



VEXILAR FL SERIES SONAR/FISH FINDERS OWNERS MANUAL

**For Models:
FL-8SE | FL-12 | FL-18 | FL-20**

Contents

Vexilar – Pioneers in Marine Electronics	2	Ice Fishing	
About Flashers	3	Basic Principals	27
Boat Installation		The Ice-Ducer System	28
Unit Installation	4	Seeing Your Lure	29
Power Connection	4	Ice Fishing Systems	
Transducer Installation		Genz Pack	30
Types and Methods	5	Pro Pack II	32
Transom Mounting	6	Ultra Pack	34
In-Hull Mounting	7	Battery Status Indicator	36
AlumaDucer Install	8	Battery Charging	37
Trolling Motor Mounting	10	About Transducers	
Portable Options	11	Cone of Sound	38
Flasher Operation		Dead Zone	39
Basic Use	12	Output Power	39
About the Display	13	Parts and Accessories	
Range Control FL-8se	14	Optional Transducers	40
Range Control FL-18	15	Replacement Parts	41
Range Control FL-12/20	16	Accessories	42
Gain Setting	17	Trouble Shooting	
Interference Rejection	18	Common Problems	44
Low Power Mode	20	Electrical Interference	45
Auto Zoom	21	Product Specifications	
Low Battery Indicator	21	FL-8SE	46
Understanding Zoom	22	FL-12	46
Bottom Lock	24	FL-18	47
Night Mode	24	FL-20	47
Boat Use		Service and Support	
Navigation	25	Contact	48
Bottom Content	25	Warranty	
Vegetation	26	Warranty Information	48



VEXILAR – PIONEERS IN MARINE ELECTRONICS

Established in 1960, Vexilar, Inc. has been a leading innovator of marine electronics in the sport fishing industry for over 45 years. Some of their innovations include:

- The first straight-line paper graph
- The first CRT (television) display
- The first color display
- The first fish alarm
- The first Liquid Crystal Display (LCD)
- The first split-screen zoom flasher

With the recent introduction of the Edge family of liquid crystal sounders, they bring the first true dual frequency/dual transducer sonar systems to the sport fisherman. The FL series three-color flashers continue to lead the way in real-time high definition flasher performance. Quality products backed by world leading customer service are the bedrock of Vexilar, Inc.



A Long History of Vexilar Products

ABOUT FLASHERS

How Sonar Works

SONAR stands for SOund NAVigation Ranging. Sound travels through fresh water at a speed approximately 4920 feet per second. A sonar device (depth finder/fish finder) measures the amount of time a burst of energy travels to the bottom and returns to the surface. This time variation is then displayed on the readout of your sonar. When the depth gets deeper, the time of travel for the sound increases. The burst of energy, known as the pulse, is generated by the sonar’s transmit circuitry. This burst is delivered to the water via the transducer. The return signal, known as the echo, is received by the receiver circuit, also via the transducer. A central processing unit makes the calculations to determine the depth of bottom, as well as other targets.

The sonar signal sent from the transducer will reflect, or bounce off of any object that has a different density than water. This makes it possible to detect not only the lake bottom, but also vegetation and fish.

How Flashers Work

The main sonar portion of a flasher works in the same manner as any other graph or LCD sonar device. The difference is in how the return signal is displayed. Instead of adding the data to a progressive representation of the bottom to construct a history, the data on the flasher display always represents the current time. The display consists of a wheel with indicator lights mounted in one location. The wheel is spun at high speed and the lights turn on and off rapidly to show the sonar readings at the proper locations.

Flasher Wheel Stationary



Lights turn on and off rapidly as wheel is spun



Flasher Wheel Spinning

The Vexilar Advantage

Vexilar’s sonar design offers an optimal balance between the power of the transmitted pulse and the sensitivity of the receiver circuit. Excessive power has been shown to cause premature transducer failure, distortion of the sonar signal, and possibly “spook” fish from the audible noise they hear. Under-powered systems lack the ability to provide good resolution and target distinction. With a well designed system of transmit power and receiver sensitivity, Vexilar provides balanced performance level for a wide range of fishing scenarios.



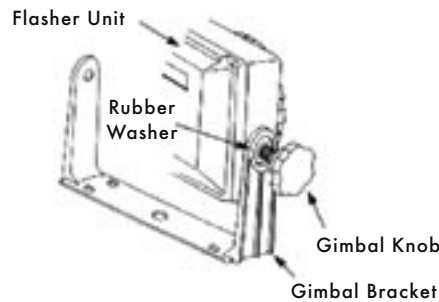
BOAT INSTALLATION

Mounting the Flasher Unit

Take a few minutes to plan your installation. The unit should be mounted in a location where it will be readily visible yet out of the way of traffic. The mounting surface should be fairly flat. Be sure to allow clearance for the cables at the rear of the unit while it tilts and swivels. The unit is weather-proof, not waterproof, so try not to mount it in a location where it will be exposed to the extreme forces of wave impact during severe conditions.

TO INSTALL THE FLASHER UNIT:

1. Obtain four appropriate fasteners for your mounting location.
2. Remove the flasher unit from the gimbal bracket by removing the two gimbal knobs on each side of the unit.
3. Position the bracket in your intended mounting location.
4. Mark the four holes and drill each using the appropriate drill size.
5. Attach the gimbal bracket using your four fasteners. Tighten securely.
6. Replace the flasher unit into the gimbal bracket and tighten the gimbal knobs snugly.



Flasher Unit Assembly

Power Connection

Your flasher unit requires a 12 volt power source to operate. A connection can be made directly to a battery or a connection can be tapped into a boat's electrical system.

- If possible, power your flasher using the main starting battery, not a battery that powers an electric trolling motor.
- When routing the cable, be sure to stay away from or provide cable protection, around areas with sharp metal edges.
- If the supplied power cord is too short, extend it using 18 gauge wire.
- **IMPORTANT:** Be sure to have circuit protection, such as a 1 amp fuse or circuit breaker, placed in the positive line near the power source to protect the wiring.

TO CONNECT THE FLASHER TO POWER:

1. Be sure the power cord is not connected to the flasher.
2. Route the power cable from the flasher location to the power source.
3. Connect the red wire to the positive power source terminal and the black wire to the negative terminal.
4. Connect the power plug to the flasher's power jack.

TRANSDUCER INSTALLATION

Transducer Types and Mounting Methods

There are several different transducer styles used for the various mounting options available to you. Choose the style which best meets the needs for your mounting application.

TRANSDUCER TYPES

- High-Speed Transom: This style is designed to be mounted externally on the transom of your boat. It has a special wedged shape to allow clear water flow when running at high boat speed.
- Puck Style: Puck transducers are meant for attachment to an electric trolling motor. They have a special curved shape and attachment slots just for this purpose. Pucks are also commonly used for in-hull mounting within fiberglass boats.
- AlumaDucer: This style is specially designed for in-hull mounting in aluminum boats. The transducer overcomes the inherent signal loss when shooting through an aluminum hull. The Alumaducer is a Vexilar exclusive.



High-Speed



Puck Style



AlumaDucer

MOUNTING METHODS

- Transom Mounted: the method by which the transducer is mounted external on the back of the boat. The transducer is attached at the bottom of the transom with a small portion of it extending below the hull line. (see page 6)
- In-Hull Mounting: the method by which the transducer is glued to the inside of the hull of the boat. The sonar signal shoots through the hull and into the water. The use of an AlumaDucer is required to achieve a full strength signal when mounting in aluminum hulls. (see page 8 & 9)
- Trolling Motor Mounting: the method by which the transducer is attached to the lower unit of the electric trolling motor. (see page 10)
- Portable Mounting: the solution when easy transducer removal from the boat is desired. Generally, a suction cup bracket is used to attach either a high-speed or puck style transducer to the rear of the boat. (see page 11)

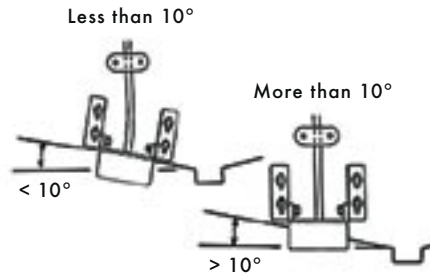
DID YOU KNOW?: If you find that you have bought the wrong transducer for your intended mounting application, you can exchange it with Vexilar. You will only need to pay the retail cost difference, plus shipping, of the transducer style needed. Please call for more information.



Transom Transducer Mounting

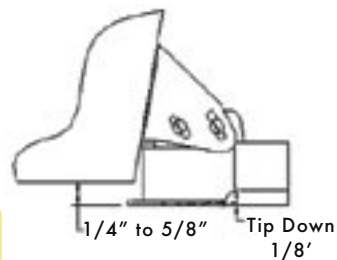
Before you begin the process of installing the transducer, check your hull to find a spot where you'll get a smooth water flow along the bottom of the boat. You want to avoid ribs, rivets, and gouges or scratches in the hull.

To get a true vertical depth reading, the transducer should be mounted parallel to the water line. However, a 10° tilt to either side is acceptable. If the hull is reasonably flat with a dead rise of 10° or less, mount the transducer along the hull bottom. If dead rise is greater than 10°, mount with the transducer aligned level.



TO INSTALL THE HIGH-SPEED TRANSDUCER

1. Assemble the stainless steel brackets to the transducer using the hardware furnished. Do not tighten until final adjustments are made.
2. Place assembly on transom at selected location with the front of the transducer extending 1/2" to 5/8" below the bottom of the boat and with the front part against the transom. The least amount that the transducer extends below the bottom is desired. If too low, spray and turbulence will occur resulting in lost bottom readings.
3. With transducer in place, mark the four slot locations of the transducer mounting brackets. Drill in center of slot outline using a 9/64" (3.5 mm) drill.
4. Fasten the transducer to the transom using the #10 x 3/4" screws, nuts and washer plates.
5. Before final tightening the 4 screws holding the brackets to the transducer, tip the rear edge down approximately 1/8" as shown.
6. Tighten all screws.



