STANDARD HORIZON

DS41

Digital Depth Sounder

Owner's Manual

- **Standard 2 Inch Installation**
- **Dual Station Operation**
- **NMEA Repeater**
- **Reads in Feet Fathoms or Meters**
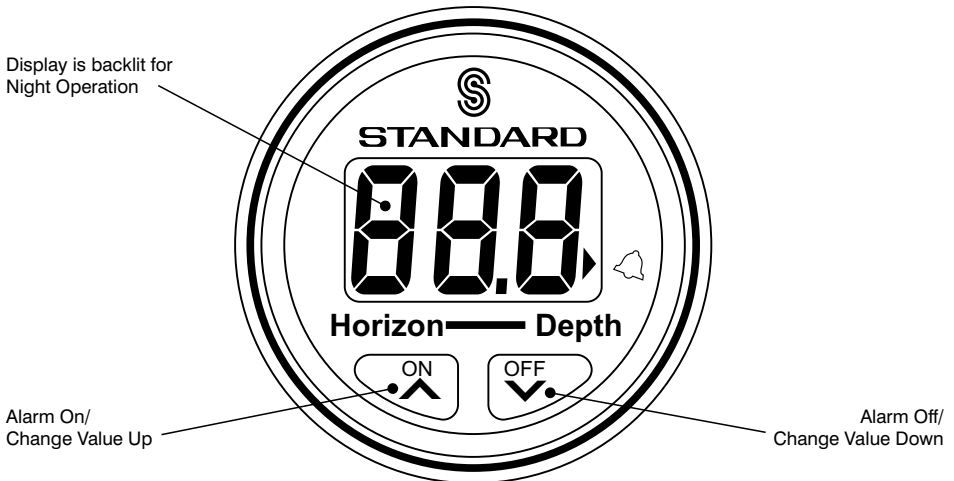- **Adjustable Prop or Surface Offset**
- **Shallow and Deep alarms**

Dual Station Operation

STANDARD

9.6

Horizon —— Depth

ON ▲   OFF ▼

Contents

Specifications

- **Size**
  Mount   2" (51mm) diameter hole
  Depth behind face plate   3.75" (95mm) max.
  Display   3-character LCD

- **Color**
  Black with texture on bezel.

- **Backlighting**
  Red colored diffused lighting for display.

- **Water Integrity**
  Front will withstand direct water spray.

- **Depth/Alarm Range**
  2.0→600 feet
  0.6→184 meters
  0.3→100 fathoms
  (to 9.9 in tenths)

- **Sensitivity**
  0.05mV RMS.

- **Transmit Power**
  36 W RMS nominal at 13.6 VDC.

- **Transducer**
  200 kHz 1900 pF/600 w parallel.

- **Display Updating**
  1 second.

- **Operating Voltage**
  9.5 VDC to 16.5 VDC.

- **Operating Temperature**
  0°C to 50°C (32°F to 122°F).

- **Current Drain**
  150mA max, including internal buzzer.

- **Data Input/Output**
  Single wire data output/Input.
  Dual station mode outputs NMEA DPT
  sentence. Dual station inputs NMEA DPT
  sentence. In the linked mode a dual station
  pair also transfer function settings eg. Alarm
  on/off.

- **NMEA Output**
  DPT.

- **NMEA Input**
  DPT and DBT.

- **External Buzzer Output**
  12VDC Buzzer, 100 mA max.

- **RF Interference**
  <6 dB quieting on any marine radio channel
  (with 3 dB gain antenna) within one meter of
  the instrument. Complies with CE EMC
  standards EN50081-1 and EN50082-1.

Display is backlit for
Night Operation

STANDARD

Horizon ——— Depth

ON

OFF

Alarm On/
Change Value Up

Alarm Off/
Change Value Down

Operation

Whenever power is applied the depth sounder is active and water depth is displayed. If the sonar signal does not show a bottom the display will indicate "- -". This can occur if the water is aerated or the maximum depth is exceeded. Note: The maximum depth decreases as boat speed increases.

Alarms

Two types of alarms can be set; the Deep Alarm and the Shallow Alarm. The Deep Alarm can be set as high as 184 meters (605 feet) while the Shallow Alarm can be set as low as 0.3 meter (1 foot).

Whenever the water depth is greater than the Deep Alarm setting and the alarm is enabled an alarm will sound. The alarm repeats two short beeps and alternates DAL and the water depth on the display.

