# OWNER'S MANUAL

## Vexilar Flasher Instruction Manual

MARINE ELECTRONICS SINCE 1960

**vexilar**®

VEXILAR.COM

## COVERS THESE MODELS:

FL-8®SE | FL-18®
FLX-12™ | FLX-20™ | FLX-28™ | FLX-30™BB

# VEXILAR FL/FLX SERIES OWNERS MANUAL
## FL-8®SE | FLX-12™ | FL-18® | FLX-20™ | FLX-28™ | FLX-30™BB

## Contents

# VEXILAR HISTORY
## Pioneers in Marine Electronics

Established in 1960, Vexilar, Inc. has been a leading innovator of marine electronics in the sport fishing industry for over 60 years.

Some of our innovations include the first:

- Straight-line paper graph for sport fishing (model 155)
- CRT (television) display (model 660)
- Color display (model DE-12)
- Fish alarm (model 120-SOS)
- Liquid Crystal Display (LCD) (model 480)
- Self-leveling ice fishing transducer design (Ice-Ducer®)
- The first split-screen zoom flasher (model FL-18®)
- Shoot-through-aluminum transducer design (AlumaDucer®)
- 10' Range Flasher (FL-22™HD)
- Transducer with three cone angles in one housing
- WiFi sonar driven by mobile app (SonarPhone®)
- Aftermarket Digital Depth Display for FL flashers (DD-100)
- Flasher to use Brushless Data transfer tech (FLX-28™)
- Broad Band flasher sonar (FLX-30™BB)



OWN THE ICE
VEXILAR
19 60
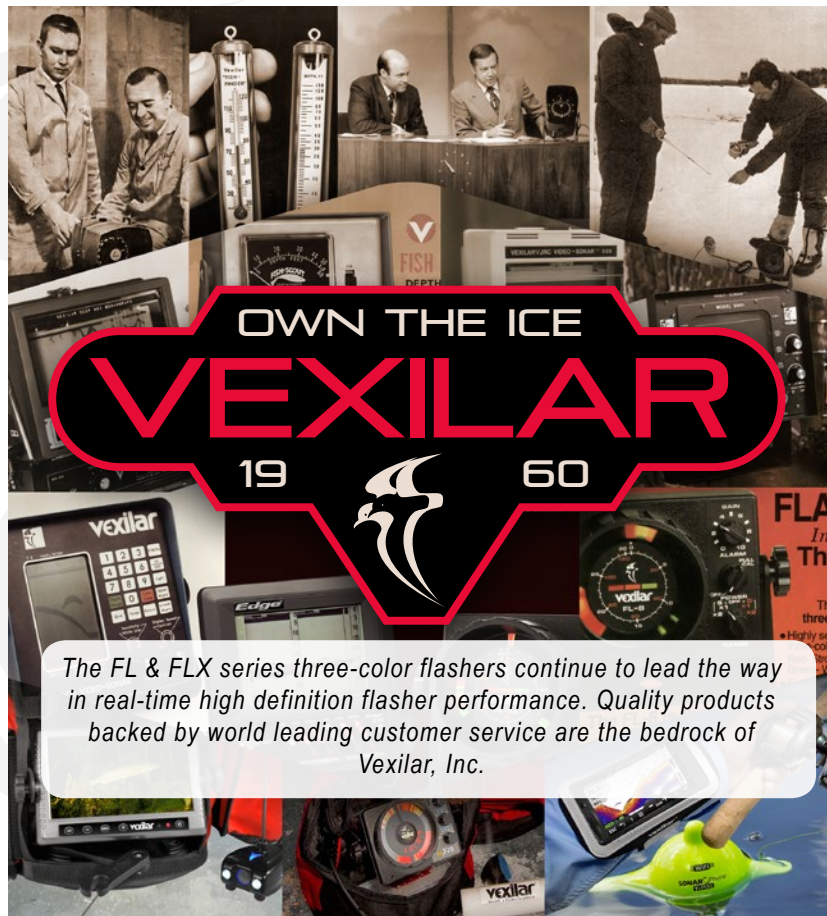
*The FL & FLX series three-color flashers continue to lead the way in real-time high definition flasher performance. Quality products backed by world leading customer service are the bedrock of Vexilar, Inc.*

## How Sonar Works

SONAR stands for SOund NAvigation and Ranging. Sound travels through fresh water at a speed of approximately 4,920 feet per second. A sonar device (depth finder/fish-finder) measures the amount of time a burst of energy takes to travel to the bottom and return to the transducer. 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 transmit 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 and signal strength of the bottom and 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 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 point in time, also known as "real 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.

## 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. Vexilar provides a balanced performance level for a wide range of fishing scenarios.

*Flasher Wheel Stationary*

*Lights turn on and off rapidly as the wheel is spun*

*Flasher Wheel Spinning*
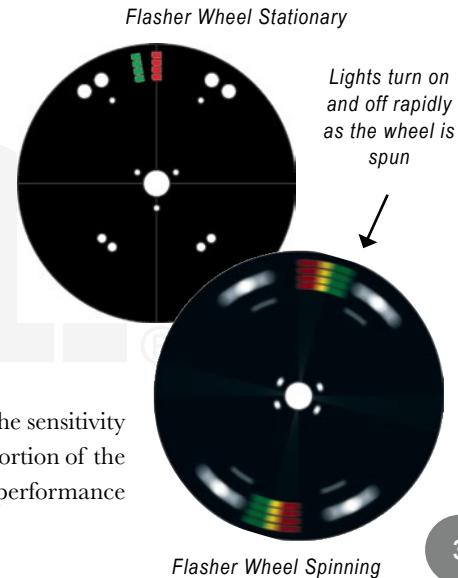
# BASIC CONCEPTS OF VEXILAR USE

Vexilar FL/FLX series color flashers are great tools for open water and ice fishing. Once you learn to understand the basic concepts and meaning of the color display, you can apply this knowledge to greatly increase your fishing success. All the FL/FLX 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 bait they feed on.
- Watching your bait and the fish around it.

## Range Control

Depth Range determines the maximum depth of water in which the flasher can see the bottom. For example, the shallowest range available on the FL-18 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 will need to select a deeper depth range in order to see the bottom. 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 and makes things bigger and easier to see.

## 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. Keep the gain setting as low as possible for best overall performance.

Gain can sometimes act effect the total area of coverage below you. As you increase the gain level, you can see things farther away from the transducer. This can be helpful when looking for suspended fish, but only turn it up temporarily as the signal distorts your targets into big blobs of color. Unfortunately, a high gain setting won't work in weedy areas either, 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

This feature rejects sonar interference generated by other nearby depth sounders. Interference Rejection, or IR, comes on automatically when you turn the flasher on, and you can adjust it further if needed. See page 6 for details.

