In-Dash Digital Depth Gauge

operations manual

TFXIDD

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.*

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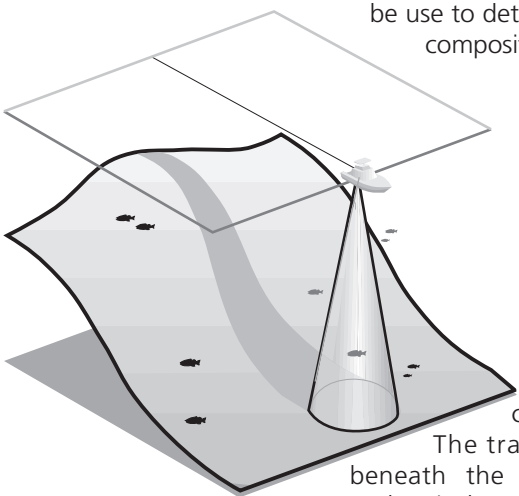
HOW SONAR WORKS

Sonar uses sound waves to determine the presence and location of underwater objects. The time measured between the transmission of the sound wave, and the reception of any reflection can be used to determine distance. Analysis of the reflected signal can also be use to determine location, size, composition, etc.



Digital depth gauges consist of two primary components: the sonar unit and the transducer. The sonar unit contains the transmitter and receiver, as well as the user controls and display. The transducer is mounted beneath the water surface and converts electrical energy from the transmitter into mechanical pulses or sound waves. The transducer also receives the reflected sound waves and converts them back into electrical signals for display on the sonar unit.

The transmit and receive cycle is very fast. A sound wave can travel from the surface to a depth of 240' and back again in less than ¼ of a second; so it is unlikely that your boat can "outrun" this sonar signal.

As the digital depth gauge transducer receives sonar signals, it converts them to a digital depth that is displayed on your digital depth gauge. The depth reading is continuously updated as you travel across the water.

Easy-to-use controls on the digital depth gauge allow you to set the SHALLOW ALARM or DEEP ALARM for an audible alert when the boat is in extreme shallow or deep water.

The liquid crystal display (LCD) offers sharp viewing, even in bright direct sunlight, and is continuously lit for nighttime operation.

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

USING THE DIGITAL DEPTH GAUGE

WHAT YOU SEE ON-SCREEN

WHAT YOU SEE ON-SCREEN

Figure 1

The digital depth gauge uses a backlit 7-segment display in conjunction with a 3-button keypad to control all user functions. At initial power-up, the unit will begin normal operation and display the digital depth and the units of measure. Figure 1 shows a typical view you might see on-screen at initial power-up.

CONTROL FUNCTIONS

The digital depth gauge uses 3 buttons to control the Shallow Alarm, Deep Alarm, Keel Offset, and Units of Measure function. While in normal operation, pressing the SET button selects a Function and blinks its corresponding indicator on the display. Once a Function has been selected it may be adjusted by pressing the UP and Down arrow buttons to adjust the setting. Further presses of the SET button will sequentially select the other functions for adjustment. All user settings are remembered by the digital depth gauge, even when powered off.

When in an active function, a single press to an arrow button will result in a single incremental adjustment. Pressing and holding an arrow button will sequence through a range of adjustments. If no adjustment is made for 5 seconds, the unit will return to normal operation.

USING THE DIGITAL DEPTH GAUGE

CONTROL FUNCTIONS

Shallow Alarm

The SHALLOW ALARM function can be set for depths ranging from 1 to 20 feet and sounds an alarm when the depth is less than the setting.

Figure 2

From normal operation, pressing SET once will display the SHALLOW ALARM setting and blink the "SHALLOW" icon. The UP ARROW will activate the SHALLOW ALARM and also increase the selected value. The DOWN ARROW will reduce the value. Hold the UP ARROW until you reach the desired depth setting.

