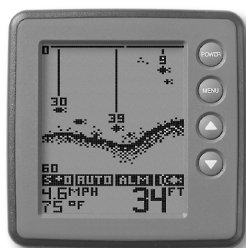


TFX100ID

Operations Manual



THANK YOU

Thank you for choosing Teleflex Sonar, manufactured by Techsonic Industries, for your sonar fishfinder and depthsounder. Techsonic has built its reputation by designing and manufacturing top-quality, thoroughly reliable marine equipment. Techsonic has designed your Teleflex Sonar unit to be trouble free even in the harshest marine environments.

In the unlikely event that your Teleflex Sonar product does require repairs, Techsonic offers an exclusive Service Guarantee - free of charge during the first year after purchase, and available at a reasonable rate after the one-year period. Complete details are included at the end of this manual.

We encourage you to read this operations manual carefully in order to get full benefit from all the features and uses of your Teleflex Sonar product. Also, to register your purchase and help us learn more about you, please fill out the included warranty registration card

WARNING! This device should not be used as a navigational aid to prevent collision, grounding, boat damage, or personal injury. When the boat is moving, water depth may change too quickly to allow time for you to react. Always operate the boat at very slow speeds if you suspect shallow water or submerged objects.

WARNING: Dis-assembly and repair of this electronic unit should only be performed by authorized service personnel. Any modification of the serial number or attempt to repair the original equipment or accessories by unauthorized individuals will void the warranty. Handling and/or opening this unit may result in exposure to lead, in the form of solder.

WARNING: This product contains lead, a chemical known to the State of California to cause cancer and birth defects and other reproductive harm.

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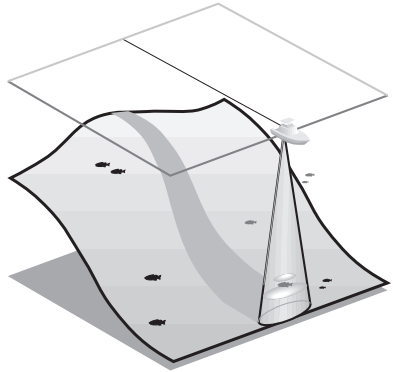
USING THE 100ID SERIES

HOW SONAR WORKS

HOW SONAR WORKS

Your Teleflex Sonar unit uses sonar to locate and define underwater objects, define the bottom terrain, as well as determine distance.

Sonar technology is based on sound waves. Your sonar unit sends out a sound wave signal. With this signal it determines distance by measuring the time between the transmission of the sound wave and when the sound wave is reflected off an object. Your sonar uses the reflected signal to interpret location, size and composition of an object.



Sonar is very fast. A sound wave can travel from the surface to a depth of 600' (185m) and back again in less than $\frac{1}{4}$ of a second. It is unlikely that your boat can "outrun" this sonar signal.

The **100ID** series is a single frequency, single beam unit, and generates a 16° symmetrical cone of sonar coverage at 200kHz. The 16° coverage shows excellent bottom detail with a greater depth capability than wider beams. The sonar return shows the most current information at the right of the screen and draws a history of the information as it scrolls across to the left.

Actual depth capability depends on factors such as bottom hardness, water conditions, and transducer installation. Units will typically read to deeper depths in fresh water than in salt water.

USING THE 100ID SERIES

INTRODUCTION

INTRODUCTION

The **100ID** series is easy to use. Simply press the **POWER** button, and the unit will automatically locate the bottom, adjust the depth range and sensitivity to an appropriate level, and draw a picture of the terrain beneath your boat. If **POWER** is the only button you press, you will benefit from the advanced automatic bottom tracking capability of the unit. However, if you choose to experiment with the many features and controls the **100ID** offers, you can customize the presentation of information to suit your particular needs. The **100ID** offers a wide variety of settings and types of display, to satisfy any sonar need.

SIMULATOR OPERATION

The **100ID** contains a simulator which allows you to use the unit as if you were on the water. This simulator is invaluable for learning how to operate the many features of the **100ID** unit.

With the unit turned off, press and hold **POWER** until you hear a continuous chirp. This initiates the simulator operation. Your **100ID** will simulate all functions as if it were actually on the water.

To exit the simulator, press **POWER** to turn the unit off. Pressing **POWER** again will power-up the unit for normal operation.

When in simulator operation, the **100ID** unit will respond to control inputs as if it were in actual operation, so feel free to experiment with the many features and functions to customize the **100ID** unit for your particular application.