# THE VEXILAR DISPLAY

Each FL series flasher display consists of multiple 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 transducer.
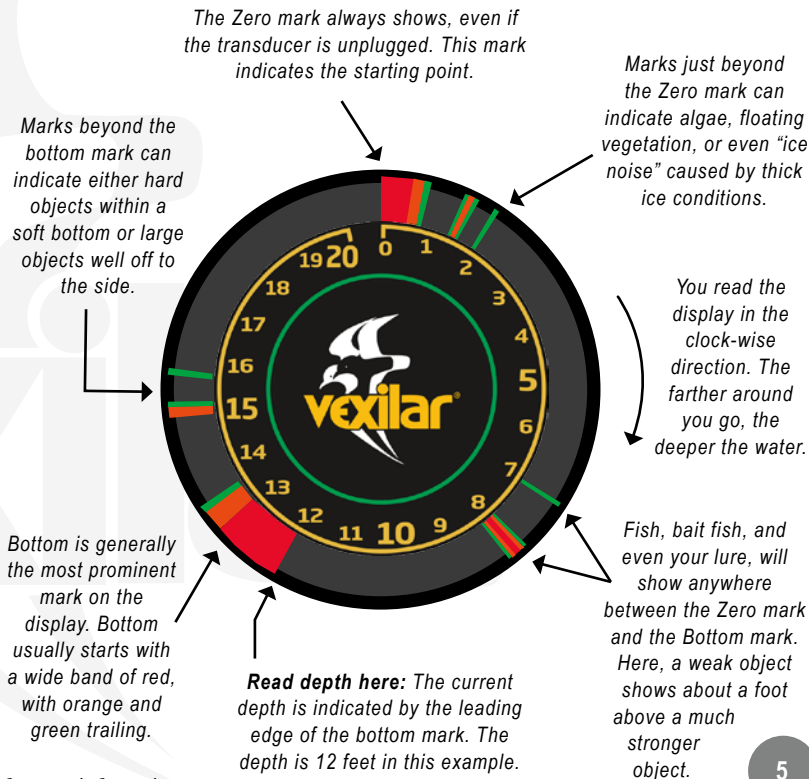
**ORANGE = Medium Strength Signals.** Medium signals are produced by smaller objects and softer bottom types. Also, medium strength signals can be produced by larger objects in the immediate area around, but not directly under, the transducer.

**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.

*FLX-28 and FLX-30BB models have additional color options. See page 56 for more information.*

## Understanding the Display Marks

This is the basics of what you will see on the display.



*The Zero mark always shows, even if the transducer is unplugged. This mark indicates the starting point.*

*Marks just beyond the Zero mark can indicate algae, floating vegetation, or even "ice noise" caused by thick ice conditions.*

*Marks beyond the bottom mark can indicate either hard objects within a soft bottom or large objects well off to the side.*

*You read the display in the clock-wise direction. The farther around you go, the deeper the water.*

*Bottom is generally the most prominent mark on the display. Bottom usually starts with a wide band of red, with orange and green trailing.*

*Read depth here: The current depth is indicated by the leading edge of the bottom mark. The depth is 12 feet in this example.*

*Fish, bait fish, and even your lure, will show anywhere between the Zero mark and the Bottom mark. Here, a weak object shows about a foot above a much stronger object.*

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# INTERFERENCE REJECTION EXPLAINED

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 nearby anglers are running sounders operating at the same frequency as your flasher.

Cross-talk interference occurs when the signals sent from one depth sounder are received by another. If the two sounders' frequencies are the same, each unit is unable to differentiate between its own signals and others. What you see as interference is actually the signals of the other sounder displayed on your screen. The signals can circle around the display or remain stable. Beware of the stationary interference signals. They can lead you to believe the depth is different than it is, or that there's a fish hanging below you which isn't really 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 IR 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 setting at one level on one unit, while adjusting out the interference displayed on both units using the second unit's IR feature.
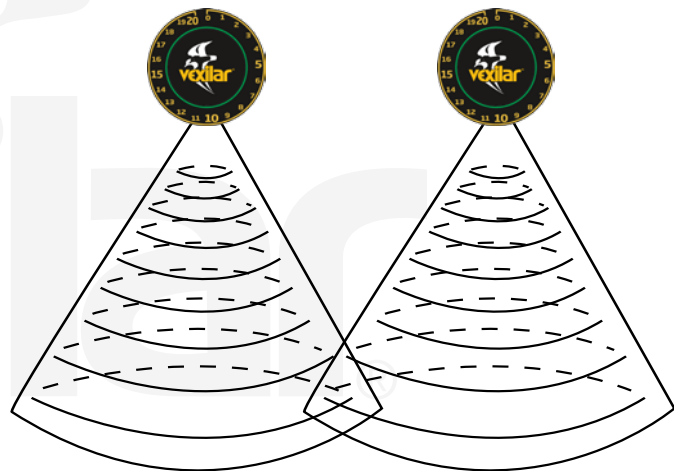
*Interference occurs when the cone angles of two separate sounders operating at the same frequency intersect. It can also occur if the sonar signal from one sounder bounces off an underwater object and is received by another sounder.*
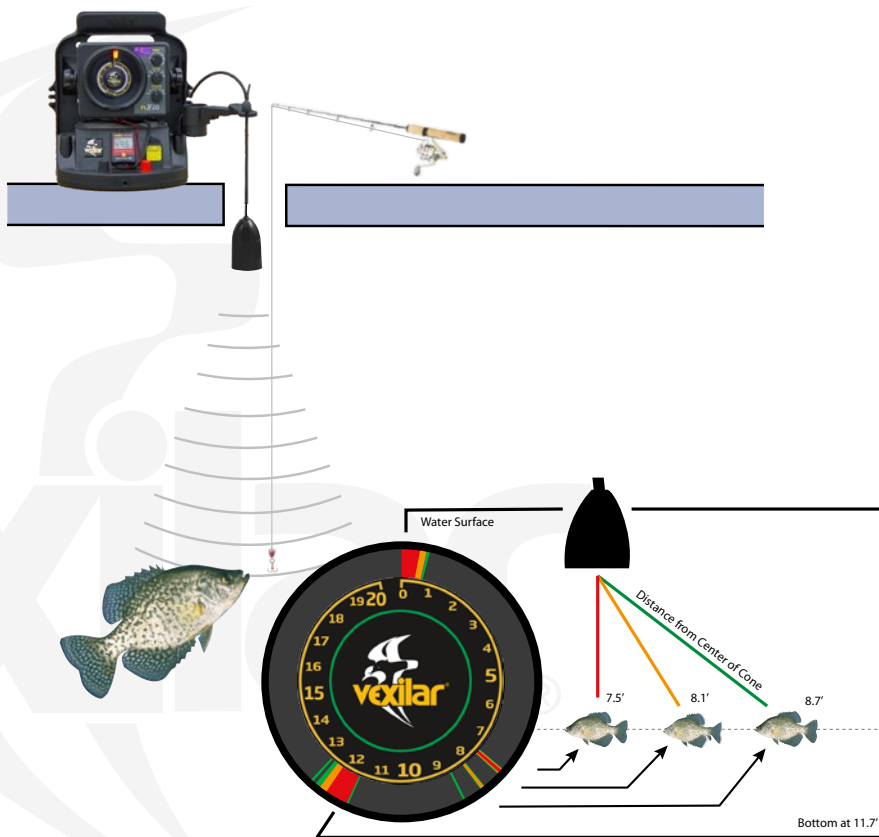
# VEXILAR ICE FISHING

