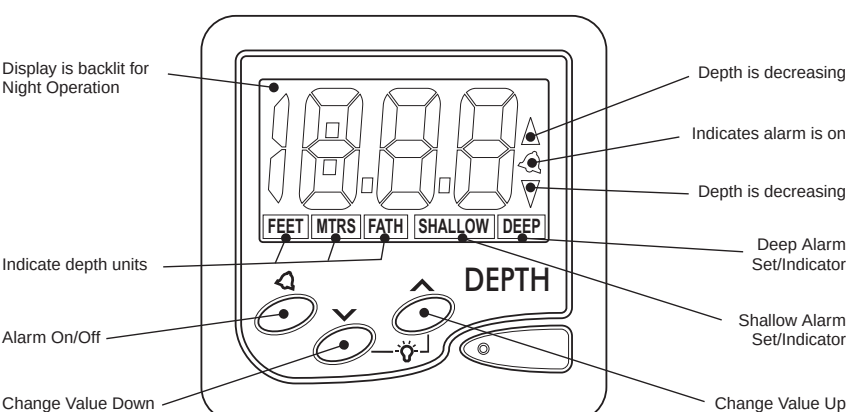
NAVMAN

Contents

Specifications

- **Power supply**
  10.7 to 16.6 VDC 15 mA nominal, 35mA with backlight on.
- **Operating temperature**
  0°C to 45°C.
- **Size of display**
  112 x 112 x 20mm (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 front panel.
- **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).
- **Depth**
  1 to 130 metres, 0.5 to 67 fathoms or 3 to 400ft.
- **Alarms**
  Shallow and deep water. Audio and LCD flag.
- **Display unit selection**
  Feet, metres or fathoms, keypad selectable.
- **Display Damping**
  Three levels keypad selectable.
- **Keel Offset**
  Keel or waterline, ±9.9 ft, ±1.6 fathoms or ±3.0 metres, user resettable.
- **Trend Indication**
  Arrows indicate increasing or decreasing depth trend.
- **NMEA Outputs**
  DPT, DBT.
- **Proprietary Outputs**
  Alarm and Trend arrows.
- **Transducer**
  200 kHz, 600 ohm, 1500pF parallel capacitance.



Installation

Location

The NAVMAN D100 is designed for above or below deck installation. Select a position that is:

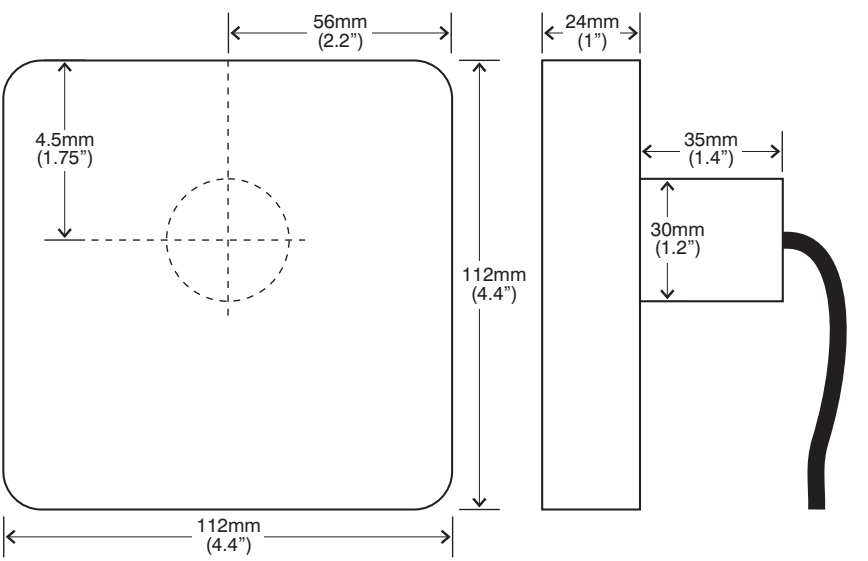
- At least 300mm from a compass
- At least 500mm from any radio
- Easy to read by the helmsman and crew
- Protected from physical damage
- Accessible to electrical cable connections