USING DEPTH OFFSET

Depth Offset adjusts the digital depth readout to show distances approximated from either the waterline, or the lowest point of the hull. This is accomplished by selecting an



Depth Offset at Zero

USING THE 100ID SERIES

USING DEPTH OFFSET

offset value at start up which the unit adds or subtracts to the sonar depth measured from the location of the transducer.

When you turn on the **100ID**, the Depth Offset screen will appear for several seconds to allow time to select your depth offset. Use the UP or DOWN arrows to adjust the setting to yield the desired depth measurement as follows.

Selecting a positive number equal to the vertical distance between the transducer and waterline provides a depth reading approximated from the waterline. This "true depth" is useful for comparing to depth soundings plotted on navigation charts. Use caution when operating in suspected shallow water as many factors such as tide and waves can effect the actual depth.

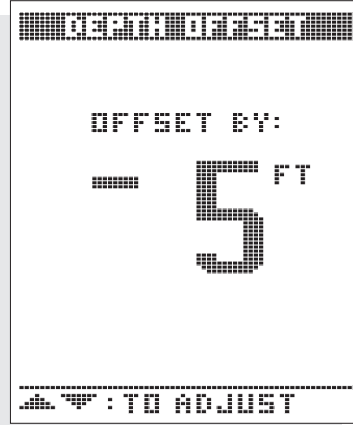
Selecting a negative number equal to the vertical distance between the transducer and lowest point of the hull will give depth readouts from the bottom of the hull, or keel.

Leaving the depth offset at zero will have no effect on the depth readout as measured from the transducer.

Depth Offset has a range of adjustment of -10 to +10 feet, and must be set at start-up each time the unit is powered on.



Depth Offset to Waterline



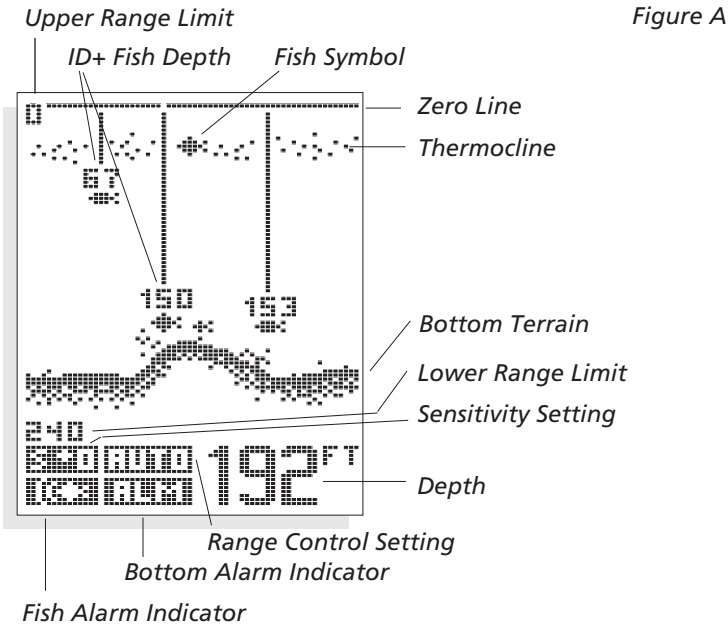
Depth Offset to Keel

USING THE 100ID SERIES

WHAT YOU SEE ON-SCREEN

WHAT YOU SEE ON-SCREEN

The first thing you may notice about the **100ID** unit is the high-resolution LCD display. The LCD display uses super-twist technology, for maximum viewability and is ruggedized for tough shock and vibration endurance. The display can operate at temperatures more extreme than you are likely to encounter.



There are two basic screen layouts for the **100ID**. Figure A shows the default screen layout which does not include speed and temperature readings. If you have purchased the *Speed and Temperature accessory* and it is installed, the screen layout will be slightly different as shown in Figure B.

The number of vertical pixels (picture elements or dots) in a given depth range determines the display resolution, or ability to differentiate targets close to the bottom or other targets. The **100ID** is capable of distinguishing between targets only 6" apart, and show fish within 6" of the bottom.