Figure 3

Note: The maximum SHALLOW ALARM setting can not meet or exceed the current DEEP ALARM setting.

After your selection is made, the unit will return to normal operation after 5 seconds. The "SHALLOW" icon should now be visible (Figure 4).

"SHALLOW" icon
Figure 4

If the depth of the water is less than the selected value, the alarm will sound and the "SHALLOW" icon will blink to indicate the alarm. Pressing any button will mute the alarm; pressing SET will mute the alarm and activate the SHALLOW ALARM function for additional adjustment. To permanently turn the alarm off, use the DOWN ARROW to return the display to "OFF".

USING THE DIGITAL DEPTH GAUGE

CONTROL FUNCTIONS

Deep Alarm

Figure 5

The DEEP ALARM can be set for depths up to 99 feet and sounds an alarm when the depth is greater than the setting.

Press SET until the DEEP ALARM function becomes active. This is indicated by the blinking "DEEP" icon. The UP ARROW will activate the DEEP ALARM and also increase the selected value. The DOWN ARROW will reduce the value. Continue to press and hold the UP ARROW until you reach your desired value.

Figure 6

"DEEP" icon

Note: The minimum DEEP ALARM setting can not meet or go below the current SHALLOW ALARM setting.

After your selection is made, the unit will return to normal operation after 5 seconds. The "DEEP" icon should now be visible (Figure 6).

If the depth of the water is greater than the selected value, the alarm will sound and the icon will blink to indicate the alarm. Pressing any button will mute the alarm; pressing SET will mute the alarm and activate the DEEP ALARM function for additional adjustment. To permanently turn the alarm off, use the DOWN ARROW to return the display to "OFF".

USING THE DIGITAL DEPTH GAUGE

CONTROL FUNCTIONS

Units

The UNITS Control Function selects the UNITS of measure for depth readout and alarm functions. The three settings available are Feet, Meters or Fathoms.

Figure 7

Press SET until the UNITS function is activated on-screen. This is indicated by the blinking UNITS icon. Pressing either arrow will allow you to select from the choices. Continue to press an arrow until the desired readout is selected: FT for feet, M for meters, FA for fathoms.

Selected units icon

Figure 8

After your selection is made, the unit will return to normal operation after 5 seconds. The selected units icon should now be visible as shown in Figure 8.

Keel Offset

The Keel Offset function adjusts the digital depth readout to display depth readings from either the waterline or the keel (lowest point) of the boat, instead of from the location of the transducer which is usually somewhere in between. This permits optimum transducer location and depth readouts suited to your needs.

Negative Keel Offset

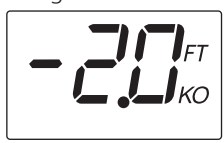


Figure 9

To determine the value to enter into the Keel Offset setting, first decide whether depth from the waterline or depth from the keel is desired. Measurements will need to be made for the location desired.

USING THE DIGITAL DEPTH GAUGE

CONTROL FUNCTIONS

Positive Keel Offset

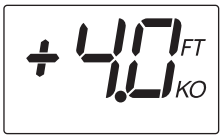


Figure 10

Figure 11

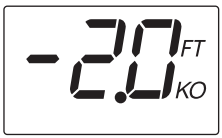


Figure 12

Figure 13
Keel Offset icon

For depth from the keel of the boat, accurately measure the vertical distance between the face of the transducer and keel of the boat. This measurement will then be entered into the Keel Offset function as a negative (-) number. (Figure 9)

For depth measurements from the waterline, accurately measure the vertical distance between the face of the transducer and the waterline of the boat. This measurement will then be entered into the Keel Offset function as a positive (+) number. (Figure 10)

To enable Keel Offset press SET until the KO icon is displayed on the screen. The default setting of the unit is off which is displayed as zero. From the default setting of 0.0, use the DOWN arrow to enter the negative (-) number to set the unit for depth from the keel. Or, from the default setting of 0.0, use the UP arrow to enter a positive (+) number to set the unit for depth from the waterline.