Whenever the water depth is less than the Shallow Alarm setting and the alarm is enabled an alarm will sound. The alarm repeats a single long beep and alternates SAL and the water depth on the display.
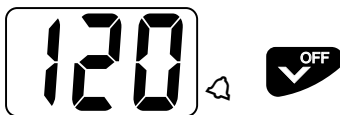
Alarms On/Off

Alarm settings are saved in memory.

To turn the alarm on, press the ∧ (ON) key. An arrow on the lower right corner of the display will show (next to the Alarm Bell), to indicate that the alarms are on.

To turn the alarms off, press the ∨ (OFF) key. The arrow in the lower right corner will extinguish.

Note:

The arrow will flash if alarms are turned ON but the shallow alarm is individually set to OFF. See next section.

## Shallow Alarm

To set the shallow alarm:

1. Press the ∧ key for three seconds. The display will show:

Press for 3 Seconds

2. After a few seconds the display will indicate the current Shallow Alarm depth setting.

3. Use the ∧ and ∨ keys to change the value. If either key is held depressed for more than one second the reading will increase or decrease rapidly.

4. When the alarm is set, exit by pressing both the ∧ and ∨ keys simultaneously. Alternatively, if no keys are pressed for a period of 5 seconds the normal depth display will resume.

Press simultaneously to exit

Note:
If the reading is decreased to below 1.5 feet (or equivalent) the display will show OFF and the alarm will be disabled. The alarm can also be disabled by pressing both the ∧ and ∨ keys for 5 seconds. The word OFF will be displayed but the alarm depth will be retained for future use.

Instrument Setup

Deep Alarm

To set the deep alarm:

1. Press the ∨ key for three seconds. The display will show:

Press for 3 Seconds

2. After two seconds the display will indicate the current Deep Alarm depth setting.

3. Use the ∧ and ∨ keys to change the value. If either key is held depressed for more than one second the reading will increase or decrease rapidly.

4. When the alarm is set, exit by pressing both the ∧ and ∨ keys simultaneously. Alternatively, if no keys are pressed for a period of 5 seconds the normal depth display will resume.

Press simultaneously to exit

Note:
If the reading is increased one step above 600 feet (or equivalent) the display will show OFF ***and the alarm will be disabled. The alarm can also be disabled by pressing both the ∧ and ∨ keys for 5 seconds. The word*** OFF ***will be displayed but the alarm depth will be retained for future use.***

Keel/Surface Offset

An offset may be automatically added to or subtracted from the depth reading to compensate for the location of the transducer. This allows the instrument to indicate the water depth relative to the bottom of the keel or the surface of the water.

To set the keel/surface offset:

1. Apply power while holding down the ∧ key.

Hold down during power up

2. When the unit is on, release the ∧ key. The display will indicate if the current offset is keel offset or waterline offset:
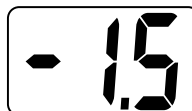

Hull Offset (Depth below the keel)

Surface Offset (Depth below the surface)

3. After 5 seconds the display will indicate the current offset.

Note:
A negative offset is used to display depth below the keel and a positive offset is used to display depth below the surface.

4. Use the ︿ and ﹀ keys to change the value. If either key is held depressed for more than one second the reading will increase or decrease rapidly.

5. The offset can be programmed in 0.1 unit steps from -9.9→9.9 feet (or equivalent). When programmed for a negative offset, '-' will be indicated on the left hand side of the display.

6. To display depth below the keel enter the vertical distance between the bottom of the keel and the depth trasnducer as a <u>negative</u> value.

7. To display depth below surface enter the vertical distance from the waterline to the depth transducer as a positive number (no negative sign).

8. To exit this mode, press and hold both the ︿ and ﹀ keys simultaneously. Alternatively, if no keys are pressed for a period of 5 seconds normal depth display will resume.

Press simultaneously

The display will now indicate the current water depth.

Transducer Setting

A Transducer Setting is provided to allow the D41 to be used with different transducer types. The default setting (=0.0) is used for most transducers.

Some transducers 'ring' after the sonar transmit pulse (just like hitting a bell). This ringing can be interpreted as an echo from a shallow bottom. The setting is used to increase the required level that shallow echoes must meet before they will be displayed.

If the D41 gives repeated false readings of 1.5 to 3 feet depth while in deep water the transducer setting should be increased. Adjust it upward by 0.5 at a time and retest. The range of values is -0.9 to +2.5. If the value is set too high it could cause erratic readings in shallow water.

Changing the Transducer Setting

1. Apply power while holding down the ︿ON key. The display will show either **HOF** or **SOF** for 7 seconds. Continue to hold the key down.