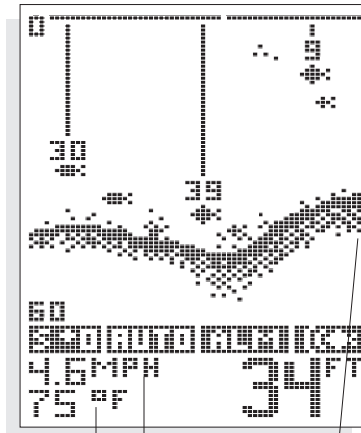
USING THE 100ID SERIES

WHAT YOU SEE ON-SCREEN

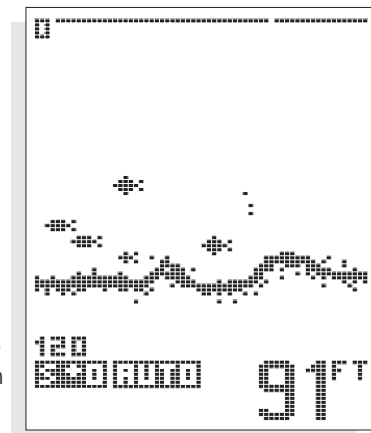
On all screens the horizontal line at the top of the display is the "Zero" line. This represents the surface of the water. The "Zero" line will always have a gap which moves as the screen updates. This gap lets you know that the display is updating even if the bottom terrain remains the same or is not visible on the selected depth range. The farthest right column of information is the most recent information, and it shows what is directly under your boat.

At power-up, the **100ID** locates the bottom and adjusts the depth range to a setting most appropriate for that depth. The bottom will be usually shown about $\frac{2}{3}$ of the way down the display. The Structure ID™ depiction of the bottom will vary in appearance depending on the bottom terrain. If the bottom is very hard and smooth, the bottom depiction will be narrow and dense. If the bottom is mud or soft sand, the bottom depiction will be thick and less dense. This indicates that much of the sonar signal is absorbed by the soft bottom. If the bottom is rugged and varying, such as a rocky bottom, the depiction will be textured and vary in density. Structure, such as submerged trees or brush, or other objects are clearly displayed above the solid bottom return, in varying densities of

Figure B



Boat Speed
Water Temperature
Most current information



Hard Smooth Bottom

USING THE 100ID SERIES

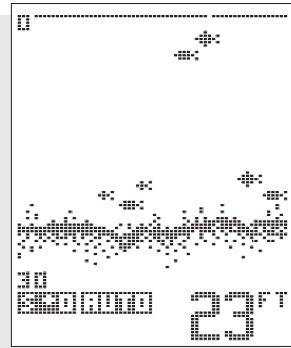
WHAT YOU SEE ON-SCREEN

pixelization. This bottom depiction is useful in locating structure, by comparing relative density as well as depth.

The transmitted sonar signal travels downward, and is reflected back toward the surface by the bottom or other objects for display on-screen. The signal does not stop there - it is reflected downward again by the surface of the water, and a weak "second return" is usually visible if the depth range is sufficient to see it. A second return is shown in the figure below. Some users use this second return as an indicator when setting the sensitivity bias.

If a target is detected between the surface and the bottom, it is displayed as a fish symbol. Depending on the strength of the signal reflected from the object, one of three different size symbols is used. These reflected signals are "normalized" for depth, so that a small fish does not appear to be a large fish if it is close to the boat.

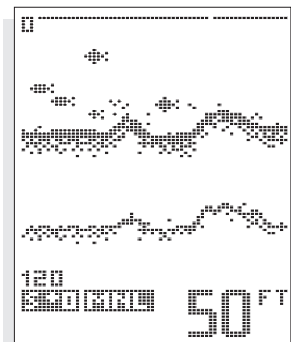
Since some species of fish tend to be better reflectors of sonar than others, the strength of return is not always an accurate indicator of fish size, however, typically the larger the fish, the larger the signal return.



Soft Mud



Rocky Bottom



Second Return

USING THE 100ID SERIES

CONTROL FUNCTIONS

CONTROL FUNCTIONS

The **100ID** unit uses only four buttons to control all functions. When any button is pressed, an audible “chirp” will verify the control input.



POWER, as previously discussed, powers the **100ID** for normal operation. Also, if the unit is powered off, press and hold **POWER** until you hear a continuous “chirp” to enable simulator operation as discussed in “Simulator Operation.” Pressing **POWER** when the unit is in normal or simulator operation will power the unit off.



MENU brings a menu on-screen for adjustment, or if a menu is already present, the next menu in sequence will appear. Menus will go off-screen and normal operation will resume after a short period of time.



UP arrow selects the next larger or next sequential adjustment within the menu. Holding an Arrow button down will cause the unit to continue to make the adjustment, until a limit is reached, and the limit alarm sounds.