CAUTION. Do not use any thread locking compound on the screws. Most products such as LOCTITE® contain chemicals that attack and weaken plastics.

IMPORTANT. There should be no gap between the brackets and the transducer. A wide space between these parts will cause stress on the transducer mounting ears and result in breakage with time.

When running the cable to the sounder, avoid other wiring on the boat, particularly ignition and alternator cables. They can be a source of noise on the sounder display.

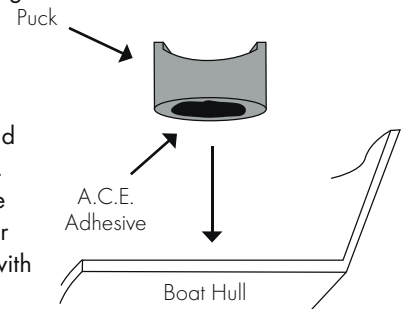
In-Hull Transducer Mounting

Surface preparation and location are the keys to having a good sonar transducer installation that will last for years, so please take a few extra minutes to prepare the surface area. Also, the hull temperature should be at least 60° F while performing the installation.

Select an area in your boat. Ideally, for high speed operation, you will need to place the transducer near the center of the transom area of the boat, which is often near the drain plug. You must attach the transducer to a solid hull area; this means you cannot have double hull aluminum or a foam layer in the fiberglass between the transducer and the water.

TO INSTALL THE IN-HULL TRANSDUCER

1. Prepare the surface area. It is critical you find a smooth, flat spot to place your transducer. Small ridges, bumps or even paint under the transducer will affect the quality of the sonar signal. Your surface preparation kit comes with a Scotch-Bright® pad to smooth any rough areas down to the base material for a secure installation. Use the pad to rough-up the face of your transducer a little too. This will also aid in the long-term quality of your installation.
2. Clean the area. Use the supplied cleaning patch of Isopropyl Alcohol to remove dust and dirt from the target mounting area. Be sure to also wipe clean the face of your transducer. Let dry for a few minutes.
3. Position the transducer. Place the transducer exactly where you want to install it. Apply the four supplied positioning pads around the transducer. The positioning pads are needed to prevent your transducer from drifting off the target area while the A.C.E. adhesive sets up.
4. Mix and apply the epoxy. Follow the mixing directions on the packet of A.C.E. Adhesive and apply the entire packet contents directly to the face of the transducer.
5. Install the transducer. Place the transducer into position. Press firmly and twist slightly back-and-forth to work-out any air bubbles that might have been trapped in the epoxy.



You're done. However, do not power-up your depth sounder for at least 12 hours. Doing so will effect epoxy curing.



AlumaDucer™ Transducer Installation

IMPORTANT PRE-INSTALLATION INSTRUCTIONS

The AlumaDucer mounted in-hull helps many boaters get better performance and protection from damage than ever before using externally mounted transducers. The key to good performance is to understand the dynamics of how water flows under your hull at different boat speeds. Fiberglass boats often have a flat spot or “pad” on the very rear of the boat. This flat area is ideal for transducers to get a good clear reading at high speeds. With aluminum hulls, this area may not be as obvious. Welded, flat bottom Jon boats are often easy to find an area where smooth water without bubbles are flowing down the hull of the boat. Boats with rivets, scratches, and/or dents along their bottom side create more turbulence, so finding an area of smooth water without air pockets can be a challenge, but it is possible in most cases. We highly recommend you test your boat to find the optimal mounting location BEFORE installing the AlumaDucer. Here’s how to do it:

Select an area within one foot of the center keel of the boat and directly in front of the bottom corner of the transom. This area is often near the drain plug. Your goal is to select an area that is between ridges or rivets preferably in the center or towards the driver’s side of the boat. You need to select an area of the hull that does not have a dent or depression that might create a pocket of air while the boat is running at higher speeds. A simple straight edge ruler can be used on the bottom of your hull to ensure you have selected a non-warped area.

MOUNTING LOCATION TESTING

1. Head to your favorite testing waters and launch your boat.
2. Fill the rear bilge area of your boat with about an inch of water.
3. Remove the protective film from the transducer face and place the transducer in the water in the desired position.
4. Connect the AlumaDucer to your depth finder. You don’t need to do any fancy routing of the cable for now.
5. Go for a boat ride. Make sure you get good strong readings at all boat speeds. If not, move the transducer around until you do.

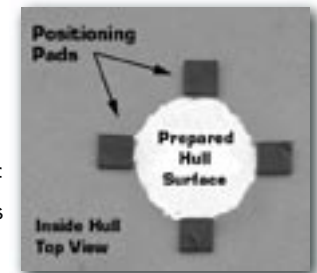
If you don’t have a friend to help drive the boat while you’re moving the transducer around, use a zip lock bag with beach sand in it, or something similar, to keep the transducer face firmly in place on the hull and under the thin layer of water you have in your boat.

Once the “sweet spot” has been found, you simply drain your boat, dry the area thoroughly and install the AlumaDucer by following the instructions on the next page.

Installation Procedures

INSTALLING THE ALUMADUCER

1. Using the supplied Scotch-Brite® pad, remove any paint, dirt or coatings on the aluminum. You MUST be down to the bare aluminum and the surface must be dry. Wipe off all loose dust and dirt.
2. Using the supplied alcohol swab, wipe clean any dust or dirt you created from the target area on the hull and the face of the transducer. Dry the area with a clean paper towel or rag.
3. Set the transducer in the prepared area and place four supplied foam positioning pads around the transducer as shown. This will keep the transducer from “traveling” once the transducer has been positioned.
4. Using the pre-measured packet, mix both elements of the A.C.E. adhesive together, following the directions on the packet. Once thoroughly mixed, you have about 10 minutes to apply this special A.C.E. Adhesive.
5. Remove transducer from the target spot. Apply the mixture to the transducer NOT the boat. Be sure to use all the Epoxy in the packet.
6. Now, simply press the transducer back into the prepared area. Twist it slightly back and forth several times. This is done to make sure no air pockets remain under the transducer.



The special A.C.E. Adhesive will set in about 30 minutes. Try not to move the boat around during this period. The foam cubes you placed around the transducer keep it from drifting from the spot you have selected while the adhesive cures overnight. Do not turn your sonar “on” for 12 hours to ensure a solid connection between the transducer and the aluminum hull.

IMPORTANT: The hull temperature should be at least 60° F for proper curing of the A.C.E. adhesive.



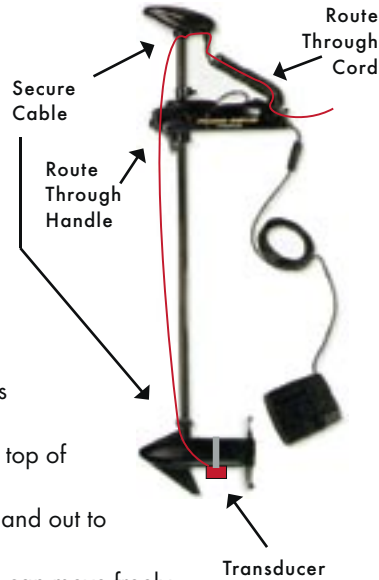


Electric Trolling Motor Mounting

There are two main styles of trolling motors: manual steer and electric steer. The proper mounting method depends on the style of trolling motor.

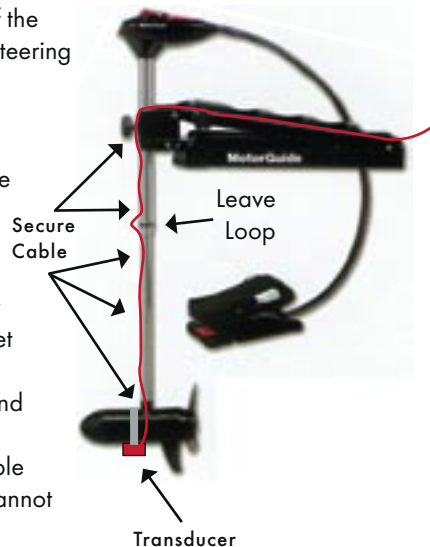
MOUNTING TO ELECTRIC STEER MOTORS

1. Position the transducer on the bottom side of the motor housing as close to the center of the steering rotation as possible.
2. Attach the transducer to the motor using the supplied cable tie.
3. Secure the cable to the lower-most part of the vertical motor shaft.
4. Run the cable through the carry handle on the motor's steering drive motor. (If your motor does not have this, you'll need to come up with an "eye" to keep the cable in place as you stow and deploy the motor)
5. Secure the cable near the motor's head at the top of the vertical shaft.
6. Route the cable down through the "coil cord" and out to your flasher's mounting location.
7. Stow and deploy the motor to insure the cable can move freely with the motor and that it cannot get pinched in any of the motor workings.



MOUNTING TO MANUAL STEER MOTORS

1. Position the transducer on the bottom side of the motor housing as close to the center of the steering rotation as possible.
2. Attach the transducer to the motor using the supplied cable tie.
3. Secure the cable to the lowermost part of the vertical motor shaft.
4. Route the cable up the shaft, securing it every 3 or 4 inches using cable ties or electrical tape. Be sure to leave a loop near the section where the two vertical shafts meet to allow for motor rotation.
5. Route along the motor's mounting bracket and out to your flasher's mounting location.
6. Stow and deploy the motor to insure the cable can move freely with the motor and that it cannot get pinched in any of the motor workings.



Portable Options

A suction cup bracket is an option if you want to quickly install and remove the transducer from the boat.

BK0044

Fits all High-Speed style transducers and allows for readings at speeds above the planing speed of the boat. Dual suction cups offer a secure hold.

IMPORTANT: Suction cups can come loose. Each bracket includes a safety rope. Be sure to take the time to tighten the rope to the bracket and then to the boat leaving as little amount of slack as you can. If the cup(s) come lose, this will keep your transducer and cable out of the propeller.



BK0027

Fits all 2" Puck style transducers. (7°, 9°, 12°, and dual 9°/19°). Offers a secure hold and the ability to point the transducer in a specific direction.