The Vexilar FL & FLX series color flashers offer distinct advantages over LCD depth sounders for the sport of ice fishing. This unique style of fishing offers a stable platform on which to fish. Because everything is so stable, the only movements below are that of fish.

Additionally, this position allows you to drop your bait directly down into the center of the transducer's cone of sound. This allows you to observe your bait and the fish on the display simultaneously. You can tease the fish and see his reaction in real time.

With practice, you will soon be able to judge for yourself both fish species as well as the mood of the fish, and whether your lure presentation is working or not.

## Please Use Caution

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



Water Surface

Distance from Center of Cone

7.5′    8.1′    8.7′

Bottom at 11.7′

# SEEING YOUR LURE

The key to ice fishing success when using a Vexilar ice fishing system is the ability to see your fishing lure and its 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 your lure so it is right above the fish on the display. If the fish is hungry, it will bite. If not, it will react in some way to your presentation, such as with disinterest or fear. You can see this reaction on the flasher display and adjust your tactics accordingly.

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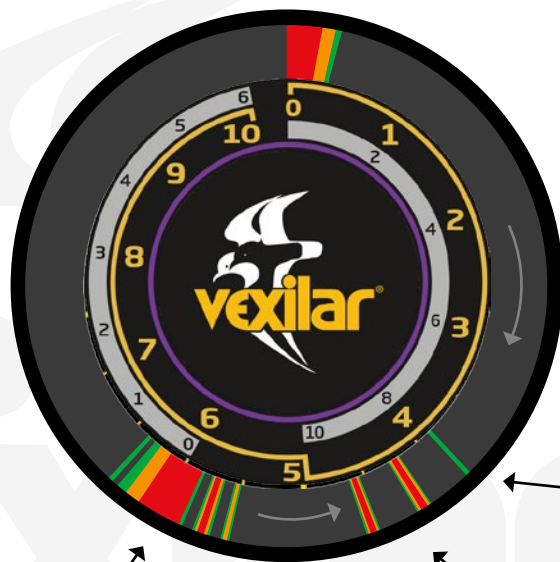
*This illustrates a typical panfish fishing view. As you lower your lure, you see it going down on the display while the curious fish rise to see what it is. When the two signal lines meet, it is time to be ready for a strike.*

**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**
*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.*

**Fish**
*A pair of fish are rising to your lure as it is lowered. This is a good sign, as competition can make fish more aggressive.*

# THE ICE-DUCER®

Vexilar ice fishing systems include a special type of transducer patented by Vexilar in 1997 called the 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.

**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 system 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 severe conditions encountered in the ice fishing environment. Different cone angles are available to match your fishing needs: 9° Pro-View, 12°, 19° and Broad Band (FLX-30BB only). Transducer sizes will vary. See page 72 for more information.
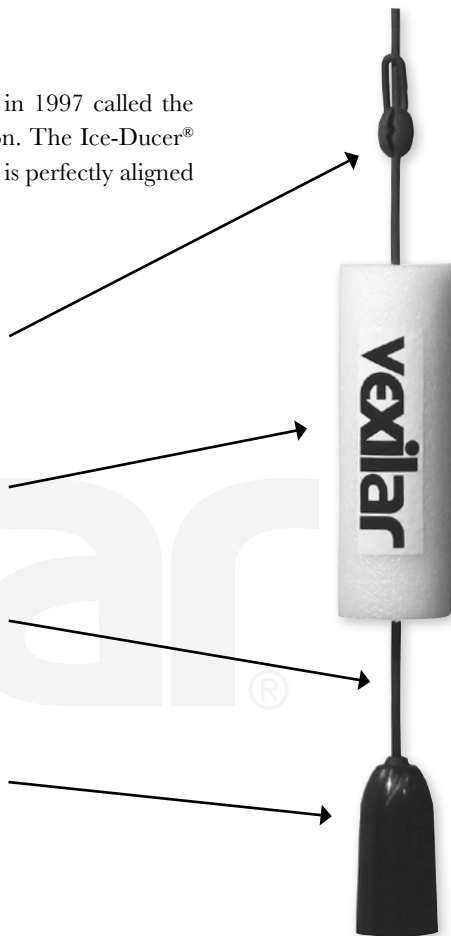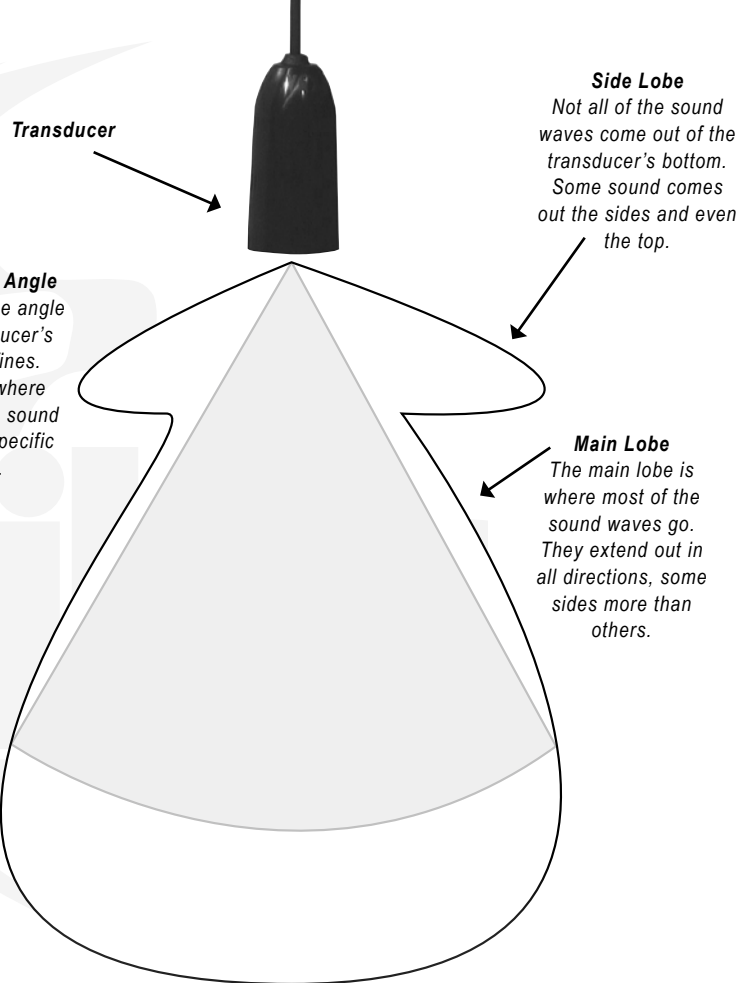
# ABOUT TRANSDUCERS

## 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. Actually, 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.