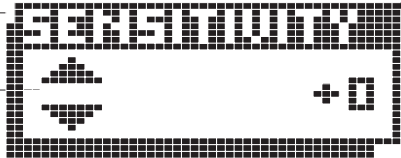


DOWN arrow selects the next smaller adjustment within the menu.

All menus use the same general layout as shown in the sample menu. The heading of the menu is at the top. The area at the bottom is controlled by the **UP** and **DOWN** arrows.

Menu Heading

Arrow Key
Functions



USING THE 100ID SERIES

MENU FUNCTIONS

MENU FUNCTIONS

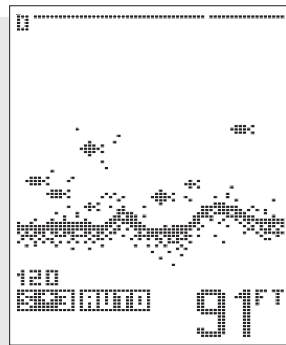
The following section explains each menu in detail, and how these adjustments can be used to obtain the maximum information from the sonar returns.

SENSITIVITY. As the **100ID** receives returned signals, the sensitivity of the receiver is adjusted automatically based on a number of factors such as the depth of the water, and the signal clarity. In murky water, full of debris, the **100ID** will select a lower sensitivity setting. In clear water, where there is little debris to reflect the sonar signal, the sensitivity is set higher.

The Sensitivity menu allows you to “bias” this automatic setting up or down based on personal preference.

You can select a bias of +5 to -5, for 11 different bias settings. A bias setting of “0” has no effect on the automatic function. A +3 setting selects a sensitivity setting three steps higher than the unit would normally select, so even the smallest returns are displayed on-screen.

A setting of -2 sets the sensitivity two steps below what the unit would normally select, so only the largest targets or other returns are displayed.



Sensitivity bias of +3



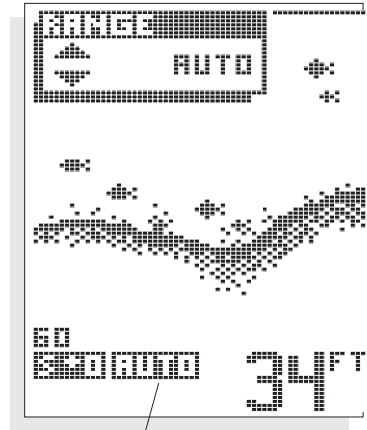
Sensitivity bias of -2

USING THE 100ID SERIES

MENU FUNCTIONS

RANGE. 100ID adjusts the depth range automatically, so the bottom return is displayed at the bottom $\frac{1}{3}$ of the display. This leaves the top $\frac{2}{3}$ to display anything between the surface and the bottom. As your boat moves over deeper or shallower water, the unit adjusts the depth range of the display to keep the bottom return in the same general area on the screen.

However, you may choose to control this range adjustment manually. By pressing the **UP** and **DOWN** arrow buttons you can select manual operation, meaning the unit will no longer adjust the depth range automatically. The depth range selected is also controlled by the **UP** and **DOWN** arrow buttons. Ranges of 0 - 15, 30, 60, 120, 180, 240, 360, 480, and 600 feet can be selected. An on-screen icon indicates whether the unit is in "AUTO" (automatic) or "MNL" (manual) range control.



Auto Range Control Indicator

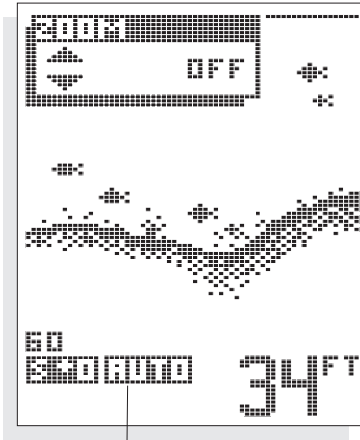


Manual Range Control

If you alter the depth range, Manual operation is automatically selected. This feature is valuable if you are only interested in targets near the surface. The **100ID** will always display the digital depth of the water, regardless of whether the bottom is shown on the selected depth range.

USING THE 100ID SERIES

MENU FUNCTIONS



*Depth Range
Auto Range Indicator*



*Zoom Window Indicator With
current top and bottom ranges*

Zoom. Another form of range control is Zoom. Zoom allows selection of various ranges for full screen viewing. By using the display to view a smaller area, the effective display resolution is increased, and the units ability to separate targets close together is enhanced.