Mounting

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

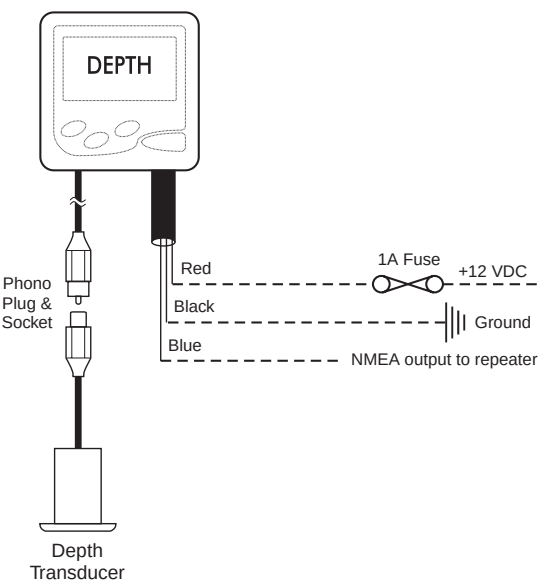
- Drill a 32mm (1.25") diameter mounting hole through the bulkhead.
- Remove the fixing nut. Peel the protective paper off the foam gasket and attach the gasket to the rear of the instrument.
- Insert the instrument through the bulkhead.

  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 RCA phono connector to the depth transducer cable connector. Do not cut or shorten the depth transducer cable. Extension cables are available if the transducer cable is too short.
- If you are not using a repeater or you do not intend to provide NMEA data to another instrument then insulate the bare wire end of the blue cable.



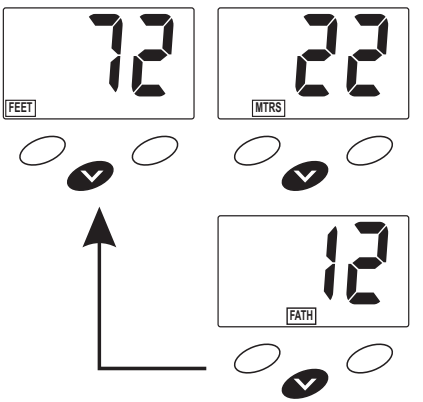
Multiple Instruments

The NAVMAN D100 may be used as an individual instrument or connected with a number of other 100 series instruments to the 100 series repeater or to other instruments accepting NMEA 0183 data.

Operation

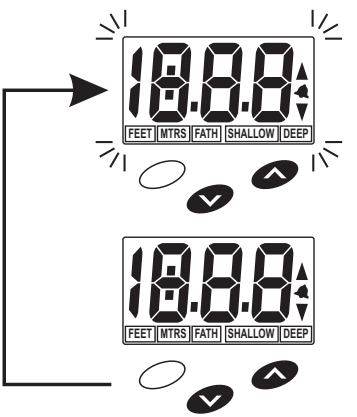
Select Units

Use the ^ or v key to cycle through the units of measure of feet, metres and fathoms.



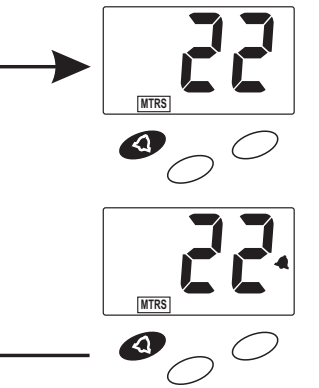
Backlighting On / Off

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



Depth Alarm On / Off

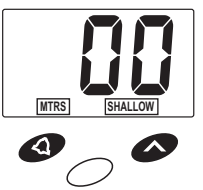
Press the key to turn the alarm on or off. The bell symbol indicates the alarm is on. The bell will flash when the alarm is activated.



Setting Alarms

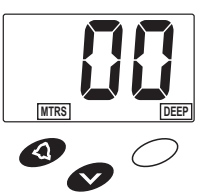
The shallow water alarm sounds when the depth falls below the selected value. The deep water alarm sounds when the depth exceeds the selected value. When the alarm is activated the beeper will sound continuously and the bell alarm symbol will flash.

Set Shallow Alarm



Use the ^ and v keys to set alarm value.
Press the key to exit.

Set Deep Alarm



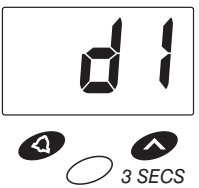
Use the ^ and v keys to set alarm value.
Press the key to exit.