2. The display will show **tdr.**

3. Release the key.

4. After 2 seconds the display will show the Transducer Setting value eg **0.0**

5. Use the ︿ and ﹀ keys to change the value.

6. To exit this mode, press and hold both the ︿ and ﹀ keys simultaneously.

Units of Measure

To select the displayed unit

1. Apply power while holding down the ﹀ key.

Hold down during power up

2. When the unit is on, release the ﹀ key. The display will indicate the current display unit with:

Feet   *Meters*

Fathoms

3. Use the ︿ and ﹀ keys to change the value.

4. To exit this mode, press and hold both the ︿ and ﹀ keys simultaneously. Alternatively, if no keys are pressed for a period of 5 seconds normal depth display will resume.

Press simultaneously

The display will now indicate the current water depth in the selected display unit.

Troubleshooting

No display:

1. Check DC power connections and DC polarity with voltmeter.
2. Check fuse.

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. Check that the transducer connection behind the D41 is firm and free of corrosion.

Erratic readings while moored:

Check transducer for growth or multiple coats of paint.

Erratic readings while moving:

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

**Erratic readings only while engine is running:**

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

What comes with your Digital Depth Sounder

Standard

Mounting Bracket .... With mounting hardware

Extension Power Cord .... 6 feet long with quick-disconnect connectors

Twist Lock Face Plate .... Round
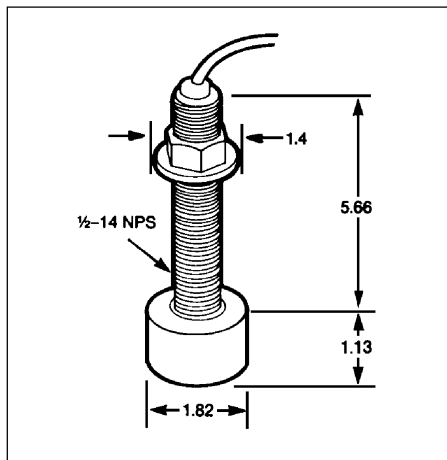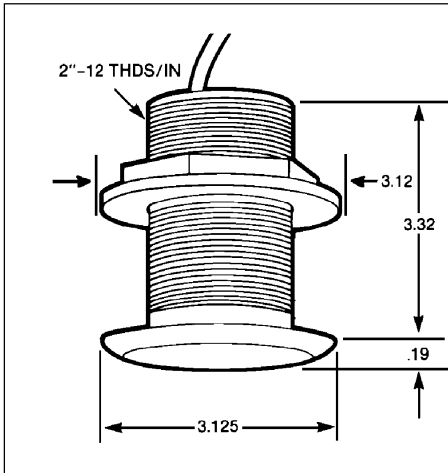
Options
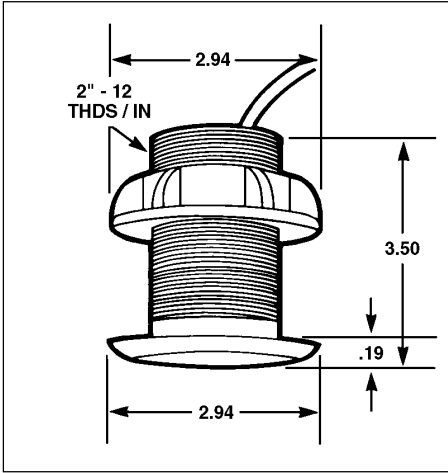
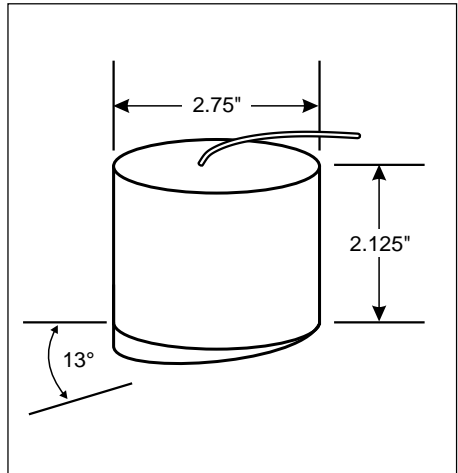**DTS50**
Plastic Low Profile Transducer
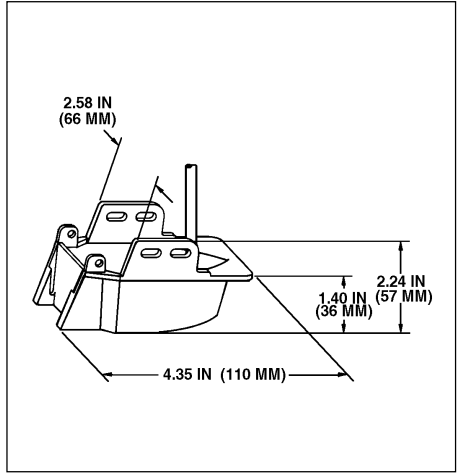
DTS51
Transom Mount Transducer