The zoom range is determined by the depth range in use when Zoom is enabled. In shallow water, when the 15' or 30' depth range is used, the zoom range will be 15'. If the 60' or 120' depth range is in use, the zoom range will be 30', and if a 180' to 480' depth range is used, the zoom range will be 60', and if the 600' range is in use, the zoom range will be 60'.

Pressing the **UP** or **DOWN** arrow button enables zoom and adjusts the zoom 'window' to the desired depth. The upper and lower limits are shown on-screen and the digital depth readout will continue to track the bottom even when Zoom is enabled.

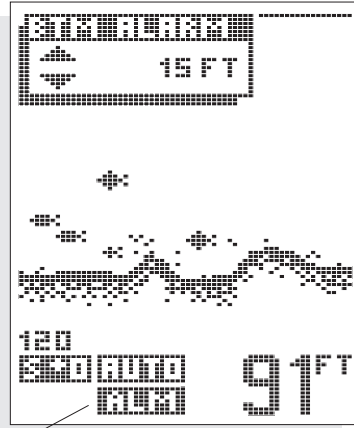
To disable Zoom press the UP arrow button until Zoom turns off.

USING THE 100ID SERIES

MENU FUNCTIONS

BOTTOM ALARM. The 100ID contains an audible alarm to warn you of shallow water depths. This alarm is adjustable from 2' to 99' of depth. To enable the alarm, simply adjust the alarm depth using the UP and DOWN arrow buttons. When the depth of the water beneath your boat is equal to or less than the selected alarm depth, a continuous alarm will sound.

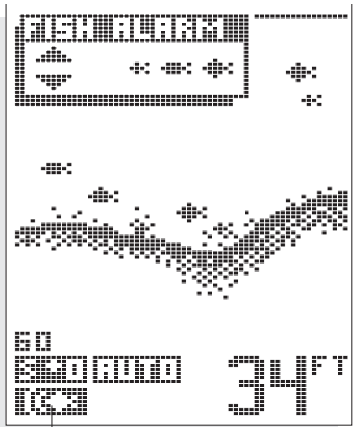
To disable the alarm, either move to deeper water, or use the UP button to turn the alarm off.



Bottom Alarm "ON" Indicator

FISH ALARM. The Fish Alarm alerts you to the presence of fish, or other targets not attached to the bottom, in the water beneath your boat. The Fish Alarm has 3 different settings which correspond to the 3 different size fish targets shown on-screen.

To enable Fish Alarm, use the UP and DOWN arrow buttons to adjust the size return you want to be alerted to: large fish only, large and medium size fish, or all fish. To disable the alarm use the UP button to return to the off position.



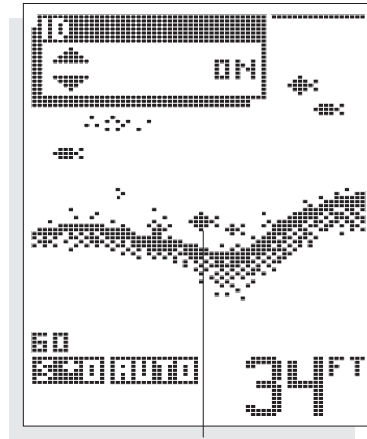
Fish Alarm "On" Indicator

USING THE 100ID SERIES

MENU FUNCTIONS

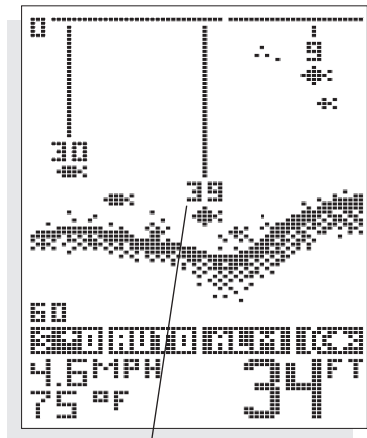
Remember that it is impossible for sonar to determine if a signal return is a fish or some other type of object or suspended debris. Any object not connected to the bottom is normally a fish and is portrayed as a fish symbol. The strength of the reflected sonar signal from a target is a good indicator of the size of the target, and the fish symbol displayed represents the strength of the signal reflected from it.

ID. ID is the automatic identification of target returns based on the strength of the returned signal and other factors. Three options are available: ID "On" displays targets as one of three different size fish symbols.