*The FLX-30BB uses a special broad band transducer that offers a wide spectrum of cone angles that vary with each frequency. The multi-frequency system has different characteristics than the single-frequency transducer described here. The Broad Band transducer does not have side lobes.*

**Transducer**

**Theoretical Cone Angle**
*The theoretical cone angle is what the transducer's specification defines. This is the area where the intensity of the sound waves drop to a specific point (-6dB).*

**Side Lobe**
*Not all of the sound waves come out of the transducer's bottom. Some sound comes out the sides and even the top.*

**Main Lobe**
*The main lobe is where most of the sound waves go. They extend out in all directions, some sides more than others.*

# 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.
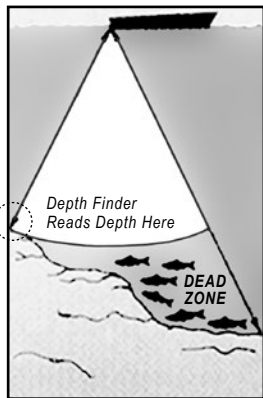


Depth Finder Reads Depth Here

DEAD ZONE

| Cone angle vs Diameter of Coverage | | | | | |
|---|---|---|---|---|---|
| Depth | 8° | 9° | 12° | 19° | 20° |
| 10' | 1.4' | 1.6' | 2.2' | 3.4' | 3.5 |
| 20' | 2.8' | 3.2' | 4.3' | 6.7' | 6.9 |
| 30' | 4.2' | 4.7' | 6.3' | 10.0' | 10.6 |
| 40' | 5.6' | 6.3' | 8.4' | 13.4' | 14.1 |
| 50' | 7' | 7.9' | 10.6' | 16.7' | 17.6 |
| 60' | 8.4' | 9.4' | 12.6' | 20.8' | 21.2 |
| 70' | 9.4' | 11.0' | 14.7' | 23.4' | 24.7 |
| 80' | 11.2' | 12.6' | 16.8' | 26.8' | 28.2 |
| 90' | 12.6' | 14.2' | 20.0' | 30.1' | 31.7 |
| 100' | 14' | 15.7' | 21.0' | 33.5' | 35.3 |
| 120' | 16.8' | 18.9' | 25.2' | 40.2' | 42.3 |
| 150' | 21' | 23.6' | 31.5 | 50.2' | 52.9 |

## 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 the 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 70), will solve this problem.

Remember to *not* use LP Mode or the S-Cable in depths beyond 20 feet where you will find that you need to turn your Gain Control up much higher than normal. This will give a noisy display and make interference from other units much more likely.

# BOAT USE

## Navigation

The Vexilar 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:

- At all times it is critical to know the depth range you have selected in order to prevent running aground.
- Be aware that although the depth displayed may be deep enough to navigate 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 dangerously shallow. It may be deeper than the selected range, but never assume so.
- Use common sense. Do not trust the flasher as the ultimate source of information. Use good judgment as well.

## Bottom Content: Hard & Soft Bottom

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



*Hard Bottom*



*Soft Bottom*

# FISHING VEGETATION

The Vexilar flashers are exceptional when it comes to reading inside vegetation. With proper transducer choice, 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.

*Bottom*

*Bottom will always be the largest group of red and orange signals.*

*Orange within the green generally indicates thicker sections of the vegetation. It warrants watching, as it could also indicate a fish on the outer edge of your cone.*

*Possible Fish*

*Although this red target could indicate a clump of vegetation, it could also indicate a fish just under the canopy.*

*Vegetation has grown up to this point. In deeper water (beyond several feet) this is known as the canopy. It's where the tops of the vegetation spread out.*

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# 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 so it can be tilted and swiveled easily. 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.

Flasher Unit

Rubber Washer

Gimbal Knob

Gimbal Bracket
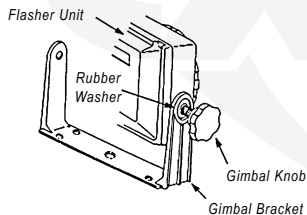
## Power Connection

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 the 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 white or 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

## Types and Mounting Methods

There are several different transducer types 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 water flow when moving at high 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.

*High-Speed Transom*          *Puck Style*

## Mounting Methods

- **Transom Mounted:** the method by which the transducer is mounted externally 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 16).

- **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 (see page 17).

- **Trolling Motor Mounting:** the method by which the transducer is attached to the lower unit of the electric trolling motor (see page 18).

- **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 19).

NOTE: If you find that you have purchased 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. Transducers must be in new condition. Please call for more information: 952-884-5291.

# TRANSOM TRANSDUCER MOUNTING

Before you begin the process of installing the transducer, check your hull to find a spot where you'll get 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 the transducer with level alignment.

## 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 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 of the four 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.

*Less than 10°*

*More than 10°*

*Tip Down 1/8"*

*< 10°*

*Dead Rise Angles*

*> 10°*

*1/4" to 5/8"*

*DOWN*
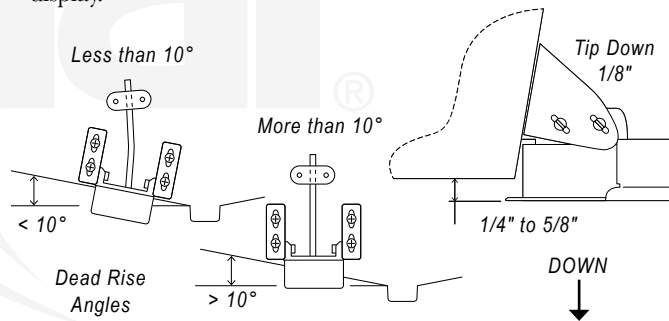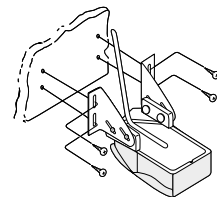
# IN-HULL TRANSDUCER MOUNTING

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 test the location and 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. 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.
6. Installation complete. Allow the A.C.E. to dry.