BK0023

Fits the 1" (19°) Puck Transducer. This bracket makes it the smallest portable transducer option available.



Did You Know ? Vexilar does not offer a suction cup bracket to fit the ice fishing style transducers. This is because the Ice-Ducer cable is made to stay soft in very cold temperatures. Therefore, it is very easy to damage in warm temperatures, thus open water use is not recommended.





FLASHER OPERATION

Basic Use

The Vexilar FL series color flashers are great tools for open water and ice fishing. Once you learn to understand the color display, you can apply this knowledge to greatly increase your awareness of what's under the water.

FL SERIES FLASHERS CAN BE USED FOR:

- Determining the current depth at any boat speed.
- Locating fish-holding underwater structure.
- Determining the bottom hardness and transition lines.
- Penetrating thick vegetation to see what's below.
- Finding fish and the fish they feed on.
- Watching your bait and the fish around it.

Operation of each of the flasher models is very straight forward. You simply turn the unit on, select an appropriate depth range setting, and then an appropriate gain level setting. You change the range and gain settings only when the conditions change.

RANGE

Range determines the maximum depth of water in which the flasher can see the bottom. For example, the shallowest range available on all models is 0 to 20 feet. This means that if the water depth is between zero and 20 feet, the bottom will be displayed on the screen. If the water depth gets deeper than 20 feet, you'll want to select a deeper depth range.

DID YOU KNOW ?: It is usually best to select the shallowest depth range possible to see the bottom. This allows the water column below to be represented by the greatest amount of display screen area. This offers the highest resolution, makes things bigger and easier to see.

GAIN

Gain controls the amount of amplification applied to the return sonar signal. Think of gain as your volume control. You turn up the gain to see more of what's below. You turn down the gain to see less of what you don't want to see. The goal is to find a gain level that shows you as much real information as possible, without displaying stray signals of clutter and interference.

INTERFERENCE REJECTION

This feature rejects sonar interference generated by other nearby depth sounders. Interference Rejection, or IR, comes on automatically when you turn the flasher on, but you can adjust the setting if desired.

About the Display

The FL series flasher displays consist of three colors (marks) which appear at various positions on the screen. Understanding what the colors mean, and the position and size of the colored marks, is the key to being able to interpret the information correctly.

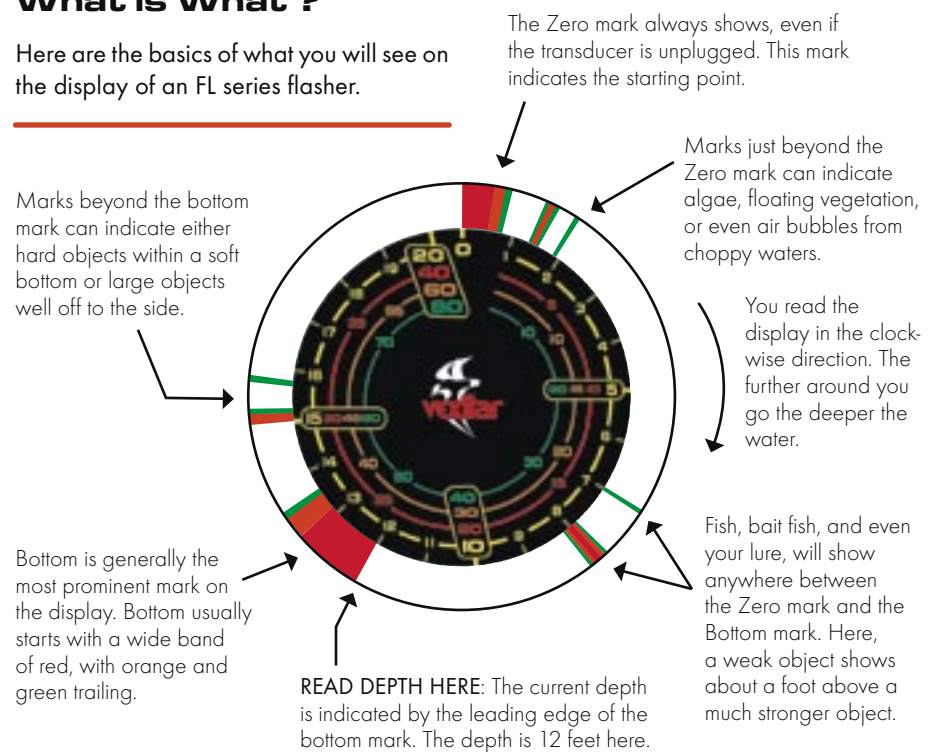
RED = Strong Strength Signals. Strong signals are generally produced by significant underwater objects, such as the bottom, heavy vegetation, and large fish. However, smaller objects, such as bait fish, can display as red if the object is directly under the transducers.

ORANGE = Medium Strength Signals. Medium signals are produced by smaller objects and softer bottom types. Also, medium strength signals can be produced by larger objects in the immediate area around, but not directly under, the transducer.

GREEN = Weak Strength Signals. Weak signals are produced by small objects, such as light vegetation, bait fish, and even air bubbles or aquatic micro marine life. Larger objects off to the sides of the transducer can also be displayed as green.

What is What ?

Here are the basics of what you will see on the display of an FL series flasher.





Setting the Range

FL-8SE

The FL-8SE has six depth ranges in two groups, Shallow and Deep. The Shallow group includes Zero to 20', 40', and 80'. The deep group includes Zero to 30', 60', and 120'. To interpret depth, you multiply the displayed reading by the range multiplier.

Deep Range Group
Look at the inner scale and the right-hand multipliers in yellow



Shallow Range Group
Look at the outer scale and the left-hand multipliers in white

SHALLOW GROUP

- S-1 = Zero to 20 feet. Read the outer white scale directly.
- S-2 = Zero to 40 feet. Read the outer white scale and double the reading.
- S-4 = Zero to 80 feet. Read the outer white scale and multiply by 4.

DEEP GROUP

- D-1 = Zero to 30 feet. Read the inner yellow scale directly.
- D-2 = Zero to 60 feet. Read the inner yellow scale and double the reading.
- D-4 = Zero to 120 feet. Read the inner yellow scale and multiply by 4.

Setting the Range

FL-18

The FL-18 has 5 depth ranges. Zero to 20', 40', 60', 80', and 200'. To interpret depth, you multiply the displayed reading by the range multiplier.

Normal mode selected



In normal mode, read the outer white scale and multiply by the range setting. Here, the range is set to "x1". Bottom is at 15 feet, a fish is at 12 feet, and there is a weak signal at 10 feet.

If the range control was set to "x2", the bottom would be interpreted as 30 feet, the fish at 24 feet, and the green mark at 20 feet.

Reading the depth is the same in LP (Low Power) mode. Reading the depth in AZ (Auto Zoom) or BL (Bottom Lock) mode is discussed on pages 21 - 24



Setting the Range

FL-12 and FL-20

Both the FL-12 and FL-20 have five depth ranges consisting of Zero to 20', 40', 60', 80', and 200'. To read depth, you match the color of the range selected with the depth scale of the same color.



Match the color in which the range knob is pointing to the same colored depth scale. Here, the range is set to 20 feet, which is yellow. To read depth, look at the yellow scale on the flasher display.

If you change to the 40 foot range, you'll look at the red depth scale, which is just inside the yellow 20 foot scale.

For the 200 foot range, look at the outer 20 foot scale, but add a zero to the reading, i.e. 10 feet would be read as 100 feet.

The 20' Low Power range reads the same as the standard 20 foot range, except that using this selection puts the flasher into Low Power Mode, which is discussed on page 20.

Setting the Gain

Gain functions in the way same on all models. However, the FL-8se and FL-18 have a different scale than the FL-12 and FL-20.

GAIN SCALE

- The FL-8se and FL-18 use a zero to ten scale.
- The FL-12 and FL-20 use a Minimum to Maximum scale.



FL-8se / FL-18 Gain Control



FL-12 / FL-20 Gain Control

Gain controls the amount of amplification applied to the return sonar signal. Think of gain as your volume control. You turn up the gain to see more of what's below. You turn down the gain to see less of what you don't want to see. The goal is to find a gain level that shows you as much real information as possible, without displaying stray signals of clutter and interference.

Start at a low gain setting, near minimum. Turn up the gain, if necessary, until you see what you want to see. Generally, gain levels between minimum and one third are adequate for most situations. Higher gain levels should only be required to read in deeper water or to see small objects.

DID YOU KNOW ? Gain can act as a variable cone angle. As you increase the gain level, you can see things further away from the transducer. This can be helpful in uncluttered conditions. If you don't see anything on the screen (other than bottom), turn up the gain temporarily and see if anything shows up. If it does, it could be a fish some distance away from your transducer. Unfortunately, this won't work in cluttered water, such as weedy conditions, because the objects in the center of the cone will get amplified and overlap anything on the outside, making these objects impossible to distinguish.





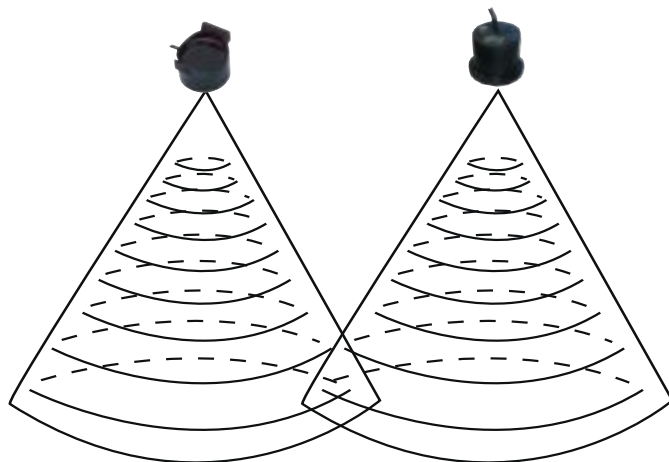
Interference Rejection

The purpose of interference rejection is to reduce cross-talk interference from other nearby depth sounders. This can be very helpful if you have another sounder mounted on your boat running at the same frequency as your flasher. It is also helpful when other fishermen are running sounders operating at the same frequency as your flasher nearby.