ID "ON"

"ID+", the default setting, provides more information about the location of the target by attaching depth "strings" showing the digital depth of the target. When there are numerous targets on-screen, not every target depth is shown, to avoid excessive clutter on-screen.

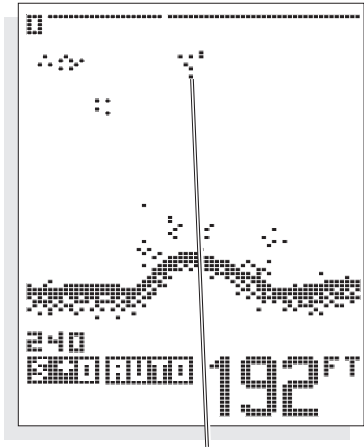


ID+ Fish Depth

USING THE 100ID SERIES

MENU FUNCTIONS

ID "Off" disables the units interpretation of targets, and displays the "raw" sonar information as it is received. Advanced users may prefer this type of presentation, so they can make their own interpretation from the information displayed.

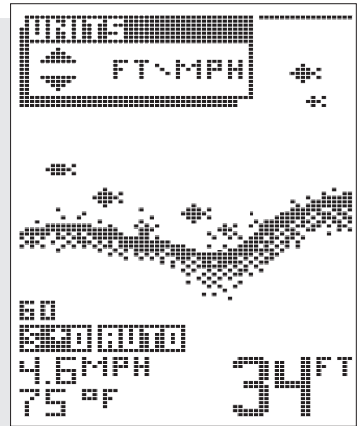


ID "OFF": Raw Sonar

UNITS. The Units menu is used to select the units of measure for the digital speed readout. Two units of measure are available: miles per hour (MPH) or nautical miles per hour (KTS).

The selected unit of measure also affects the distance readout in the Triplog menu. When MPH is selected distance readouts will be statute miles (MI); when KTS is selected the readouts will be in nautical miles (NM).

Note: The optional Speed & Temperature accessory must be connected for the Units menu to be available.



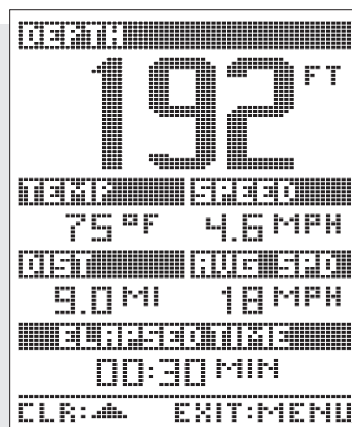
USING THE 100ID SERIES

MENU FUNCTIONS



TRIPLOG. Triplog provides a time/distance calculation, based on input from the optional speed accessory. The timer is started when the unit is first powered on, and distance information is collected to provide elapsed distance since power-up, and the average speed. To enable the Triplog display, press the **UP OR DOWN** arrow button.

Triplog can be reset at any time by pressing the **UP OR DOWN** arrow button. Press **MENU** to return to the normal screen.



Triplog On

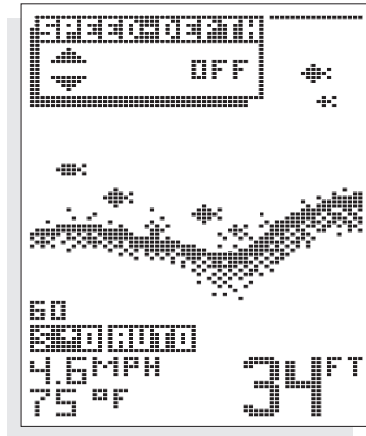
Note: *The optional Speed & Temperature accessory must be connected for the Triplog menu to be available.*

USING THE 100ID SERIES

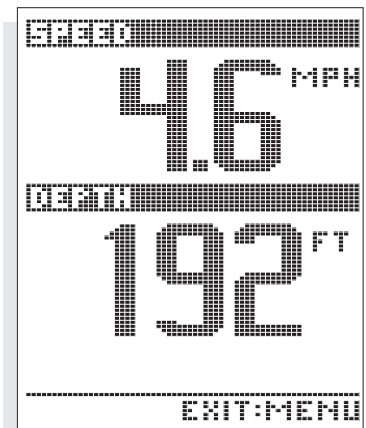
MENU FUNCTIONS

SPEED-DEPTH. The Speed-Depth menu controls the display of a full screen digital readout for boat speed and depth.