Puck

DOWN

Boat Hull

A.C.E. TRANSDUCER EPOXY
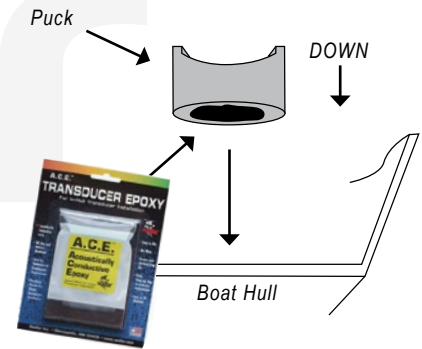
# ELECTRIC TROLLING MOTOR MOUNTING

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 close to the center of the steering rotation.
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.
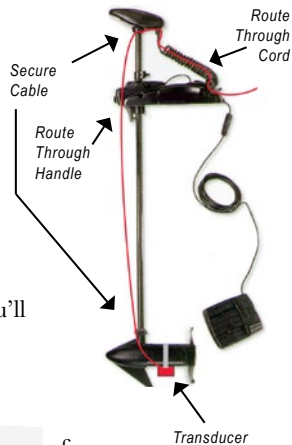
## Mounting to Manual Steer Motors

1. Position the transducer on the bottom side of the motor housing close to the center of the steering rotation.
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. Route the cable up the shaft, securing it every three or four 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.

18
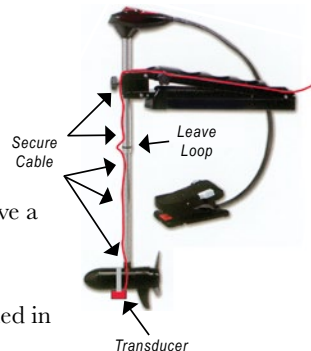
# OPEN WATER OPTIONS

### Universal Open Water Transducer Mounting Kit: TK-100

Year-round fishing use of any Vexilar Flasher sonar system is made a lot easier and less expensive with the Universal Open Water Transducer Mounting Kit from Vexilar. This kit includes a 20-degree transducer with thirty feet of cable and the mounting brackets needed to attach it to the side of a boat with a suction cup mount, an electric trolling motor mounting bracket or an external high-speed mounting bracket.

## BK0044

### High Speed Suction Cup Bracket

Fits all High-Speed Transom style transducers and allows for readings at speeds above the planing speed of the boat. Dual suction cups offer a secure hold.
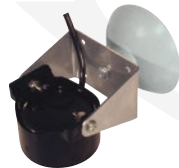
## BK0027

Fits all 2" Puck style transducers. (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.

## Permanent Mount Kits

Application specific TK Kits are also available. Choose from puck style for in-hull or electric trolling motor mounting, or the high-speed style for mounting to the transom of your boat. Both transducer styles come in a variety of beam angle options.

These kits contain everything needed for installation. See page 72 for a list of kits available.

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

| | FLX-30™BB | FLX-28™ | FLX-20™ | FL-18® | FLX-12™ | FL-8®SE |
|---|---|---|---|---|---|---|
| Display Type | Weatherproof, super-bright, 5-color LED (five color palettes). | | Weatherproof, super-bright, 3-color LED (3 color palettes). | Weatherproof, super-bright, 3-color LED (strong targets in red, medium targets in orange, weak targets in green). | | |
| Display Face | Flat screen with super wide viewing — more than one angler can see the display — and from farther away or from the sides. | | | Backlit scale decal with light trap design. | Flat screen with backlit scale and super wide viewing angle. | Backlit scale decal with light trap design. |
| Flasher Technology | Effective in 2020, All Vexilar Flashers are being produced using Vexilar's proprietary brushless data transfer technology to deliver a sunlight-readable display and less noise. | | | | | |
| Resolution | 525 segments. Target separation of ½ inch (at 10' range setting). | 525 segments. Target separation of ½ inch (at 10' range setting). | 525 segments. Target separation of ½ inch (at 10' range setting). | 525 segments. Target separation of 2.6 inches. | 525 segments. Target separation of 1.0 inch. | 525 segments. Target separation of 2.6 inches. |
| Target ID | Less than ¼ inch | Less than ¼ inch | Less than ¼ inch | Less than ½ inch | 1 inch | 1 inch |
| Auto Zoom settings | 6', 12' and 18' Auto Zoom. | 6' and 12' Auto Zoom. | 6' and 12' Auto Zoom. | 6' Auto Zoom. 6' Bottom Lock. | n/a | n/a |
| Low power Mode | Three power mode settings: Low, Medium and High | Built-in | Built-in | Built-in | Built-in | With optional S-Cable |
| Night Mode | Built-in | Built-in | Built-in | n/a | Built-in | n/a |
| Interference rejection | 140 options (20 settings per frequency) | 20 settings | 20 settings | 10 settings | 20 settings | 10 settings |
| Depth range settings (feet) | **Auto:** 10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 120, 160, 200, 240, 300 **Shallow:** 10, 15, 20, 30, 40 **Middle:** 50, 75, 100, 125, 150 **Deep:** 175, 200, 225, 250, 300 | **Auto:** 10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 120, 160, 200, 240, 300 **Manual:** 10, 20, 30, 40, 50 | 10, 20, 30, 40, 80, 100 **Deep Water:** 30, 60, 90, 120, 240, 300 | 20, 40, 60, 80, 200 | 20 (Low Power), 20, 40, 60, 80, 120 | 20, 30, 40, 60, 80, 120 |
| Sonar longevity | MST matching sonar technology ensures maximum sonar performance and longevity by balancing the transmitter and receiver to the transducer crystal. | | | | | |
| Battery status | Battery status & low battery alert | | Low battery alert | n/a | Low battery alert | n/a |
| Digital depth display | Built-in | | With optional Digital Depth Indicator (DD-100) | | | |
| Operating voltage | 10.5–15 volts (12 volts nominal) | | | | | |
| Current draw | 300 mA @ 12 volts | 260 mA @ 12 volts | 220 mA @ 12 volts | 200 mA @ 12 volts | 240 mA @ 12 volts | 250 mA @ 12 volts |
| Power output | 1000 watts (peak to peak) | | | 400 watts (peak to peak) | 1000 watts (peak to peak) | 400 watts (peak to peak) |
| Frequency | Variable 160–300 kHz | 200 kHz | | | | |
| Ice-Ducer® options | Broad band Ice-Ducer® transducer | Pro-View | 12°, 19° and Pro-View compatible. | | | |
| Dimensions | 4.8"H x 6"W x 2.4"D | 4.8"H x 6"W x 2.4"D | 4.8"H x 6"W x 2.4"D | 4.4"H x 6"W x 3.5"D | 4.8"H x 6"W x 2.4"D | 4.4"H x 6"W x 3.5"D |
| Weight | 1.1 lb | 1.1 lb | 1.1 lb | 1.1 lb | 1.1 lb | 1.1 lb |

# A TRADITION OF EXCELLENCE AND KNOWLEDGE TO SHARE WITH FRIENDS AND FAMILY!

For over a half a century, anglers have started many great fishing adventures by turning on a Vexilar. Now with over a half million Vexilar units in use today, it's no wonder serious anglers proudly state:

*"They will never go fishing without their Vexilar!"*

This Owner's Manual is to serve as a foundation of knowledge to get you started using your Vexilar. Reading the sections of this manual that apply to your system will avoid confusion and actually go a long way in helping you extend the life of your Vexilar product.

