ and v keys to turn the backlight on. Repeat this procedure to turn the lighting off.



Wind Speed Alarm On/Off

Press the key to switch the alarm on and off.



Set Wind Speed Alarm

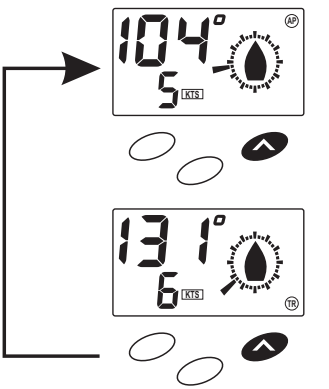
Press and hold the key for 3 seconds.

Use the ^ or v keys to set alarm value.

Press the key to exit.

True or Apparent Wind Display

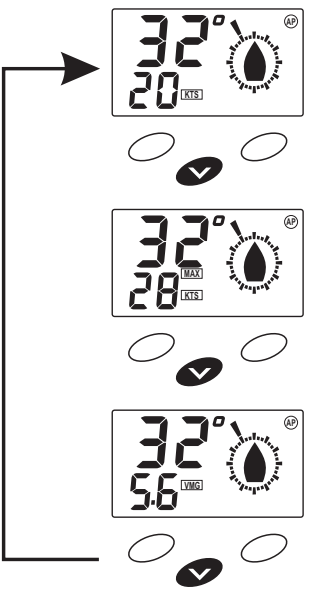
Press the ^ key to switch between True or Apparent wind speed.



Note:
To obtain true wind data the NAVMAN W100 must be provided with NMEA (VHW) data from a speed/log instrument, such as the NAVMAN S100.

Select Speed Function

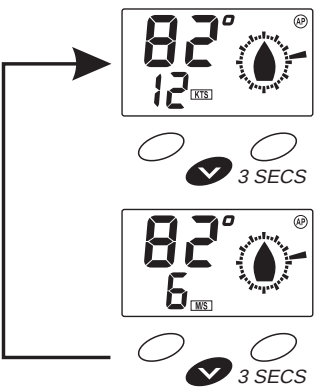
Press the ⌄ key to switch between Wind Speed, Maximum Wind Speed and VMG.



Note:
VMG units of measure are the same as the speed instrument (Knots, MPH, KPH) providing the boat speed data.

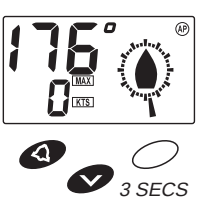
Select Speed Units

Press the ⌃ or ⌄ key for 3 seconds to switch between Knots or Metres/Second.



Reset Maximum Wind Speed

While Maximum Wind Speed is displayed, press and hold the ⌃ and ⌄ keys for 3 seconds to reset the maximum wind speed to zero.



Troubleshooting Chart

No display:

Check DC power connections and DC polarity with voltmeter. Voltage must be between 10.7 and 16.6 volts.

Faulty wind speed or wind direction indication:

1. Possible defective Masthead Cable
2. Possible defective Masthead Assembly
3. Possible defective instrument

Remove the Masthead Assembly from the masthead and connect it directly to the instrument red moulded cable. If the indication is normal, the Masthead Cable is defective. If the problem persists, contact your supplier for service.

NOTE: The instrument and Masthead Assembly may be connected directly for linearisation of the repaired or new equipment prior to installation.

No wind speed or wind direction indication

Check the DC power source applied to the NAVMAN W100.

Simulation Mode

At power up, if all the segments display for 5 seconds then the instrument is in simulation mode.

W100 SECONDARY FUNCTIONS

Addendum to manual
(Changing Wind Direction Damping)

SECONDARY FUNCTIONS

Press and hold both the ◁ and ∧ keys for 3 seconds.

Wind direction damping. The damping level is displayed on the lower section of the LCD (d0, d1, d2 or d3). The ∨ and ∧ keys are used to adjust the damping to the required value. To exit press the ◁ key. The damping levl is saved in NVM.

Momentarily press both the ◁ and ∧ keys.

Wind speed calibration. The upper section of the display will show ‘CA’. The lower section will display wind speed. The ∨ and ∧ keys are used to adjust the wind speed to the required value. To exit press the ◁ key. The results of the calibration process are saved in NVM.

Momentarily press both the ◁ and ∧ keys.

Wind vane alignment procedure. The lower section of the display will show ‘CA’. The upper section will display wind direction. The ∨ and ∧ keys are used to align the displayed wind direction with the wind vane. To exit press the ◁ key. The results of the calibration process are saved in NVM.

Press and hold both the ◁ and ∧ keys for 6 seconds. During this period the display will flash. At the end of the 6 second period the display with show ‘LE’.

Linearisation procedure. The lower section of the display will show ‘LE’. The wind vane must be rotated through two complete revolutions to allow the W100 to perform the automatic linearisation process. Press the ◁ key to exit. The results of the linearisation are saved in NVM.