Cross-talk interference occurs when the signals sent from one depth sounder are received by another. If the two sounder's frequencies are the same, each unit is unable to differentiate between it's own signals and others. What you see as interference is actually the reading of the other sounder displayed on your screen. The signals can circle around the display or remain stable. Beware of the stable signals. They can lead you to believe the depth is different than it is or that there's a fish hanging below you which really isn't there.

Usually, when you see interference on one sounder, the other sounder will show it too. Therefore, when you use your Interference Rejection to reduce or eliminate the interference on your display, the other sounder will see a similar reduction. This means you can use your Vexilar flasher next to another sounder which does not have the I.R. feature and both sounders can run more clearly.

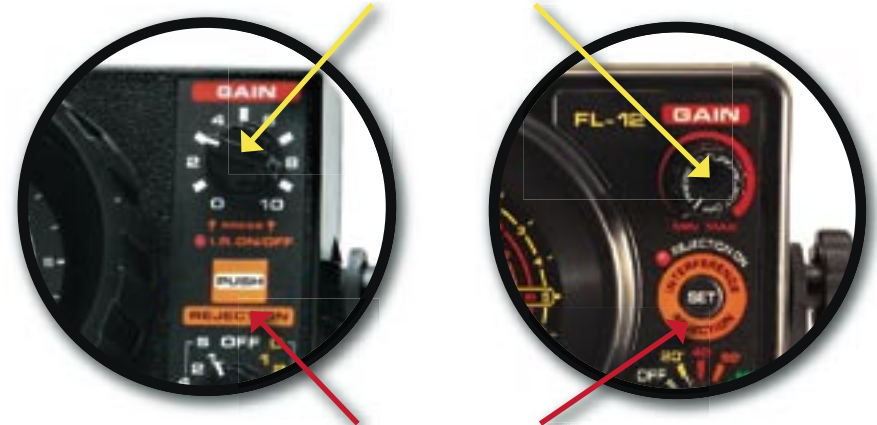
If two Vexilar units are operating together, you will get the best results by leaving the IR control set at one level on one unit, while adjusting out the interference displayed on both units using the second unit's IR feature.



Interference occurs when the cone angles of two different sounders operating at the same frequency intersect. It can also occur if the sonar signal from one sounder bounces off an underwater object and is received by another sounder.

FL-8SE AND FL-12

Interference Rejection comes on automatically when you power up the flasher. You can turn it off by pressing on the gain control.



If interference from another sounder is present on the display, press this button repeatedly until it goes away or is reduced as much as possible.

FL-18 AND FL-20

Interference Rejection comes on automatically when you power up the flasher. If interference from another sounder is present on the display, press the gain control repeatedly until it goes away or is reduced as much as possible.





ADDITIONAL FEATURES

Low Power Mode (FL-12, FL-18, FL-20 Only)

Low Power Mode, or LP Mode, reduces the output power of your flasher. It is useful for situations where the gain cannot be turned down enough in Normal Mode. Use the Low Power Mode only when you need to. Usually, you'll use it in only very shallow or very weedy conditions.

FL-18

Activate the Low Power Mode (LP) by switching the Mode control to the left. The range can be set at any position. If you switch to the left of LP, you can activate the AZ or BL Modes in Low Power Mode.



FL-12 and FL-20

Activate the Low Power Mode by switching the range control from OFF to the left. The range will be set to 20 feet. You can use any of the Mode settings in Low Power Mode.

DID YOU KNOW ? Low Power Mode has little to do with how much battery power is required to run the flasher. Switching to Low Power Mode will not significantly increase your running time on a battery.

DID YOU KNOW ? You can have a Low Power Mode feature on an FL-8se too by purchasing a Vexilar S-Cable. Learn more about it on page 43.

Auto Zoom (FL-18 and FL-20 Only)

Auto Zoom (AZ) puts the flasher into a split-screen view, with the complete water column on the right and a magnified view from the bottom on the left. When you switch to Auto Zoom Mode, the flasher automatically selects the magnified bottom view for you. However, you do need to have the flasher set to a depth range in which the bottom is in view.



FL-18

Activate Auto Zoom by switching the Mode control to the AZ selection on the right or the left. The right selection operates Auto Zoom at the normal power level. The left selection operates Auto Zoom in Low Power Mode.



FL-20

Activate the Auto Zoom by switching the Mode control to either the AZ 6' or AZ 12' setting to the right, or the AZ 6' or AZ 12' setting to the left. The right (Yellow) settings operate with the display at full brightness. The left (Red) settings operate the display in Night Mode, discussed on page 24.

Bottom Lock (BL)

The FL-18 also has a zoom feature called Bottom Lock (BL). This feature is discussed more on page 24

FL-20 Low Battery Indicator

When battery power runs low, the red "Low Battery" indicator light will turn on. You can continue to use the flasher, but be aware your time is rapidly decreasing. When the indicator light begins to flash, failure due to low voltage is imminent.





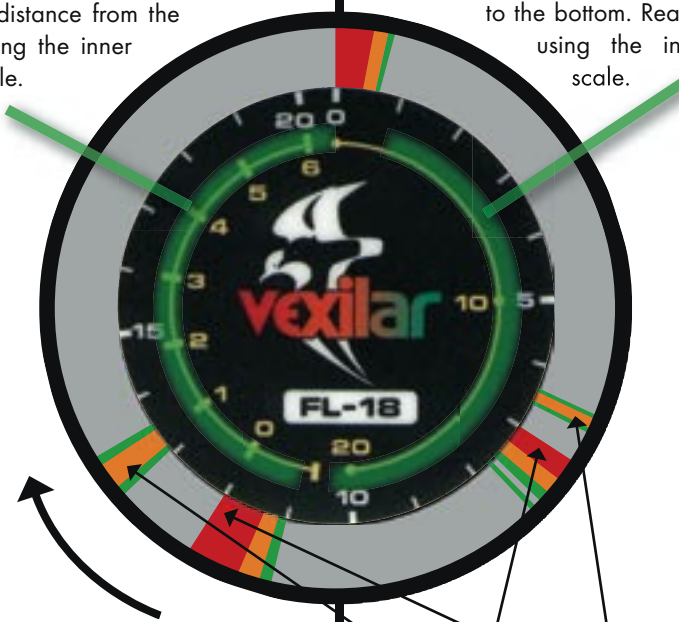
Understanding Zoom

When Zoom is active, the display is divided into two halves. When reading depths always use the inner scale on the right side. When the range is set to 20, read this scale "as is". When the range is set to 40, double the reading. If set to 60, triple the reading.

FL-18

THE LEFT HALF represents the zoom view. From the bottom up six feet. Read the distance from the bottom using the inner yellow scale.

THE RIGHT HALF represents the entire water column, from the water surface to the bottom. Read the depth using the inner red/white scale.



The Zoom scale reads in the opposite direction as the full view scale. The bottom will always be at the 7 O'clock position. Objects will appear above this point. You can only see objects as far off the bottom as the zoom setting permits, which is 6 feet. Objects above this level will only appear on the right side which show the entire water column.

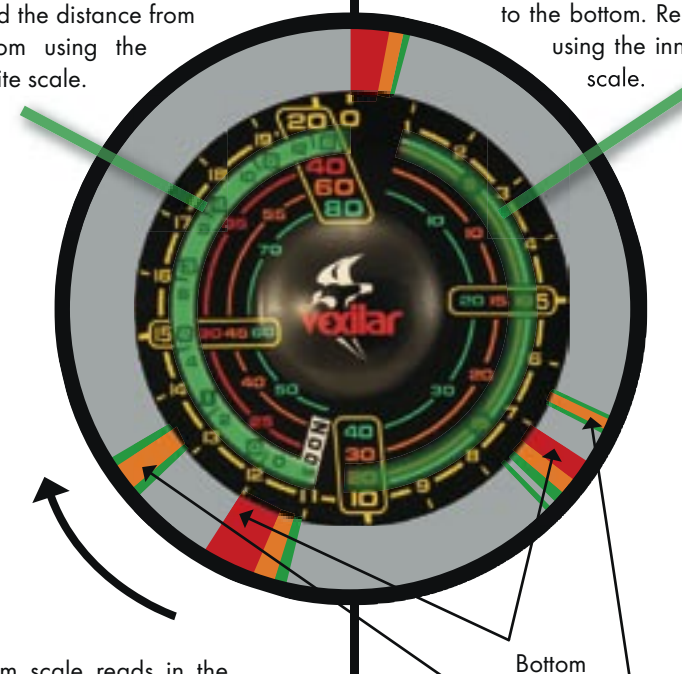
Bottom

Fish

FL-20

THE LEFT HALF represents the zoom view. From the bottom up six (or 12) feet. Read the distance from the bottom using the large white scale.

THE RIGHT HALF represents the entire water column, from the water surface to the bottom. Read the depth using the inner red/white scale.



The Zoom scale reads in the opposite direction as the full view scale. The bottom will always be at the 7 O'clock position. Objects will appear above this point. You can only see objects as far off the bottom as the zoom setting permits, either 6 feet or 12 feet. Objects above this level will only appear on the right side which show the entire water column.

Bottom

Fish

IMPORTANT Zoom should be activated only when the transducer is submerged. If the zoom is activated before the transducer is placed in the water, the bottom may not line up with the zero mark on the zoom scale correctly. If this happens, simply switch the flasher to Normal Mode, or Full View Mode, and then back to Zoom to reset the feature.





Bottom Lock (FL-18 Only)

The FL-18 also has a zoom feature called Bottom Lock (BL). This works the same as Auto Zoom, except the flasher continuously updates the position of the bottom in the magnified view. This can be helpful in a boat that is moving over varying depths or is riding in heavy waves.