It's often said, "knowledge is power," and with the knowledge from this manual we hope you will get the most out of your Vexilar product and share with other Vexilar owners who were not pro-active enough to read about their system. All the tricks, from how to adjust gain level to how to properly use the Interference Rejection system, help make a day on the water more enjoyable.

It might seem simple, but the little things matter and are often overlooked by many anglers who are in a rush to get out on the water. We thank you for taking the time to study and learn about your Vexilar system, and we hope you can also share your new-found knowledge with your friends and family.

The FL-8®SE is today's refinement of the famous, original Vexilar FL-8. This model was instrumental in the modern ice fishing transformation. With the advent of reliable, light-weight, power ice augers; highly mobile, quick-setup shelters; and the infamous "Vexilar" that let you see your bait as well as the fish, the effectiveness and popularity of the sport made a huge leap forward in the early 1990s. Gone were the days of sitting on a bucket and waiting for the elusive bite. Your new FL-8®SE is truly a part of this history.



GP0819

## FL-8®SE Range Setting

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

The FL-8®SE comes in the Genz Pack configuration.

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

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

## Transducer

The FL-8®SE comes standard with a 19° Ice-Ducer transducer. This is the widest beam angle available. You may also purchase additional transducers with narrower beam angles and/or for boat-mounted applications (see pages 72–73).

### Gain Control

Turn the Gain Control clockwise to increase the gain. Keep the gain as low as possible. The Gain Control also serves as the ON/OFF switch for the Interference Rejection feature by pushing in on the control. The red light indicates if the IR feature is on or off.

## Depth Scales

### Shallow Range 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 Range 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 it.
• D-4 = Zero to 120 feet. Read the inner yellow scale and multiply by 4.

## Interference Rejection

Interference Rejection comes on automatically when you power up the flasher. If interference from another sounder is present on the display, push the Rejection button repeatedly until it goes away or is reduced as much as possible. There are 10 settings to cycle through.

This unit is a step-up from the classic FL-8®SE unit. The FLX-12 offers a flat-screen design plus some additional features. This unit has a special Low Power Mode option that allows you to fish in extremely shallow water with great target resolution. It offers five depth ranges to 120 feet. The FLX-12 offers a special Night Mode option so the display is easier to view at night and also lights up the center depth graphics. There are 20 steps of Interference Rejection (IR) to help knock out interference from other sonar systems. If your battery is running low, the display gives a coded series of flashes long before the unit shuts down. The FLX-12 is *very* popular for open water use because of its flat screen that won't trap water and its great display visibility in sunlight.



*GPX1212*



*IPX1212*

## Low Battery Indicator

The FLX-12 series units will give the angler a low battery warning (10.6 volts) by flashing the green depth lines around the inner side of the display four times every four minutes. At 8 volts, the green depth lines will flash all the time just before the system shuts down completely (6.5 volts). All batteries are different and how long you are able to fish after the first warning will vary. Also, this feature is designed for SLA type batteries.

*Vexilar Lithium battery voltage drops much faster than SLA batteries at the end of the discharge cycle. Therefore, expect the battery to die very soon after the first low battery indications are given.*

**Gain Control**
*Keep the gain low. Increase it only enough to see clear bottom or your bait.*

**Night Mode**
*Push in on the Gain Control to dim the lights of the display for night use.*

**Interference Rejection**
*Press the button repeatedly until the interference goes away or is reduced as much as possible. There are 20 settings to cycle through.*

## Range Setting

The FLX-12 has a maximum display range of 120 feet, with five depth ranges starting at the 20 on the 0–20 scale that is marked on the front dial.

## Depth Scales

As you move deeper to find bottom, you will need to do a little math. The x2 setting means the dial is now displaying a 0–40 foot scale, the x3 is a 0–60 foot scale the x4 is 0–80 the x6 is 0–120. The 20' Low Power (LP) range reads the same as the standard 20 foot range, except using this selection puts the flasher into Low Power Mode which allows you to fish in extremely shallow water with great target resolution.

The FL-18 offers a patented split-screen flasher display. This allows you to zoom in on the bottom six feet on the left side of the screen while you watch the entire water column in real time on the right side. The Bottom Lock feature stays locked on the bottom even as the boat is bouncing up and down in big waves. The Auto Zoom Mode is fantastic for watching perch or walleye while ice fishing. The FL-18 is equipped with features like a built-in Low Power Mode for fishing waters under 20 feet. If offers five depth scales down to 200 feet, plus 10 interference rejection settings.



GP1812          PP1812D

See pages 58–63 to learn more about ice pack features.
*DD-100 not included with some packages*

## FL-18 Modes

The Mode Control is divided left to right by power output. Starting with the switch turned fully left:

**LP > BL: Low Power Bottom Lock Mode**

This mode locks the position of the bottom on the zoom side and uses a lower power output. It's great for fishing in shallow water on a wavy lake. Do not use it for ice fishing.

**LP > AZ: Low Power Auto-Zoom Mode**

This mode splits the screen into Zoom Mode and uses a lower power level. Use this in deeper weedy or turbulent waters.

**LP: Low Power Mode**

This mode uses the standard display, but at the lower power setting. Use this mode in shallow or weedy waters.

**NORM: Normal Mode**

Normal Mode uses full power and the full display. Use this for normal viewing and for a reliable starting point.

**AZ: Auto Zoom Mode**

This mode splits the screen into Zoom Mode at normal power. Use this mode for normal ice fishing conditions in deeper waters.

**BL: Bottom Lock Mode**

This mode locks the position of the bottom on the zoom side. It's great for fishing on a wavy lake. Do not use it for ice fishing.