DTS52
Bronze Long Stem Thru-hull Transducer

DTS53
Bronze Low Profile Transducer

DTS55
In-Hull Transducer

Note: All transducers come with 30 feet of cable.

Replacement Parts

The following parts may be ordered from the Parts Department. To order, call Toll-free Number: 1-800-487-2788.

Square Face Plate .... Part Number 568001012A

Round Face Plate .... Part Number 568002012A

Gasket .... Part Number RRDS410001

Mounting Bracket .... Part Number 160001020A

Mounting Nut .... Part Number 580010123A

Installation

Face Plate Installation

1. To install a face plate:

   a) Attach the face plate to the front panel of the instrument.

   b) Twist the face plate clockwise until tight.

2. To remove face plate, twist it anticlockwise until loose and detach.

Instrument Installation

The instrument can be easily installed in different types of instrument panels. Refer to Figures 3, 4, and 5 for the following steps.

1. Select a suitable location for the instrument. When selecting the location for mounting, the following are recommended:

   - Controls of the instrument must be accessible to the user.

   - Electrical connections must be routed to the boat system as directly as possible, minimising the length of cable where practical.

   - Location should provide as much protection from the elements as possible.

   - The panel for mounting the instrument should be 1/8 to 3/4 inch thick.

   - The space behind the instrument panel must have a depth of at least 3.75 inches. See Figure 1 for dimensions of the instrument.

2. Drill a 2-inch hole on the instrument panel in the selected location.

3. With the mounting bracket removed, insert the instrument into the hole until the back of the face plate is flush with the outside mounting wall.

4. Slide the bracket over the body of the instrument.

Note:
Orient the bracket in such a manner that it does not cover the buzzer.

5. Tighten the mounting nut until the bracket is secure.

2.5"　　**2.5"**

2.5"

INTERCHANGEABLE FACE PLATES

ROUND FACE PLATE　　**SQUARE FACE PLATE**

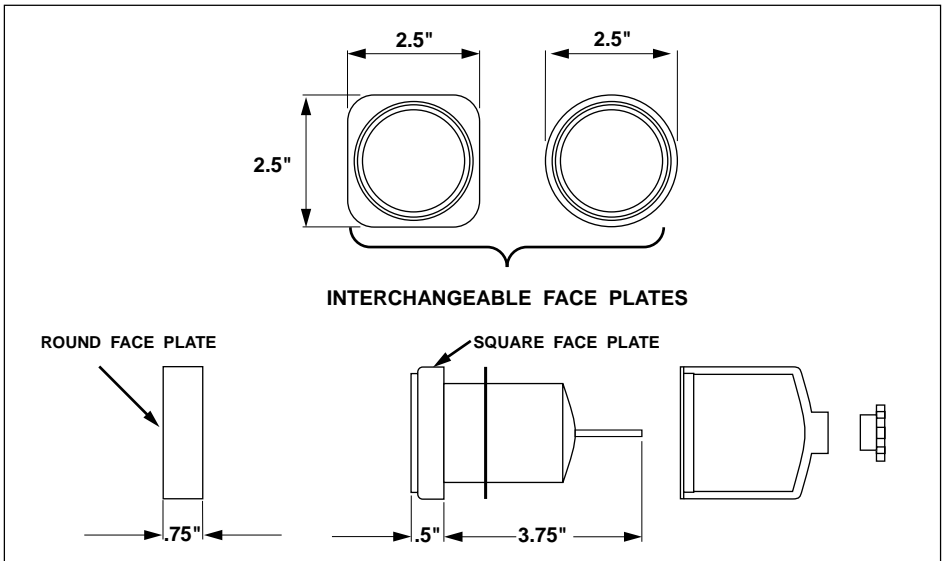**.75"**　　**.5"**　　**3.75"**

Figure 1. Depth Sounder Dimensions

6. Connect the power cord at the back of the instrument to a 12 V power supply which is active whenever the ignition switch is on. The red lead should be connected to the positive terminal of the power supply via a 1 amp fuse or a 1 amp circuit breaker. The black lead should be connected to the negative terminal.