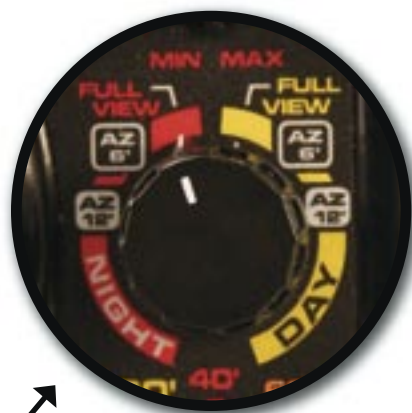
To activate Bottom Lock, switch the Mode Control to the far right for normal power operation, or the far left for Low Power Mode operation.

Bottom Lock will keep the bottom reading lined up correctly with the zero mark on the Zoom scale. This allows you to see objects which are very close to the bottom, even though the depth may be changing rapidly. The range control must be set to a position where the bottom is displayed in order for Bottom Lock to function.

IMPORTANT - Bottom Lock works best for boats in motion. When still fishing, such as vertical jigging or ice fishing, the Bottom Lock feature can incorrectly identify a large object slowly moving into your view as a shallower depth change. The result is that the flasher adjusts to the new level and the object is displayed as the bottom.

Night Mode (FL-20 Only)

Night Mode reduces the flasher's display brightness to make night time viewing more comfortable to your eyes. The display intensity is reduced by about 50%. To activate Night Mode, switch the Mode control to either the Full View, AZ 6", or AZ 12' position to the left.



FL-20 Night Mode

Switch the Mode knob to the left side (Red) to activate the Night Mode.

BOAT USE

Navigation

The Vexilar FL series flashers are great tools for navigation while boating. The instantaneous readings offer the ability to identify depth changes quickly. Here are some tips to help you navigate safely.

CAUTION:

- Be sure you know which range you have selected. If you think you have the flasher set to a deeper range than what it actually is, you may run aground unexpectedly.
- Be aware that although the depth displayed may be deep enough to navigate in presently, shallow water may be dead ahead. Allow yourself plenty of time to slow down if shallow water is encountered.
- If no bottom is displayed, assume the depth is extremely shallow. It may, in fact, be deeper than the selected range, but never assume so without checking first.
- Use common sense. Do not trust the flasher as the ultimate source of information. Use good judgement as well.

Bottom Content

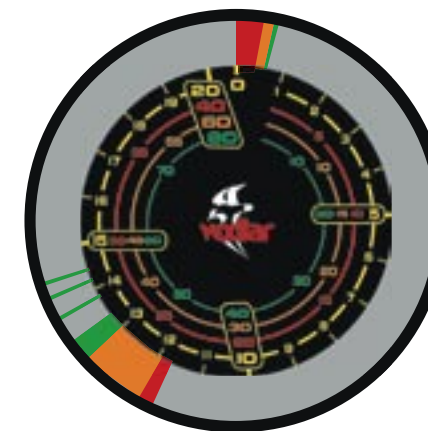
The Vexilar FL series flashers are also great tools for determining bottom content changes. The colors allow you to easily see when the bottom changes from one type to another.

HARD OR SOFT BOTTOM

- Hard bottoms will generally appear as a narrow band with color content of mostly red and orange.
- Soft bottoms will appear a wide band with more orange and green than red.



Hard Bottom



Soft Bottom



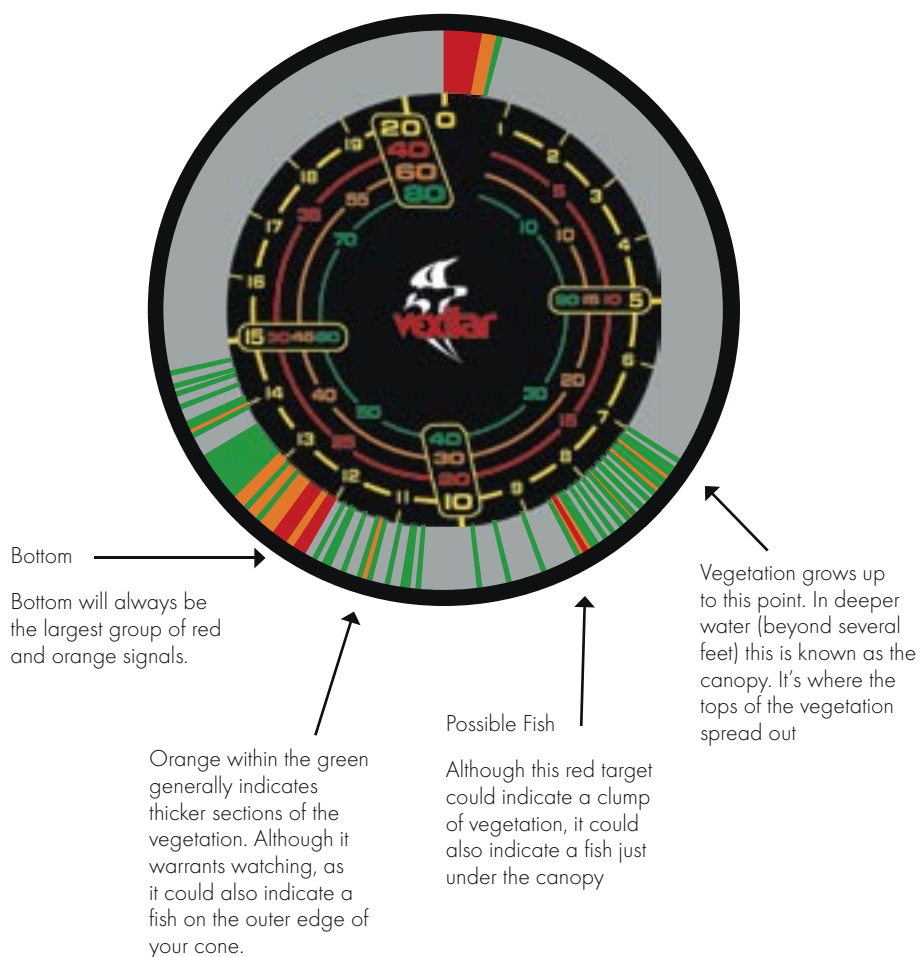


Vegetation

The Vexilar FL series flashers are exceptional when it comes to reading inside vegetation. With proper adjustment, the colors will allow you to differentiate vegetation from the bottom. Experience will even allow you to identify fish inside heavy vegetation.

TIPS FOR READING IN VEGETATION

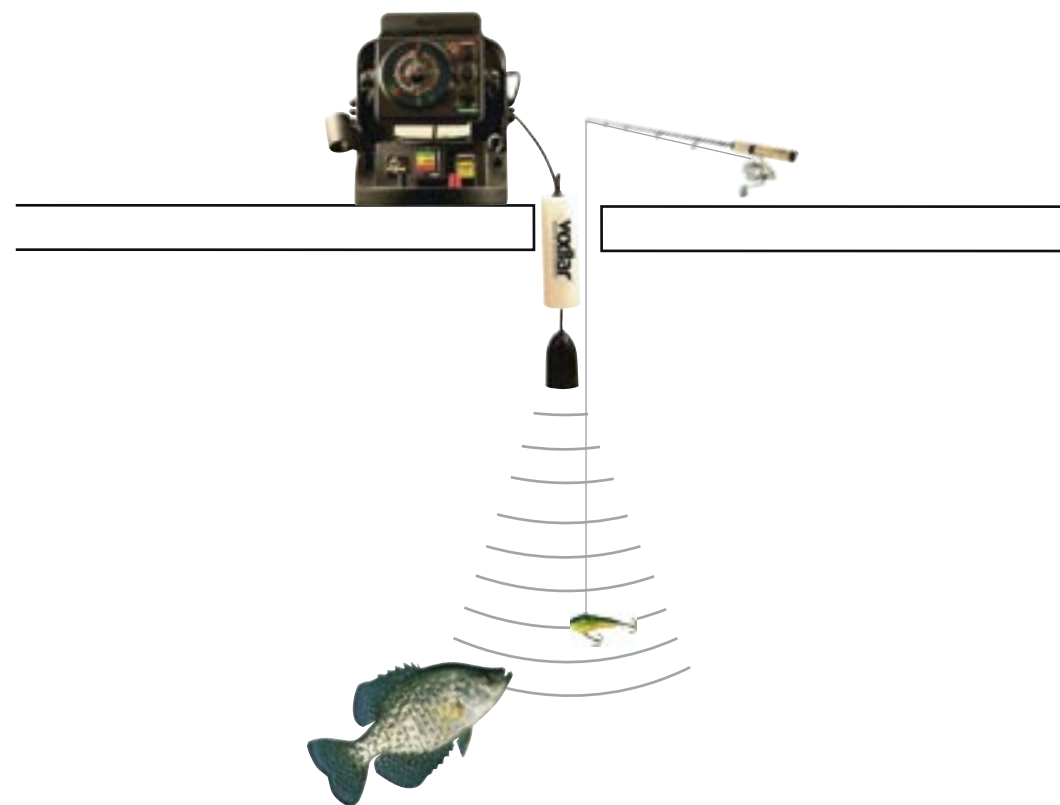
- Narrow transducer cone angles will perform better than wide cone angles.
- Keep the gain setting very low. Too much gain will make readings difficult.
- Move a boat slowly so you can identify openings that may hold fish.



ICE FISHING

Basic Principals

The FL series color flashers offer distinct advantages over traditional depth sounders for the sport of ice fishing. This unique style of fishing offers a stable platform from which to fish. Because everything is so stable, the only movements below are that of fish. Additionally, the conditions allow you to drop your bait directly down into the center of the transducer's cone of sound. This allows you to be able to see your bait and the fish on the display at the same time. You can tease the fish and see his reaction.



WARNING - Before venturing onto the ice to go fishing, be sure you know if the conditions are safe. Check with the local bait shops AND check the ice thickness yourself. You should have at least 6" of clear ice to safely support yourself and your ice fishing equipment.





Ice Fishing Transducer

Vexilar ice fishing systems include a special type of patented transducer, called an Ice-Ducer. This transducer style is designed specifically for the ice fishing application. The Ice-Ducer works off the “plumb-bob” theory. When suspended by the cable, the transducer cone is perfectly aligned to point straight down.