**Gain Control**
*Keep the gain low. Increase it only enough to see clear bottom or your bait.*

**Interference Rejection**
*Press the Gain Control repeatedly until interference goes away or is reduced as much as possible. There are 10 settings to cycle through.*

**Mode Control**
*(Normal Mode selected)*

## Range Setting

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

## Depth Scales

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.
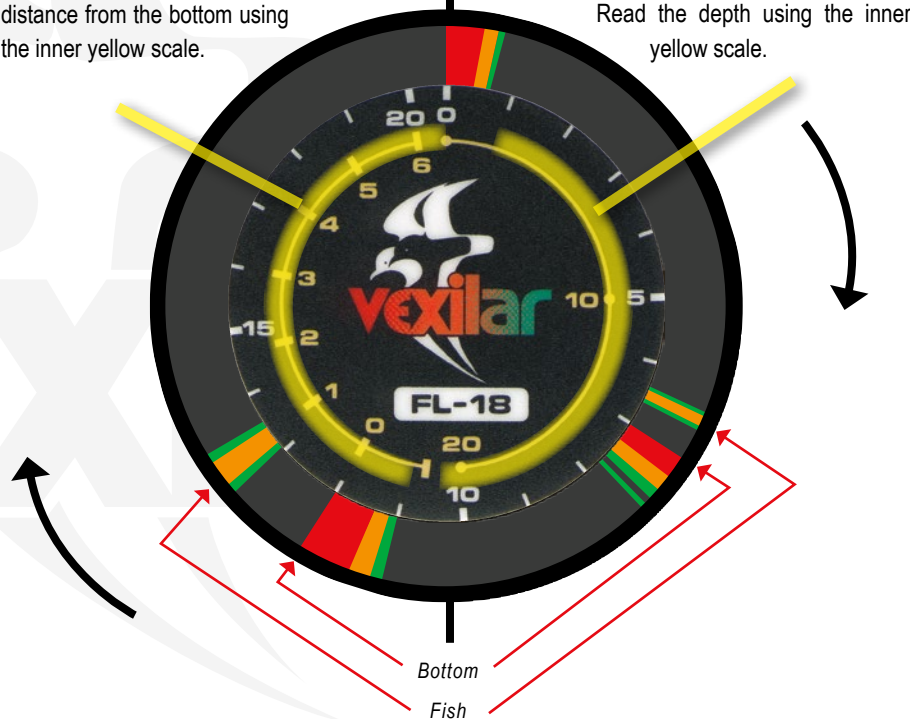
## Auto Zoom

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 shows the entire water column.

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.

**THE LEFT HALF** represents the zoom view. From the bottom up to 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 yellow scale.



*Bottom*

*Fish*

## Bottom Lock Zoom

Bottom Lock (BL) 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. 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 on the right in order for Bottom Lock to function.

**FL-18 Bottom Lock (BL)**
*Activate Bottom Lock by switching the Mode Control to the BL selection on the right or the left. The right selection operates Bottom Lock at the normal power level. The left selection operates Bottom Lock in Low Power Mode.*

## For Boat Use Only

Bottom Lock works best for boats in motion. When 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 now displayed as the bottom.

## Understanding the Zoom Modes

When Auto Zoom (AZ or BL) is active, the display is divided into two halves. When reading depths always use the yellow inner scale on the right side.

Zoom should be activated only when the transducer is submerged. If the zoom is activated and operating before the transducer is placed in the water, such as when moving from hole to hole when ice fishing, the bottom may not line up correctly with the zero mark on the zoom scale. If this happens, switch the flasher to Normal Mode and then back to Zoom to reset the feature.

## Low Power Mode

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. You will need it in very shallow or very weedy conditions. 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 6' AZ or 6' BL Modes in Low Power Mode.

Versatility is the key to success and the FLX-20 delivers! With two Auto Zoom zone options, one for zooming in on the bottom six feet and one for the bottom twelve feet, there is nowhere those bottom loving fish can hide. From the 300 foot max depth range to the Night Mode for easy viewing in low light conditions, nothing rivals the FLX-20 for superior, multi-use performance, shallow or deep, day or night.



*GPX2012*

*PPX2012D*

## FLX-20 Demo Mode

The FLX-20 incorporates a Demo Mode, so you can see the display operate in your home, as you read this manual. To turn on Demo Mode, set the Mode Control to Normal, rotate the Gain Control to Maximum, then press in and hold the Gain Control while you power ON the unit.

**Gain Control**
*Keep the gain low. Increase it only enough to see clear bottom or your bait. The Gain Control also acts as a feature select switch when you push in. See next page.*

**Interference Rejection**
*Press the Gain Control repeatedly until the interference goes away or is reduced as much as possible. There are 20 settings to cycle through.*

**Mode Control**
*Control advanced features, such as zoom, power and color. See next page.*

**Color Select**
*While the Mode Control is set to CS, push on the Gain Control to cycle through the three color palettes. See page 34.*

## Setting the Range

The FLX-20 has a total of eleven depth ranges to allow you to get maximum display resolution for the fishing conditions you are in. The primary ranges for the FLX-20 will be in the normal settings starting with 0–10 feet.

The x2 setting will mean you will need to double the depth on the display so you now have a 0–20 foot display, the x3 is 0–30, the x4 is 0–40, x8 is 0–80 foot and x10 will mean a 0–100 foot scale. You can also activate the other set of depth settings for super deep water fishing to 300 feet. See the next page for instructions.

## Mode Control

Control advanced features, such as zoom, power and color.

### CS > Color Select Mode

Use this mode when you need to adjust the color palette. The FLX-20 will keep your choice even after you turn the unit off. See page 34

### LP > AZ: Low Power Auto-Zoom

This mode splits the screen into Zoom Mode and uses a lower power level. Use this in deeper weedy or turbulent waters.

### LP: Low Power

This mode uses the standard display, but at the lower power setting. Use this mode in shallow or weedy waters.

### NORM: Normal Mode

Normal Mode uses full power and the full display. Use this for normal viewing and for a reliable starting point.

### AZ: Auto Zoom

This mode splits the screen into 6' Zoom Mode at normal power. Use this mode for normal ice fishing conditions in deeper waters.

### AZx2: 12' Auto Zoom

This mode splits the screen into 12' Zoom Mode at normal power. Use this mode for normal ice fishing conditions where the fish are higher off the bottom than 6 feet.

## Deep Mode

To activate the 300' Deep Water ranges, turn the Gain setting to "1." Then press the Gain knob in while you power on the unit. This triples the standard depth ranges. Now the display will start out at the 0–30 foot range, the x2 is 0–60, the x3 is 0–90, the x4 is 0–120, the x8 is 0–240 and the x10 setting is a 0–300 foot display on the dial. Turning the unit OFF will revert the ranges back to normal.