To view the Speed-Depth screen, use the **UP** or **DOWN** arrow to show the full screen display. The current boat speed is displayed at the top the screen, and current depth at the bottom. At any time you can return to the normal sonar view by pressing the **MENU** button.



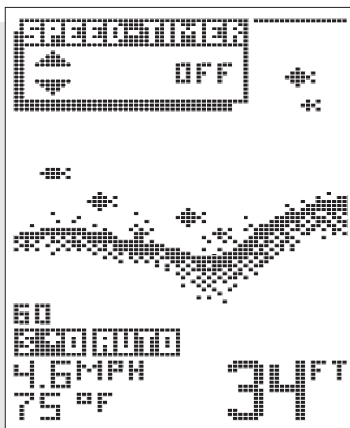
Note: The optional Speed & Temperature accessory must be connected for the Speed-Depth menu to be available.



Speed-Depth Screen

USING THE 100ID SERIES

MENU FUNCTIONS



SPEED TIMER. The Speed-Timer menu controls the display of a full screen digital readout for boat speed and a countdown timer.

To display the Speed-Timer screen, use the **UP** or **DOWN** arrow to show the full screen display. Current boat speed is displayed at top, and the countdown timer at the bottom.

To set the countdown timer, use the **UP** arrow to select one of the four countdown presets: 0, 5, 10, or 15 minutes. The current countdown timer setting is displayed above the digital timer readout. Once you select a setting other than zero minutes, the countdown timer is activated and will alarm when the timer reaches zero. After alarming the timer will begin to count up. Restart the timer by using the **DOWN** arrow.

At any time you can return to normal sonar operation by pressing the MENU button.



Speed-Timer Screen

Note: The optional Speed & Temperature accessory must be connected for the Speed-Timer menu to be available.

MAINTENANCE AND WARRANTY

MAINTENANCE

MAINTENANCE

Your Teleflex **100ID** depthsounder is designed to provide you with years of trouble-free operation with virtually no maintenance. Follow the simple procedures below to ensure that your **100ID** continues to deliver top performance.

If the unit comes into contact with salt spray, simply wipe the affected surfaces with a cloth dampened in fresh water.

When cleaning the LCD protective lens, use a chamois and non-abrasive, mild cleaner. Do not wipe while dirt or grease is on the lens. Be careful to avoid scratching the lens.

If your boat remains in the water for long periods of time, algae and other marine growth can reduce the effectiveness of an externally mounted transducer. Periodically clean the face of the transducer with liquid detergent. Pivoting the transducer up in the bracket may allow better access for inspection or cleaning.

If your boat remains out of the water for a long period of time, it may take some time to wet the transducer when returned to the water. Small air bubbles can cling to the surface of the transducer and interfere with proper operation. These bubbles will dissipate with time, or you may wipe the face of the transducer with your fingers after the transducer is in the water.

Do not attempt to repair the **100ID** yourself. There are no user serviceable parts inside, and special tools and techniques are required for reassembly to ensure the integrity of the housing. **Repairs should be performed only by authorized Techsonic technicians.**

MAINTENANCE AND WARRANTY

TROUBLESHOOTING

TROUBLESHOOTING. Many requests for repair received by Techsonic involve units that do not actually need repair. If you have trouble with your **100ID**, consult the following troubleshooting guide before contacting Techsonic.

1. Nothing happens when I turn the unit on.

Check the power cable connection and fuse. Be sure the power cable is properly connected - red lead to 12 VDC positive, black lead to negative. Often a fuse can appear to be good when in fact it is not. Check the fuse with a tester, or replace it if in doubt.

2. There is no bottom reading on the display when I press the power button.

Ensure that the transducer is properly attached to the 100ID unit. Also, make sure that the transducer is fully submerged in the water, and that the water depth is not in excess of the unit's capability.

3. When in very shallow water, I get gaps in the bottom reading or the depth range continuously changes to deeper ranges.

The 100ID is not able to operate in water 12" or less.

4. The unit is powered before I press power, and it won't turn off.

Check the transducer cable - if the outer jacket has been cut and the cable is touching metal, you will need to repair it with electrical tape. If you can't find a problem with the cable, disconnect the transducer from the unit to see if the problem is corrected. If so, the problem is with the transducer cable.

5. I get gaps in the reading at high speeds.

Your transducer requires adjustment. If the transducer is transom mounted, there are two adjustments available to you - height, and running angle. Make small adjustments and run the boat at high speed to determine the effect. It may take several tries to optimize high speed operation.