ICE-DUCER COMPONENTS



Stopper - The stopper sets the depth of the transducer. It's adjustable so you can set the depth according to your preference or conditions. Generally, you want to set it so the bottom of the transducer is even with the bottom of the ice.

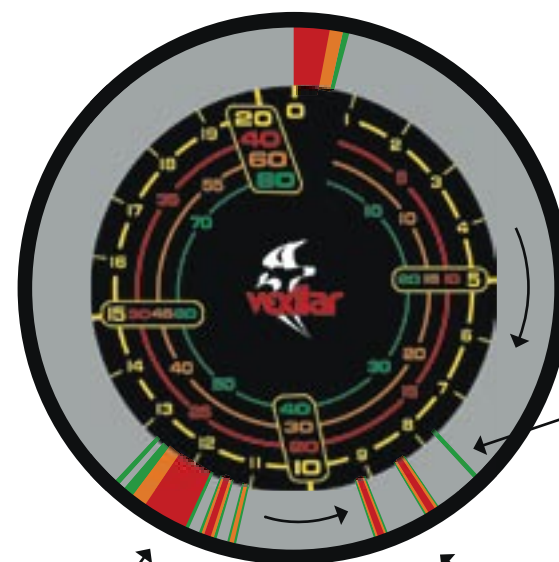
Float - The float suspends the transducer in the ice hole. You can also use the eye-bolt included with the Vexilar ice fishing systems to suspend the transducer. This can often be the best choice for early ice conditions.

Cable - Ice-Ducer cable is specifically designed to stay flexible in cold temperatures. This flexible cable will be more prone to be cut by your line or damaged if not stored correctly. It's a key part of the Ice-Ducer system.

Transducer - The transducer is designed to allow a perfectly downward alignment while suspended and be able to endure the sever conditions encountered in the ice fishing environment. Several models with different cone angles are available.

Seeing Your Lure

The key to ice fishing success when using a Vexilar ice fishing system is in the ability to see your fishing lure and it's relationship to the bottom, structure, and fish. Ice fishing with a Vexilar allows you to present your lure to the fish. You see the fish on the display and you raise or lower your lure so it is right in front of it. If the fish is hungry, it will bite. If not, it will react in some way to your presentation, such as with apathy or fear. You can see this reaction on the flasher display and adjust your tactics accordingly.



TYPICAL ICE FISHING VIEW

This illustrates a typical pan fishing view. As you lower your lure, you see it going down on the display while the curious fish rise to see what it is. When the two signal lines meet, it is time to be ready for a strike.

Lure

With the gain control set properly, your lure will appear as a weak signal. You want it to appear small next to the fish, which are much larger.

Bottom

Fish

Fish

Several fish are holding near the bottom. The thin green line right on the bottom may be a fish just up off the bottom, as the others are, but some distance to the side.

A pair of fish are rising to your lure as it is being dropped down. This is a good sign, as competition can make the fish more aggressive.

DID YOU KNOW ? Setting the gain level correctly is important to be able to understand what's going on below you. Use the lure's appearance as your reference for adjusting the gain control. Set it so your lure appears as a weak signal. Because the fish are much larger than your bait, they will appear as stronger signals. Be prepared to readjust the gain control up and down often, as small position changes and the condition of any bait attached will effect the strength of your lure's signal.





ICE FISHING SYSTEMS

The Genz Pack

The Genz Pack offers a practical ice fishing system for an affordable price. It includes all of the basic components needed to get started ice fishing with a Vexilar FL series flasher immediately.

Carry Case
The Genz "Blue Box" is a two piece shell held together by four screws

Battery and Charger
12 Volt - 7 Amp / Hour Battery with 1/2 Amp Charger



Mounting Base
The large mounting base offers ample room for the Vexilar flasher, or other brands of sonar and GPS.

Carry Case Base
The base is designed to fit perfectly on top of a five-gallon bucket.

Battery Compartment
To remove the battery, remove the four rear section screws.

Transducer Holder
Store the transducer in the special holder above the battery. The holder is designed to accept all styles of Ice-Ducers.

Power
Charge the battery here. You do not need to disconnect these connections while charging



Cable Storage
Stuff extra cable into the storage compartment under the flasher unit.

Eye-Bolt
Insert the transducer support eye-bolt here. Be sure to remove the float from the transducer cable when using the eye-bolt.

Accessories
Use the pre-drilled holes for Vexilar add-on accessories, such as the FlexLight, Battery Status Indicator and Dual Beam Transducer. See page 40.





The Pro Pack II

The Pro Pack II offers everything needed to begin ice fishing with a Vexilar color flasher, plus some extra add-ons to make the system more complete.

Battery Status Indicator

Shows the current level of charge in the battery. See page 36 for instructions.

Battery and Charger

12 Volt / 9 Amp battery with 1 amp digital automatic charger.



Tackle Box

The Vexilar tackle box fits into a dedicated location here.

Eye-Bolt Storage

The transducer support eye-bolt fits into a dedicated storage location here.

Carrying Case Base

The round base is designed to fit inside a five-gallon bucket.

Rod Holder

Adjustable angle and fits into either side of the case.

Battery Compartment

To remove the battery, remove the flasher from the carrying case, then the transducer holder by removing the two mounting screws.

Transducer Holder

Store the transducer in the special holder above the battery. The holder is designed to accept all styles of Ice-Ducers.



Accessories

Use the pre-drilled holes for Vexilar add-on accessories, such as the FlexLight, or Dual Beam Transducer. See page 42.

Eye-Bolt

Insert the transducer support eye-bolt here. Be sure to remove the float from the transducer cable when using the eye-bolt.

Cable Storage and Cleats

Use the cable handle as your cable storage and the tie-down cleats on either side to keep it in place and out of your way.

Power Connections

Charge the battery here. You do not need to disconnect these connections while charging, but be sure to do so when putting the system away for storage.





The Ultra Pack

The Ultra Pack is rugged and packed with features. The Ultra Pack includes a float holder, four rod holder mounting locations, an enclosed battery compartment and master power switch.

Rod Holder

Adjustable angle and fits into four mounting locations; either side, front and back.

Float Holder

Store the Ice-Ducer float here.

Eye-Bolt Storage

The transducer support eye-bolt fits into a dedicated storage location here.

Enclosed Battery Compartment

The battery is enclosed within the base here.

Battery and Charger

12 Volt / 9 Amp battery with 1 amp digital automatic charger.

Battery Status Indicator

Shows the current level of charge in the battery. See page 36 for instructions.

External Power Posts

Use these posts to connect your charger and to power external 12 volt accessories.

Master Power Switch

Use this switch to turn all power on and off, including the power to the external posts. **This means the switch must be ON to charge the battery.**

Tackle Box

The Vexilar tackle box fits into an easy access holder on the back of your Ultra Pack.

Eye-Bolt

Insert the transducer support eye-bolt here, on the opposite side, or in the front. Be sure to remove the float from the transducer cable when using the eye-bolt.

Non-Slip Bottom

The non-slip bottom fits into a standard five-gallon bucket for convenient storage.

Cable Storage and Cleats

Use the area behind the tackle box as your cable storage. Use the tie-down cleats on either side to keep it in place and out of your way.

Accessories

Use the pre-drilled holes for Vexilar add-on accessories, such as the Flexlight or Dual Beam Transducer. See page 42





Battery Status Indicator

The Battery Status Indicator is designed to allow you to see the level of charge in the battery. The ON LED at the bottom indicates that the battery is connected properly. The other lights indicate the approximate percentage of charge remaining.

GREEN LED

100% to 75% Zone

YELLOW LED

75% to 50% Zone

ORANGE LED

50% to 25% Zone

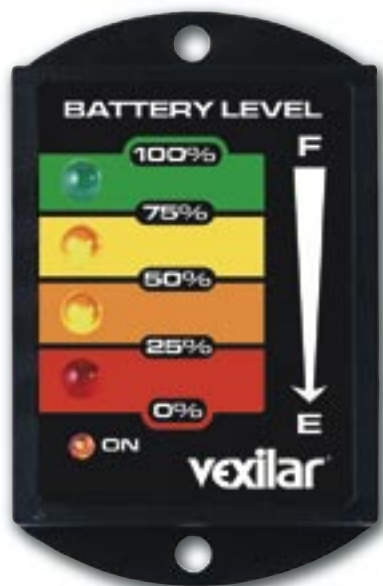
RED LED

25% to 0% Zone

ON LED

Power is connected.

If no other LEDs are illuminated, the voltage is very low.



IMPORTANT: The indicator will not show an accurate level when the charger is connected. Remember to use the charger's LED as your "Charge-Done" indicator. Also, the percent of charge shown will vary with the temperature and battery load. Readings will be most accurate when the flasher is running and the temperature is above 50° F.

IMPORTANT: Be sure the indicator is not on during long storage periods, as excessive battery drain can result. For Pro Pack systems, disconnect the indicator from the battery before storage. For Ultra Pack systems, be sure the master power switch is off.

Battery Charging

CHARGE AFTER EACH USE

1/2 Amp Charger

1. Allow the battery to warm up before charging.
2. Plug the wall transformer into a standard 110 volt socket. The red LED will come on.
3. Connect the red charger clip to the positive battery terminal (+ RED) and the black clip to the negative terminal (- BLACK). The red LED will now go out.
4. Charge the battery until the red LED comes back on to full brightness.
5. Remove the charger when the battery is full. Do not charge for more than 72 hours after the red LED has come on.



Charging times will vary depending on how much the battery has been drained. If the battery has been completely drained (approx. 18 hrs. of use on a 7 amp battery) the battery will require approximately 48 hours of charging.

1 Amp Digital Automatic Charger

1. Allow the battery to warm up before charging.
2. Connect the red charger clip to the positive battery terminal (+ RED) and the black clip to the negative terminal (- BLACK).
3. Plug the wall transformer into a standard 110 volt socket. Charge the battery until the red LED goes off and the green LED comes on.