The available settings are +10 to -10 feet. After your selection is made, the unit will return to normal operation after 5 seconds. The "KO" icon should now be visible as shown in figure 13.

Figures 11,12 and 13 depict a scenario where the KEEL OFFSET has been set to -2 feet. Figure 13 shows the return to normal operation with the updated depth readout.

MAINTENANCE

Your digital 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 digital depth gauge 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. Do not use a chemical glass cleaner on the lens. Chemicals in the solution may cause cracking in the lens of the unit.

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 the 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. Never leave your digital depth gauge in a closed car or trunk—the extremely high temperatures generated in hot weather can damage the electronics.

TROUBLESHOOTING

Do not attempt to repair the digital depth gauge yourself. There are no user serviceable parts inside, and special tools and techniques are required for reassembly to ensure the waterproof integrity of the housing.

Repairs should be performed only by authorized technicians.

Many requests for repair received by Teleflex involve units that do not actually need repair. These units are returned "no problem found". If you have a problem with your digital depth gauge, consult the following troubleshooting guide before calling Customer Support or sending your unit in for repair.

1. Nothing happens when I turn the unit on.

Check the power cable connection at both ends. Be sure that the cable is connected correctly to a reliable power source—red lead to positive, black lead to negative or ground. Ensure that the power available is between 10 and 16 VDC. If the unit is wired through a fuse panel, ensure that the panel is powered. Often accessory fuse panels are controlled by a separate switch or the ignition switch. Also, often a fuse can appear to be good when in fact is not. Check the fuse with a tester or replace it with a fuse known to be good.

2. There is no bottom reading visible on the display.

There are a number of possible causes for this condition. If the loss of bottom information occurs only at high boat speeds, then a transducer adjustment is needed. Check the transducer cable connection on the back of the unit and ensure that the cable has not been cut or pinched. Even a small abrasion in the cable can significantly affect performance.

3. When in very shallow water, the unit does not display a continuous depth.

This is normal in extremely shallow water, because the automatic range control can not lock onto the bottom in depths of one foot or less.

4. The screen begins to fade out. Images are not as sharp as normal.

Check the input voltage. The digital depth gauge will not operate on input voltages below 10 VDC.

5. The bottom reading disappears during a hard turn.

This is normal, as the transducer comes out of the water in a hard turn and will correct itself.

SPECIFICATIONS

Operating Frequency	200 kHz
Area of Coverage	16° at -10 db
Power Requirement	10 - 16 VDC
Display	Liquid Crystal
Unit Size	2.42" Dia. x 4.75"
Depth Capability	600'
Mounting	In-Dash 2⅛" hole
Unit Construction	High-Impact Plastic

Function Control and Adjustment

If your Teleflex Digital Depth Gauge is a Rear Mount (RM) it will use a "rocker" or "toggle" type switch to control all functions. While in normal operation, press and hold the switch in any direction to scroll through all functions. A function indicates it is selected by blinking. For example the **KO** (**K**eel **O**ffset) icon will blink, showing that it is the currently selected function. Release the switch and the selected "blinking" function will become active, ready for adjustment. Once a function has been selected it may be adjusted by toggling in either direction - one direction will increase the setting and the opposite direction will decrease the setting. "Entering" a selection is accomplished by not using the switch for 5 seconds and also returns the Teleflex DDGRM to normal operation. Toggling the switch again will start a scroll through functions, stop at the next function you need to adjust, toggle to adjustment value desired and let time out for 5 seconds, setting value and returning to normal operation. All user settings are remembered by the Teleflex DDGRM, even when powered off.

Function Control Switch

Note: Not All digital depth gauge installations use the same type of switch, therefore only general instructions are given on how to use the switch. The switch may also be installed vertically or horizontally. It is up to the user to determine which direction toggles up and which direction toggles down.