6. My unit loses power at high speeds.

Your Teleflex Sonar unit has an over-voltage protection which turns the unit off when input voltage exceeds 17 volts DC. Some outboard motors do not effectively regulate output voltage and can produce electrical output in excess of 17 volts at higher engine speeds. Pressing POWER when the output voltage returns to the required level will restore your unit.

MAINTENANCE AND WARRANTY

ONE YEAR WARRANTY

7. The display shows many black dots at high speeds and high sensitivity settings.

What you are seeing on-screen is interference, normally caused by cavitation, or air bubbles in the vicinity of the transducer. Often the propeller is the cause, and adequate separation between the transducer and the propeller is necessary.

8. The bottom reading disappears during a hard turn.

This is normal as the transducer comes out of the water, and will correct itself when the turn is complete.

9. The screen begins to fade out. Images on the screen are not as sharp and clear as normal.

Check your battery to see that it's fully charged - the 100ID will not operate on less than 10 VDC.

TECHSONIC ONE YEAR FULL WARRANTY

First year repairs (from original date of purchase) on your 100ID are absolutely free. This does not include physical damage to the unit or its accessory items. Any modification or attempt to repair the original equipment or accessories by unauthorized individuals will void the warranty. Return the warranty registration card and retain your bill of sale for warranty verification. Accessories not manufactured under the Techsonic Teleflex Sonar trade name are not covered by our warranty.

The customer is responsible for shipping charges to Techsonic.

This warranty applies to the original purchaser only.

This warranty is in lieu of all other warranties expressed or implied and no representatives or persons are authorized to provide for any other liability in connection with the sale of our products. Techsonic reserves the right to perform modifications or improvements on its products without incurring the obligation to install the changes on units previously manufactured, sold, delivered, or serviced.

THIS IS A FULL WARRANTY AS DEFINED BY THE FEDERAL WARRANTY ACT, EFFECTIVE JULY 4, 1975.

MAINTENANCE AND WARRANTY

SERVICE POLICY

SERVICE POLICY

This Service Policy is valid in the United States only. This applies to Teleflex Sonar units returned to our factory in Eufaula, Alabama, and is subject to change without notice.

All repair work is performed by factory-trained technicians to meet exacting factory specifications. Factory serviced units go through the same rigorous testing and quality control inspection as new production units.

Even though you'll probably never need to take advantage of our incredible service guarantee, it's good to know that we back our units this well. We do it because you deserve the best. We will make every effort to repair your unit within three working days from the receipt of your unit. This does not include shipping time to and from our factory. Units received on Friday are usually shipped by Wednesday, units received Monday are usually shipped by Thursday, etc.

We reserve the right to deem any product unserviceable when replacement parts are no longer reasonably available or impossible to obtain.

After the original warranty period, a standard flat rate service charge will be assessed for each repair (physical damage and missing parts are not included). Please call our Customer Support Department to verify the service charge for your unit.

If shipping charges are not prepaid, the unit will be returned C.O.D. If you are experiencing problems related to bottom or depth readings, please send your transducer along with your unit when sending for repair.

MAINTENANCE AND WARRANTY

CUSTOMER SUPPORT

CUSTOMER SUPPORT

If you have any questions, call our Customer Support Hotline:

1-800-747-9329

Throughout the U.S. and Canada, hours are Monday-Friday, 8:00 a.m. to 5:00 p.m. Central time.

If after reading "Troubleshooting" you determine your unit needs factory service, please attach a description of the problem and send it with the unit to the address below.

If you are including a check, please attach it to the unit.

**Techsonic Industries Inc.
Service Department
108 Maple Lane
Eufaula, AL 36027
USA**

SPECIFICATIONS

Operating Frequency	200 kHz
Power Output	250 Watts (RMS) 2000 (Peak to Peak)
Area of Coverage	16° @ -10db
Power Requirement	10-16 VDC
Display	Super Twist LCD
LCD Matrix	100 x 64
Viewing Area	2.90" x 2.35"
Mounting	In Dash
Unit Size	4.38" square by 4.4" total depth
Unit Size On Dash	4.38" H x 4.38" W x .80" D,
Unit Dimensions, area needed under dash	3.65" D, 3.5" dia. hole
Transducer (Standard)	XHS-6-16
Transducer Cable Length	20'
Depth Ranges	15', 30', 60', 120', 180', 240', 360', 480' & 600'
Zoom Ranges	7', 15', 30' & 60'

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