Charging times will vary depending on how much the battery has been drained. If the battery has been completely drained (approx. 24 hrs. of use on a 9 amp battery) the battery will require about 9 hours of charging. Once the battery is fully charged and the green LED comes on, the charger switches to a maintenance mode. You can leave the charger connected to the battery indefinitely and the battery will be maintained at full charge.

DID YOU KNOW? There is no need to disconnect the flasher when charging, although it should be switched off. Also, make sure the battery has a full charge and is disconnected or that all power is switched off before putting it away for storage. **Remember to charge after each use.**

IMPORTANT: If you have an Ultra Pack system, be sure your Master Power switch is ON and the flasher is turned OFF for charging,

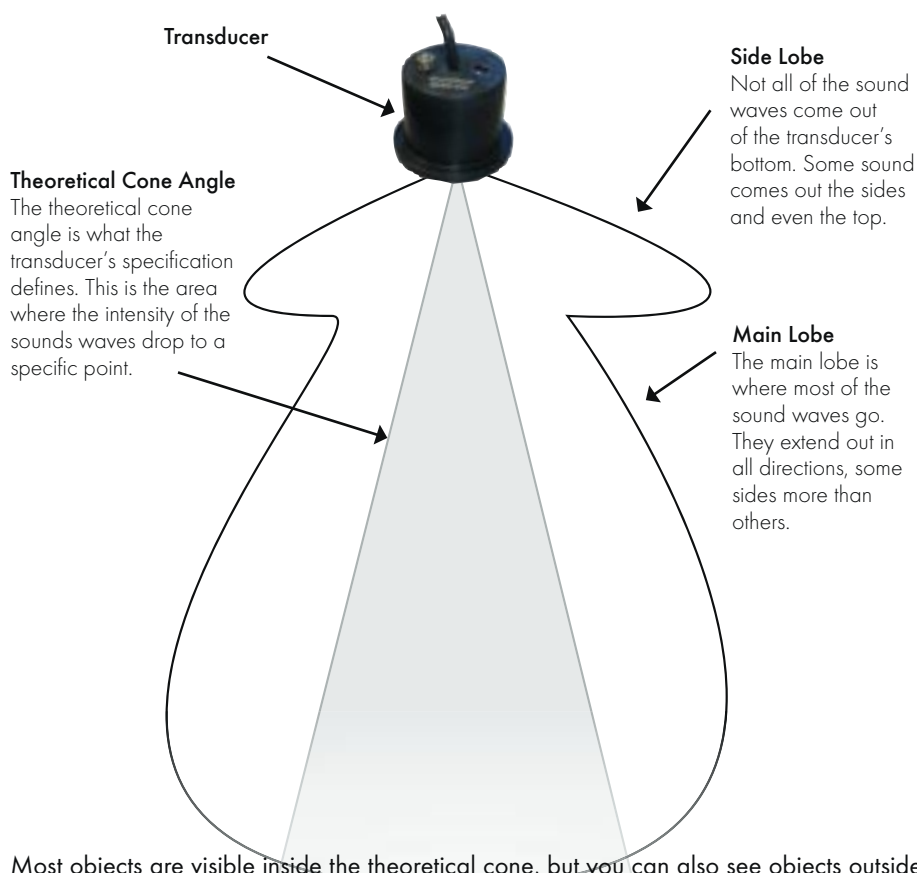




ABOUT TRANSDUCERS

Cone of Sound

The cone of sound is the area the sound waves cover as they are emitted from the transducer. Generally, this area is thought of as three-dimensional cone, such as an upside-down ice cream cone. In actuality, the cone of sound is not so precisely defined. It is an irregular shape with edges that taper rather than end abruptly. Additionally, the cone of sound will vary slightly from transducer to transducer.

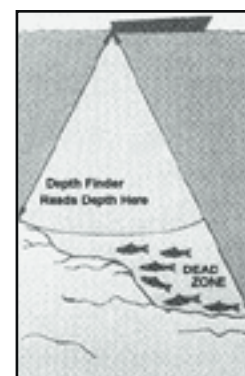


Most objects are visible inside the theoretical cone, but you can also see objects outside the theoretical angle yet within the side and main lobes. These objects must be large enough to sufficiently reflect the sonar signal. Some of these objects can be things like the face of a sharp dropping bottom, a large rock, or even a good size fish or tight group of smaller fish.

Dead Zone

Beam angle has a large effect on the performance of your flasher. There is more to it than simply area of coverage. The correct beam angle to use depends entirely on your application. If you are fishing for suspended fish then you would be pleased with the performance of the 19° cone. However, if you were going after fish that are holding right on the bottom along a steep drop-off, you would have better results with the 9°. This is because of something called dead zone. Dead zone is an area within the transducer's cone of sound that is blind to you. The wider the beam angle the greater the possible dead zone. The sonar will mark bottom as the nearest distance it sees. If you are fishing over a slope, it may see the high side of the slope, at the edge of the cone, and mark that as bottom. The fish that are holding on the bottom on the low side of the slope will be invisible to you because they are actually within the bottom signal on your depth finder. A narrower beam angle will reduce this effect.

Cone angle vs Diameter of Coverage			
DEPTH	9°	12°	19°
10'	1.6'	2.2'	3.4'
20'	3.2'	4.3'	6.7'
30'	4.7'	6.3'	10.0'
40'	6.3'	8.4'	13.4'
50'	7.9'	10.6'	16.7'
60'	9.4'	12.6'	20.8'
70'	11.0'	14.7'	23.4'
80'	12.6'	16.8'	26.8'
90'	14.2'	20.0'	30.1'
100'	15.7'	21.0'	33.5'
120'	18.9'	25.2'	40.2'
150'	23.6'	31.5'	50.2'
300'	47.2'	63.0'	100.4'



Output Power

Your depth finder puts out a constant amount of power, or sound energy. It does not matter where you have the gain level set. Gain simply controls how much you amplify the signal that is returned from below. Therefore, a narrow beam transducer will appear to be much more powerful than a wide beam transducer. This is because you are putting that same amount of power into a smaller area. This can be an advantage if you are fishing in deep water or a detriment if you are fishing in shallow water. A narrow beam transducer can be overpowering in shallow water. The use of the LP (Low Power) mode on your flasher, or the optional S-Cable (page 43), will solve this problem.





PARTS AND ACCESSORIES

Optional Transducers and Conversion Kits

TRANSOM MOUNT HIGH SPEED STYLES

- TB0044 - 19° Cone Angle
- TB0084 - 12° Cone Angle
- TB0030 - 9° Cone Angle
- TB0045 - Dual 9° or 19° Cone Angle
Includes detachable switch assembly

Transom style transducers include the mounting bracket and have 25 feet of cable length.

Mounting kits include the flasher mounting bracket, power cable, and installation hardware.

TRANSOM STYLE CONVERSION KITS

- TK-144 - 19° Transducer with Conversion Kit for the FL-8se and FL-18
- TK-244 - 19° Transducer with Conversion Kit for the FL-12 and FL-20
- TK-184 - 12° Complete Conversion Kit for the FL-8se and FL-18
- TK-284 - 12° Transducer with Conversion Kit for the FL-12 and FL-20
- TK-130 - 9° Complete Conversion Kit for the FL-8se and FL-18
- TK-230 - 9° Transducer with Conversion Kit for the FL-12 and FL-20
- TK-145 - Dual Cone Transducer Conversion Kit for the FL-8se and FL-18
- TK-245 - Dual Cone Transducer with Conversion Kit for the FL-12 and FL-20
- BK0044 - Suction Cup Mount for all of the above High Speed Transducers.
Offers dual suction cups for extra holding power.

PUCK STYLES

- TB0023 - 19° Cone Angle
- TB0087 - 12° Cone Angle
- TB0027 - 9° Cone Angle
- TB0037 - 7° Cone Angle
- TB0032 - Dual 9° or 19° Cone Angle
Includes detachable switch assembly

Puck style transducers include a trolling motor mounting tie and A.C.E. adhesive for in-hull mounting. All have 25 feet of cable length.

Conversion kits include the flasher mounting bracket, power cable, and installation hardware.

TRANSOM STYLE CONVERSION KITS

- TK-123 - 19° Transducer with Conversion Kit for the FL-8se and FL-18
- TK-223 - 19° Transducer with Conversion Kit for the FL-12 and FL-20
- TK-187 - 12° Complete Conversion Kit for the FL-8se and FL-18
- TK-287 - 12° Transducer with Conversion Kit for the FL-12 and FL-20
- TK-127 - 9° Complete Conversion Kit for the FL-8se and FL-18
- TK-227 - 9° Transducer with Conversion Kit for the FL-12 and FL-20
- TK-132 - Dual Cone Transducer Conversion Kit for the FL-8se and FL-18
- TK-232 - Dual Cone Transducer with Conversion Kit for the FL-12 and FL-20
- BK0023 - Suction Cup Mount for TB0023
- BK0027 - Suction Cup Mount for the 12°, 9°, 7°, and Dual Puck Transducers

ALUMADUCER

- TB0023A - 19° Cone Angle
- TK-123A - 19° Transducer with Conversion Kit for FL-8se and FL-18
- TK-223A - 19° Transducer with Conversion Kit for FL-12 and FL-20

ICE-DUCERS

- TB0050 - 19° Cone Angle
- TB0080 - 12° Cone Angle
- TB0051 - 9° Cone Angle
- TB0052 - Dual 9° or 19° Cone Angle
Includes detachable switch assembly

AlumDucers come with A.C.E. adhesive and have 25 feet of cable length.

Ice-Ducers come with float and stopper. Cable length is 7 feet.

SWITCHES AND EXTENSIONS

- CB0001 - 10 foot transducer cable extension
- CB0002 - 20 foot transducer cable extension
- SB-100 - Switch box for switching between two transducers on one flasher
- SB-200 - Switch box for switching two flashers on one transducer.

TRANSDUCER EXCHANGE POLICY

If you find that you have bought the wrong transducer for your intended mounting application, you can exchange it with Vexilar. You will only need to pay the retail cost difference of the transducer style. Please call for more information.