7. Obtain the power from a 12 V source as directly as possible. Avoid power circuits which share loads with ignition, alternators, radio transmitters, etc. Excessive electrical noise associated with such devices may prevent the instrument from operating properly.

8. Connect the RCA phono plug on the transducer cable to the instrument.
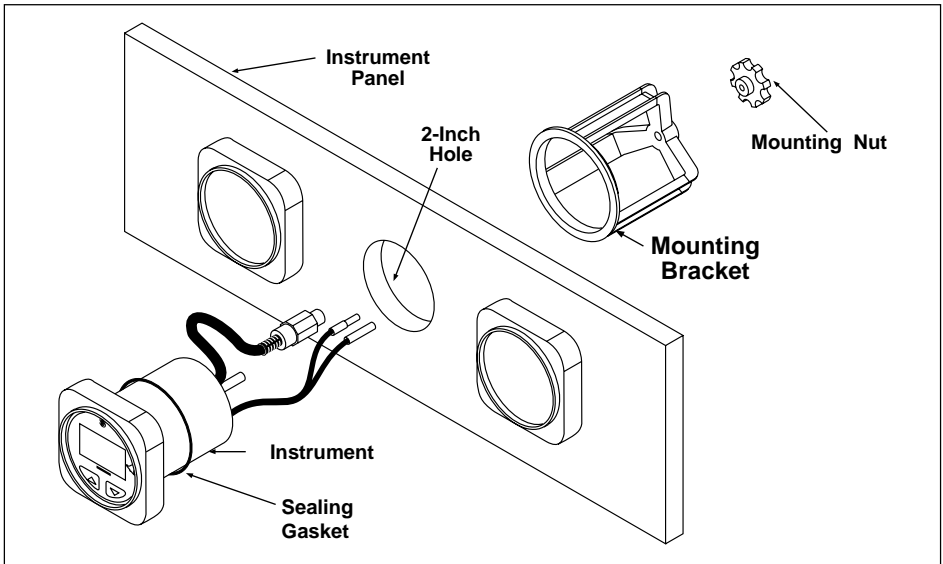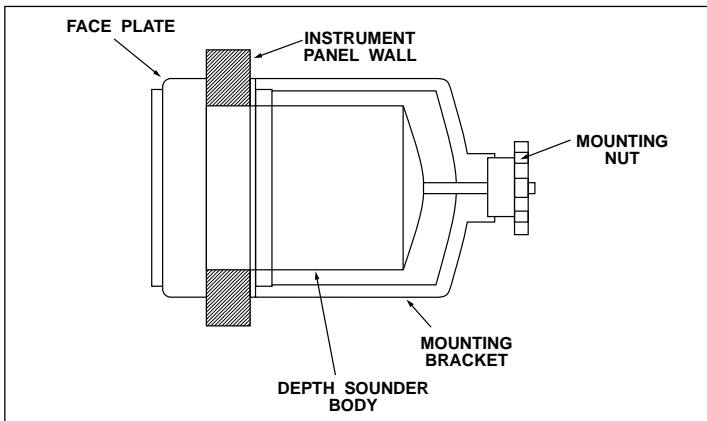

Figure 2. Depth Sounder Installation

Figure 3. Side View of Mounted Depth Sounder

Transducer Installation

General

Correct installation of the transducer is essential for optimum operation of the instrument. Select a location for the transducer using the following guidelines:

• Non-aerated water (bubble-free) water must flow across the face of the transducer at all speeds if good depth performance is to be achieved.

• Never position the transducer directly behind shafts, struts, fittings and paddlewheel speed transducers because water turbulence underneath the transducer face can adversely affect depth performance.

• Keep the transducer cable away from the engine to reduce electrical interference.

• If the boat has bottom paint applied and has been used, inspect for areas where paint erosion has taken place. Erosion is caused by turbulent water and these areas are unsuitable transducer mounting locations.

• It is very important that the mounting location have reasonable access from inside the vessel since the transducer will require tightening from inside the hull.

• Plastic thru-hull transducers should be mounted in fiberglass and metal hulls only. Under no circumstances should they be used in wood hulls. Swelling of the wood may overstress the plastic housing.

• Do not use a fairing block of any type when mounting the plastic low profile transducer. Hauling or impact can cause structural failure of the housing assembly.

• Do not expose a plastic thru-hull transducer to solvents. Strong solvents such as acetone and methylene chloride attack many types of plastics and dramatically reduce the strength of plastic parts. Accumulation of grease or grime may be removed with a damp cloth and mild household detergents.