Secondary Functions

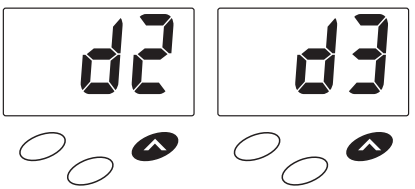
Set Display Dampening

Rough water conditions, schools of fish and thermal layers cause erratic depth readings. Display dampening controls the rate that the displayed depth can change and will help remove these variations. There are three levels of dampening with d1 having the least effect and d3 having the greatest effect. When operating in shallow water or at high speed it is best to use a low level of dampening.

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



Use the ^ and v keys to set the required value.

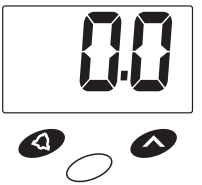


When correct value is displayed, press the ◁ key to exit.

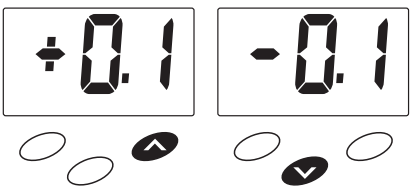
Keel Offset

The NAVMAN D100 will normally display the depth of water below the face of the transducer. You may introduce a keel offset to reduce the displayed depth or a waterline offset to increase the displayed depth.

While in the *Display Dampening* mode, press the ◁ and ^ keys.



Use the ^ and v keys to set the required value.



When correct value is displayed, press the ◁ key to exit.

Simulation Mode

The NAVMAN D100 has a simulation mode.

To enter this mode hold down the ◁ key and then switch on the power. The instrument will remain in this mode even when power is switched off.

Repeat this procedure to exit simulation mode.

Note:
Settings that are made while in simulation mode will remain in effect after returning to normal mode.

Troubleshooting Chart

No display:

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

No depth reading (--) at all depths:

1. Check transducer for growth or multiple coats of paint.
2. Check the transducer cable for cuts and sharp bends.
3. Substitute the transducer with a known good transducer hold it over the side of the boat into the water and see if instrument functions. This isolates cause of problem (transducer or instrument).

Erratic readings (while moored):

Check transducer for growth or multiple coats of paint.

Erratic readings (while underway):

Cavitation (air) under the face of the transducer. Review installation and reinstall if necessary.

When power is applied, display right-hand digit counts up or down:

See previous section on Depth Simulation.

Erratic readings when engine is running:

1. Reroute power and transducer cables away from ignition wires and battery cables.
2. Add feed-through filter capacitor on the positive terminal of the ignition coil.
3. Add alternator whine filter to alternator.
4. Replace spark plug wire with resistive type.

Simulation Mode

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

D100 User Manual Addendum

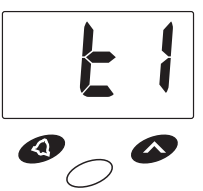
Secondary Functions (cont.)

Transducer Setting

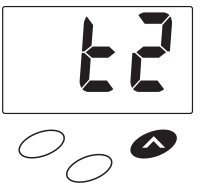
The Transducer Setting function enables the user to optimise the operation of the D100 for the particular transducer installed. Transducer performance varies widely, larger diameter transducers produce strong signals resulting in improved deep water performance but can suffer from reduced shallow water performance, due to transducer ringing. Smaller transducers produce the opposite effect, with improved shallow water performance and reduced deep water performance.

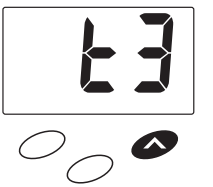
There are three values of transducer settings (1 to 3). The lower numbers improve the shallow water performance and may produce reliable readings to below 3 feet. It is recommended to use the lowest number possible if shallow water performance is important. It must also be noted that in situations where the D100 is tracking the bottom and displaying a consistent depth but occasionally displaying -- or erroneous depths of 3 to 4 feet, that this generally indicates the transducer setting is too low and should be increased.

While in the Keel Offset mode, press the ◁ and ^ keys.



Use the ^ and the v keys to set the required value.





When the correct value is displayed, press the ◁ key to exit.