Replacement Parts

- PC0001 - Power cord for the FL-8se and FL-18
- PC0002 - Power cord for the FL-12 and FL-20
- GB0001 - Unit gimbal mounting bracket for FL-8se, FL-12, FL-18, and FL-20
- GBK001 - Gimbal Mounting bracket knobs (2 pieces)
- FT-100 - Float with stopper for all Ice-Ducers
- ST-100 - Stopper for all Ice-Ducers (2 pieces)
- RB-100 - Eye-bolt support for all Ice-Ducers
- RH-100 - Rod Holder assembly for Ultra Packs and Pro Pack IIs
- TKB001 - Vexilar 4 by 6 inch tackle box





ACCESSORIES

Ultra Pack Carrying Case

This portable case has all the features. Upgrade your older system or build a custom new system.



UC-100

Pro Pack II Carrying Case

The latest generation of our most popular portable carrying case.



PC-100

Genz "Blue Box" Carrying Case

A solid carrying case for your Vexilar flasher or other electronics.



BC-100

Soft Pack for the Ultra Pack

Encloses and protects the system. Offers a clear zippered window and access locations.



SP0004

Soft Pack for the Pro Pack II

Encloses and protects the system. Offers a clear zippered window and access locations.



SP0006

Soft Pack for the Genz Pack

Encloses and protects the system. Offers Velcro sealable access locations and side pocket storage.



SP0005

FlexLight

Provides a bright white light with very low current draw. It's adjustable so you can put the light where you need it.



L-200

Mag Shield

Both magnifies and protects the FL-8se or FL-18 displays. Not compatible with the FL-12 or FL-20



MS0001

Beverage Holder

Fits into the rod holder on the Ultra Pack and Pro Pack II and allows you to keep your favorite beverage close at hand.



CH-100

S-Cable

The suppression cable reduces your flasher's output power. This allows clearer readings in shallow or cluttered waters.



S-140

Pro Mount

Offers a swivel action and quick removal for your flasher or other electronics. It's durable and economical.



SMC001

Battery Status Indicator

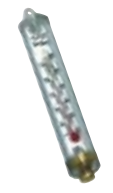
Shows the current charge level of any 12 volt battery.



T-130

Deptherm

Gives depth and temperature. Just attach it to your line and drop it down.



104

A.C.E. Adhesive

This acoustically conductive epoxy system is designed for maximum performance with minimal in-hull transducer installation effort



ACE001

Tackle Tote

A handy soft sided tackle box that holds three of our 4 by 6 inch Vexilar tackle boxes. Use it for all seasons.



TT-100

Vexilar Clothing

From caps to shirts and sweats to jackets, Vexilar offers a wide range of styles and colors with the Vexilar logo. Visit the Vexilar web site or your local Vexilar Pro Shop to find quality affordable clothing you'll enjoy wearing day after day.





TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE
Unit is turned on, but no display and motor is not running.	Check for bad connections, proper hook up polarity, and make sure you have a good, fully charged, battery.
Unit is turned on and the motor is running, but there is no display.	Battery voltage too low. The unit will show no display if the voltage is below 8 volts. Check voltage while unit is running.
Unit runs well for a short time, then lights fade out or unit quits.	Bad battery or connection. Voltage may be good when checked, but will fall as unit runs.
Unit runs and shows display light, but does not read depth.	Transducer is not plugged in or not in contact with the water.
Unit works, but needs high gain to see bottom or targets.	Transducer is not aimed correctly or needs to be cleaned. 19 ^o transducers will have trouble seeing small targets deep.
Unit works, but has too many lines on the display. Can't tell what is what.	Improper transducer adjustment. Also, gain may be set too high or ,if gain is set to minimum, switch to the LP Mode.
Unit works well when sitting still or at when slow trolling, but loses reading at higher speeds.	Improper transducer type, installation, or adjustment causing a loss of clear water flow across the transducer when the boat reaches a certain speed.
Unit shows noise when engine or electric motor is turned on.	Defective engine or electric motor. Also can be improper grounding or missing ground in electrical system.
I.R. does not work. Can't eliminate interference from other depth finder.	Gain may be set too high or the other unit has a problem. Also, check for ice or debris buildup under the gain control.

Electrical Interference

There may be situations where you experience interference from other electrical devices, not just another nearby depth sounder. This interference will show on your display as random signals which can appear anywhere. They will interfere with your ability to see the normal display signals. The most common sources are electric trolling motors and engine ignitions systems. The Interference Rejection feature will not have much effect on these types of interference, as this feature is designed to only deal with signals from another sonar device. Here are some things to be aware of when it comes to electrical interference.

SOURCES

Interference can be introduced into your sonar system through the power supply, transducer line, or both. To identify the source, unplug the transducer and run the trolling motor or the engine. If the interference disappears, you know the noise is coming in through the transducer line. If not, it's coming through the power line, or both.

WIRING

Power line interference can generally be solved by improvements in the wiring positions, connections, and grounding. You want to be sure the sonar wiring is as far away as possible from the trolling motor wiring, and the wiring is neat. Make cable runs as short as possible and neatly coil extra wire and tie it off so it stays put in rough water or while pulling the boat. All electrical connections should be in very good condition. Push-on terminals should be tight. Wire crimp connections should not come free when pulled firmly. Conductors should be shiny, not dull or corroded.

GROUNDING

The boat's electrical system should have a common ground that should terminate at the water the boats floats in. This is the earth ground to your electrical system. For aluminum hulls, it's most effective make the hull the chassis ground of your electrical system. This insures a broad connection to the earth ground. For fiberglass hulls, the engine's out-drive should act as this connection in addition to a bow mounted trolling motor's motor shell.

EQUIPMENT

Electric trolling motors and main engines can have technical problem that cause interference. If common wiring improvements do not solve the problem, be sure to check with the manufacturer to see if there are any recommendations or updates available regarding interference with depth sounders.

For more information regarding interference issues, check the Help Department of the Vexilar web site or contact our service department.





SPECIFICATIONS

FL-8se

Operating Voltage:	10.5 - 15 Volts (12 Volts Nominal)
Current Draw:	275mA
Power Output:	400 Watts (Peak to Peak) Maximum
Frequency:	200 kHz
Resolution:	525 Lines of Resolution
Target Separation:	2.65" Minimum
Target ID:	1" Minimum
Display Colors:	3 - Red, Orange, and Green
Interference Rejection	10 Steps
Dimensions:	4.4"H x 6"W x 3.5"D
Weight:	1.1 Lbs.
Depth Scales:	0-20', 0-30', 0-40', 0-60', 0-80', and 0-120'*

* Custom deep model available. Changes deepest range from 120' to: 240'. Contact Vexilar customer service for more information.

FL-12

Operating Voltage:	10.5 - 15 Volts (12 Volts Nominal)
Current Draw:	275mA
Power Output:	400 Watts (Peak to Peak) Maximum
Frequency:	200 kHz
Resolution:	525 Lines of Resolution
Target Separation:	2.65" Minimum
Target ID:	1" Minimum
Display Colors:	3 - Red, Orange, and Green
Interference Rejection	10 Steps
Dimensions:	4.8"H x 6"W x 2.4"D
Weight:	1.1 Lbs.
Depth Scales:	0-20' LP, 0-20', 0-40', 0-60', 0-80', and 0-200'*

* Custom deep model available. Changes deepest range from 200' to: 300'. Contact Vexilar customer service for more information.

FL-18

Operating Voltage:	10.5 - 15 Volts (12 Volts Nominal)
Current Draw:	275mA
Power Output:	400 Watts (Peak to Peak) Maximum
Frequency:	200 kHz
Resolution:	525 Lines of Resolution
Target Separation:	2.65" Minimum
Target ID:	1/2" Minimum
Display Colors:	3 - Red, Orange, and Green
Interference Rejection	10 Steps
Dimensions:	4.4"H x 6"W x 3.5"D
Weight:	1.1 Lbs.
Depth Scales:	0-20', 0-40', 0-60', 0-80', and 0-200'*

* Custom deep model available. Changes ranges to: 0-30', 0-40', 0-60', 0-90' and 0-300'. Contact Vexilar customer service for more information.

FL-20

Operating Voltage:	10.5 - 15 Volts (12 Volts Nominal)
Current Draw:	275mA
Power Output:	400 Watts (Peak to Peak) Maximum
Frequency:	200 kHz
Resolution:	525 Lines of Resolution
Target Separation:	2.65" Minimum
Target ID:	1/2" Minimum
Display Colors:	3 - Red, Orange, and Green
Interference Rejection	10 Steps
Dimensions:	4.8"H x 6"W x 2.4"D
Weight:	1.1 Lbs.
Depth Scales:	0-20' LP, 0-20', 0-40', 0-60', 0-80', and 0-200'*

* Custom deep model available. Changes deepest range from 200' to: 300'. Contact Vexilar customer service for more information.



SERVICE AND SUPPORT

If you find that you need help please contact us. Have ready the model number and, if possible, the serial number of your product. Please be sure to read this manual thoroughly first.

ADDRESS

Vexilar, Inc.
6667 W Old Shakopee Road
Minneapolis, MN, 55438-2622

TELEPHONE

(952) 884-5291

FAX

(952) 884-5292

EMAIL

service@vexilar.com

WEB SITE

www.vexilar.com

Warranty Information

This VEXILAR product is warranted against factory defects in material and workmanship for a period of 2 years from the date of purchase or receipt as a gift. During the warranty period, VEXILAR will repair or at its option, replace at no cost to you for labor, materials or return transportation provided the unit is returned, shipped prepaid to Vexilar, Inc., 6667 W Old Shakopee Road, Minneapolis, MN 55438-2622. This warranty does not apply if the product has been damaged by accident or misuse, or as a result of service or modification by other than the factory.

Except as otherwise expressly stated in this previous paragraph, the COMPANY MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER WITH RESPECT TO THIS PRODUCT. Company shall not be liable for, and purchaser assumes responsibility for, all personal injury and property damage resulting from the handling, possession or use of the product by Purchaser or others who obtain it through purchaser.