Note:
Transducer cable may be extended
up to 15 additional feet but depth
performance may be affected.
Use 22 gauge, two-wire, shielded cable,
using RCA/Phono connectors, or use
EX375D 15 foot extension cable.

Sailboats

On sailboats, the transducer should be mounted where the acoustic beam will not be shaded by the keel. A spot forward of the keel is usually best. Try to find an accessible spot with a minimum deadrise angle. See Figure 4.

Powerboats

On IO's transducers mounted close to the engine usually yield good results. On inboards, always mount the transducer well ahead of the propeller. Turbulence from propellers seriously degrades transducer performance. Make sure that the transducer is not shaded by the prop shaft(s).

On displacement hull powerboats (such as trawlers), the transducer should be mounted amidships, relatively close to the keel (centerline of the hull).

On planing powerboat hulls, the transducer should be mounted well aft and close to the keel to ensure that the transducer is in contact with water at higher boat speeds. If the vessel is capable of speeds greater than 25 knots, you may wish to review installation location and operational results on similar boats before proceeding. See Figure 5.
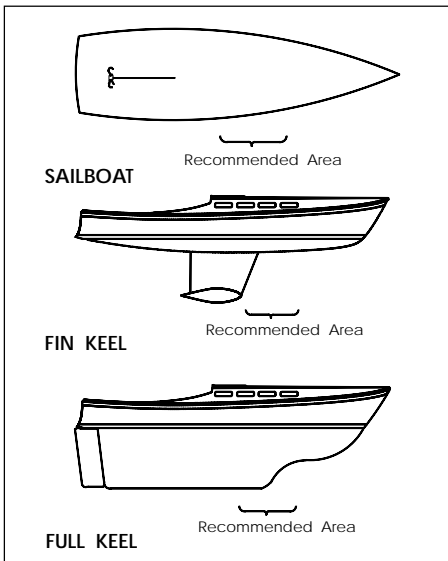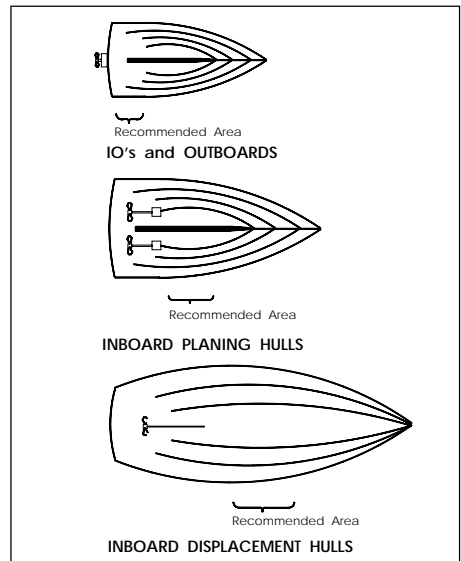
Figure 4. Sailboat Transducer
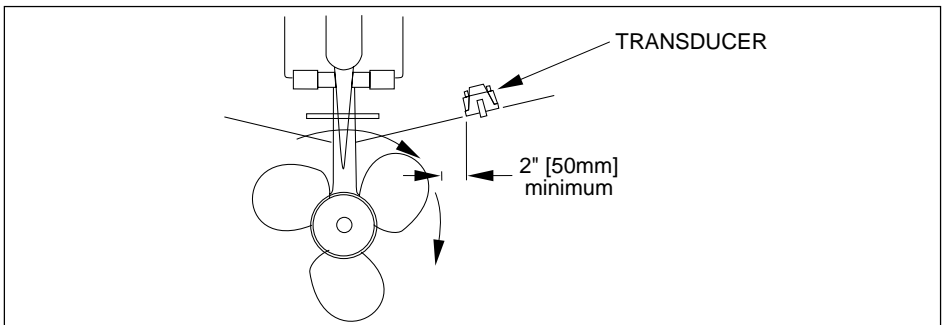
Figure 5. Powerboat Transducer

Figure 6. Transom Mount Transducer Location

Transom Installation

On transom installation, mount your transducer as close to the centerline (keel) of the boat as possible. On slower, heavier displacement boats, positioning the transducer farther from the keel is acceptable.

On two-drive installations, install the transducer between drives.

On single drive installations, mount the transducer on the side of the boat where the propeller blade is rotating down to minimize cavitation. If feasible, mount the transducer at least 2 inches (50 mm) beyond the swing radius of the propeller. See figure 6.

Note:
Do not mount transducer directly behind any strakes, ribs, intakes or outlets for live wells and engine cooling water, and any protrusion that may cause turbulence or cavitation.

In-Hull Installation

Transducer installation inside a solid fiberglass hull may degrade performance of depth sounder. Therefore, this type of installation is not preferred over thru-hull and transom installations.

Should the user desire to perform an in-hull installation, perform the following test to determine its suitability.

1. Fill a thin plastic bag with water and suspend the transducer in the water.

2. Hold the bag against the hull while the boat is moored and underway and check the reading on the instrument. The reading should be relatively constant.

3. The bag may have to be moved around the hull to find the best mounting location. the best location will be close to the centerline , away from any lifting strakes.

To Install:

After determining that the transducer will function inside the hull, construct a water box to be used for installation.

4. Use a PVC pipe with one end threaded and supplied with a screw on cap. The PVC pipe should be 1/4 inch bigger than the bottom face of the transducer.

5. Install the transducer as shown in Figure 7.

6. To receive a proper echo from the bottom, the bottom of the PVC pipe may have to be cut at the deadrise angle of the hull.
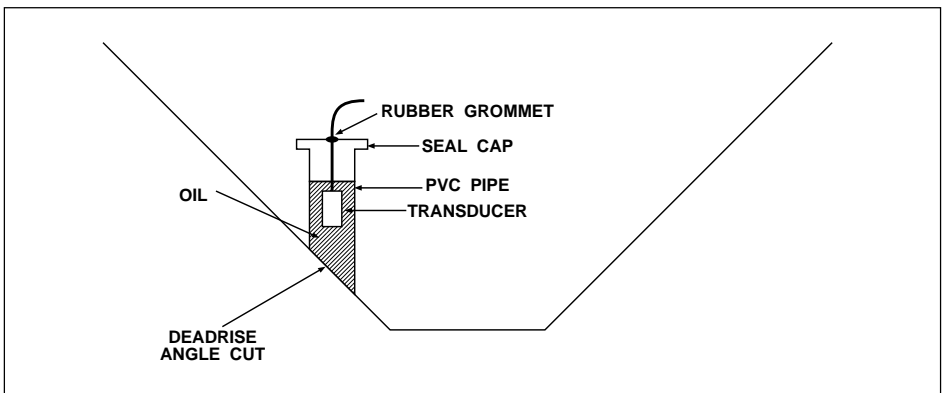

Figure 7. In-Hull Installation

Appendix A – Dual Station Operation

Multiple DS41 instruments can be installed on a single vessel. These instruments can be connected together and configured to operate in a dual station configuration. One instrument is designated as a master and all other instruments, connected to it, are configured as slaves. The master device is connected to the depth transducer and determines the water depth. This information is then displayed on all slave devices connected to it. Slave devices do not have transducers connected to them.

The slave devices can be configured to operate as fully functional NMEA repeaters where they display water depth, as displayed on the master device, and share common alarm settings and keel offset values. In this mode the common alarm settings can be changed or activated/deactivated from either the master or slave devices.

Alternatively, the slaves can be configured to operate as independent slaves. In this mode the slaves display the water depth received from the master, but have independent alarm settings and keel offset values.

Note:
The instrument designated as the master device is the only instrument connected to the depth transducer.

See the Wiring Connection section for dual station wiring details. Also see the **Instrument Setup** section for configuration details.

Master/Slave Selection

To select the master/slave mode of operation:

1. Apply power while holding down the ⌄ key.

Hold down during power up

2. When the unit is on. The display will indicate the current display unit:

Ft

example

3. Continue to hold the ⌄ key until the display indicates the current master/slave selection.

Master

Slave

4. Use the ⌃ and ⌄ keys to change the selection.
5. To exit this mode, press and hold both the ⌃ and ⌄ keys simultaneously. Alternatively, if no keys are pressed for a period of 5 seconds normal depth display will resume.

Press simultaneously

Note: When a slave has no depth information, the display will alternate between -- and -SL. This will occur if the master unit has no depth reading or if the data link from the master is inadvertently broken.

Linked or Separate Selection

By default a dual station pair of DS41 instruments automatically keep the following settings the same in both instruments:

> Alarms On/Off
> Alarm Values (Deep and Shallow)
> Keel Offset *(see note)*
> Units of measure *(see note)*

Example: Switching an alarm off on the slave instrument will also switch the alarm off on the master instrument. The reverse also applies, alarms changed on the master will be automatically changed in the slave instrument.

Note: The keel offset and units of measure should only be changed on the Master instrument.

If independant settings are required the link feature can be disabled.

To enable or disable the linked mode:

1. Apply power while holding down the ⌄ key.

Hold down during power up

2. When the unit is on. The display will first indicate the current display unit:

Example

3. Continue to hold the ⌄ key. The display will indicate the current master/slave selection.

Slave

4. Continue to hold the ⌄ key until the display indicates the current linked/separate selection.

Linked

Separate

5. Use the ⌃ and ⌄ keys to change the selection.

6. To exit this mode, press and hold both the ⌃ and ⌄ keys simultaneously. Alternatively, if no keys are pressed for a period of 5 seconds normal depth display will commence.

Press simultaneously

Note:
This setup procedure applies to the master device and all slave devices. For separate operation all devices, including the master, must be set to Separate mode. Also, for linked operation all devices, including the master, must be set to Linked mode.
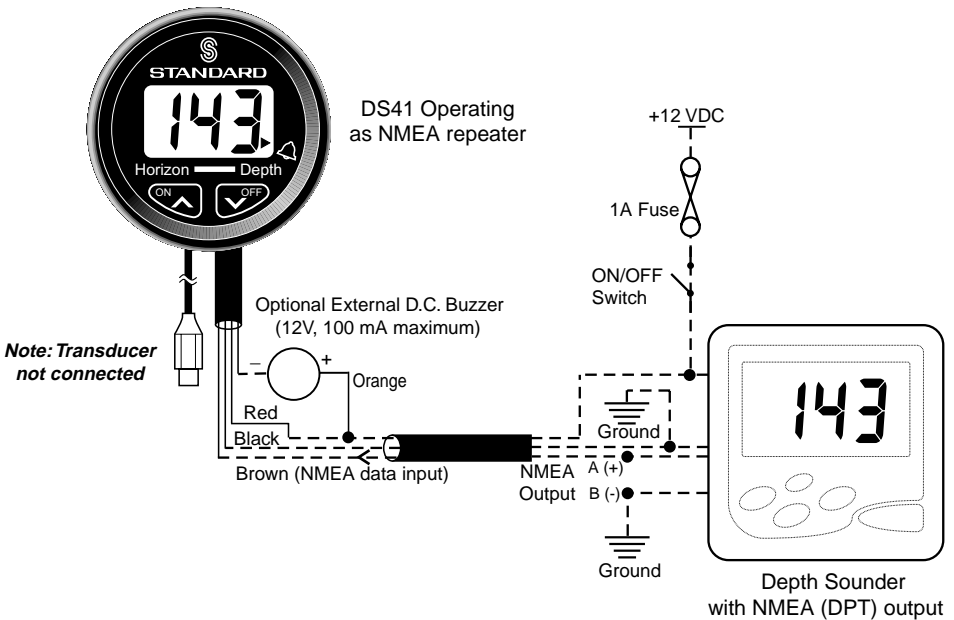
Appendix B – NMEA Repeater Mode

The DS41 can be configured to operate as a NMEA repeater. In this mode it will display depth information from any depth sounder outputing DPT or DBT NMEA depth data (no other NMEA depth sentences are supported).

Notes:

1) The only information displayed from the DPT and DBT sentence is depth below the transducer. The user must enter keel offset values and alarm settings as required.

2) When a slave has no depth information, the display will alternate between -- and -SL. This will occur if the master unit has no depth reading or if the data link from the master is inadvertently broken.

To set the DS41 to repeater mode:

1. Connect the NMEA data and DC power as shown in the following diagram.
2. Apply power to the instrument and configure it for slave operation as described in the **Instrument Setup** section (Dual Station Operation).

DS41 Operating as NMEA repeater

Note: Transducer not connected

Optional External D.C. Buzzer (12V, 100 mA maximum)

Orange

Red

Black

Brown (NMEA data input)

+12 VDC

1A Fuse

ON/OFF Switch

Ground

NMEA Output A (+) B (-)

Ground

Depth Sounder with NMEA (DPT) output

Free Manuals Download Website

http://myh66.com

http://usermanuals.us

http://www.somanuals.com

http://www.4manuals.cc

http://www.manual-lib.com

http://www.404manual.com

http://www.luxmanual.com

http://aubethermostatmanual.com

Golf course search by state

http://golfingnear.com

Email search by domain

http://emailbydomain.com

Auto manuals search

http://auto.somanuals.com

TV manuals search

http://tv.somanuals.com