**Know your depth!** The 0–10 foot scale allows for an easy system to get your depth reading. If the signal shows the bottom at 6', then look at the Range control multiplier and do the math. If you are on the x3 setting, then the bottom reading is 6 x 3, or 18 feet: it's that simple!

## IMPORTANT

Zoom should be activated only when the transducer is submerged. If the zoom is activated and operating before the transducer is placed in the water, such as when moving from hole to hole when ice fishing, the bottom may not line up correctly with the zero mark on the zoom scale. If this happens, switch the flasher to Normal Mode and then back to Zoom to reset the feature.
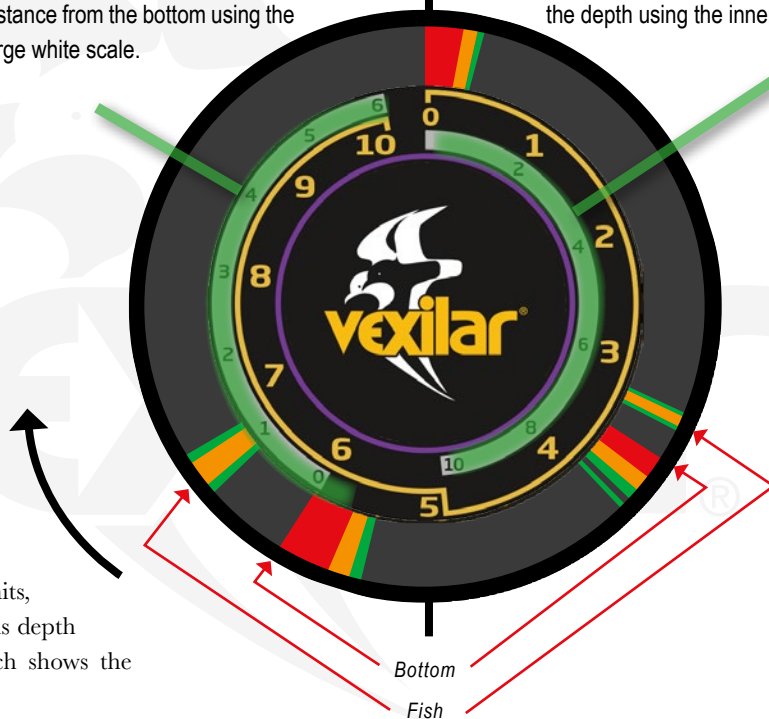
## Auto Zoom

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 up on the left. When you switch to Auto Zoom Mode, the flasher automatically selects the magnified bottom view for you, provided the flasher is set to a depth range in which the bottom is in view. There are two Auto Zoom modes: 6 foot and 12 foot.

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 depth will only appear on the right side which shows the entire water column.

**THE LEFT HALF** represents the zoom view. From the bottom up to 6 or 12 feet. Read the distance from the bottom using the large white scale.

**THE RIGHT HALF** represents the entire water column from the transducer to the bottom. Read the depth using the inner white scale.

Interpret the depth by multiplying the value indicated on the white scale by the multiplying factor here:

10' Range = 10
20' Range = x2
30' Range = x3
40' Range = x4
80' Range = x8
100' Range = x10

*Bottom*

*Fish*

## FLX-20 Low Power Mode

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. Low Power Mode has two view settings, Full Display Mode and Auto-Zoom Display Mode. Use the Low Power Modes only when you need to. Usually, you'll use it in only very shallow or very weedy conditions.

Activate the Low Power Mode by switching the Mode Control to the left. The first Low Power Mode provides a normal view. The LP-AZ Mode places the unit in the split-screen 6' Auto Zoom Mode and Low Power.

## FLX-20 Color Select

On the Mode Control switch the "CS" option stands for "Color Select." Switch the Mode Control to CS and then push in the top Gain Control while the flasher is on. The FLX-20 display will indicate which color setting you are selecting from scheme one through three.

### Color Mode 1: Classic Vexilar – Red, Yellow, Green
In this application, green shows the weakest signals below you. Commonly weeds are shown in green and even your lure will sometimes be shown as green. If you turn up the gain setting, that same green signal will change to yellow or maybe even red. Yellow is the next strongest signal and then the strongest is red. Red will be on your display at the zero mark and will show you bottom.

### Color Mode 2: Red, Yellow Only
The more you use a Vexilar flasher, the more you will be confronted with situations with a lot of green on the display. For example, this can be caused by heavy weeds, or by thick clouds of tiny bugs on some lakes at night. By removing the green, you eliminate many of the confusing signals that you normally have to fish around. In this setting, your lure will be yellow and you will notice that fish will "suddenly appear" more often since the weaker green signal is no longer there to alert you of a fish on the outer edge of your coverage.

### Color Mode 3: Red Only
This color palette will show the cleanest display and only the strongest signals and is best for when you are only interested in depth or navigation.

## FLX-20 Night Mode

Night Mode reduces the brightness of the display. This can make viewing more comfortable in low light conditions. To activate Night Mode, push in and hold the Gain Control until the brightness changes. When you power off the FLX-20, it will revert to normal full brightness.

## Low Battery Indicator

The FLX-20 will give you a low battery warning (10.6 volts) by flashing the green depth lines around the inner side of the display four times every four minutes. At 8 volts, the green depth lines will flash continuously just before the system shuts down completely (6.5 volts). All batteries are different, and how long you are able to fish after the first warning will vary. Note that this feature is designed for SLA type batteries.

*Vexilar Lithium battery voltage drops quickly at the end of the discharge cycle. Therefore, expect the battery to die very soon after the first low battery indications appear.*

Features, performance and ease of use make fishing with the highly advanced, yet very user-friendly FLX-28 a pure joy. Based on Vexilar's exclusive brushless data transfer technology, the FLX-28 delivers the industry's finest display. The sunlight-readable display offers five different color palettes and shows digital depth. The magic of the FLX-28 is the auto feature. Simply place the Ice-Ducer transducer in the water, turn the system on and start fishing! The unit automatically selects the proper interference rejection and depth range to give you maximum display resolution down to 300 feet. The FLX-28 is packed with additional features such as Weed Mode, Night Mode and Auto Zoom that make it one of the most popular sonar systems on the ice today.

*UPLI28PV shown with included Soft Pack*

**Gain Control**
*Keep the gain low. Increase it only enough to see clear bottom or your bait. The Gain Control also acts as a feature-select when you push in. See following pages.*

**Interference Rejection**
*Press the Gain Control repeatedly until the interference goes away or is reduced as much as possible. There are 20 settings to cycle through.*

**Mode Control**
*Control advanced features, such as zoom, power and color. See following pages.*

**Weed Mode**
*To enter Weed Mode, set the Mode to Normal. Then push in on the Gain Control while powering-on the unit.*

## Setting the Range

The FLX-28 is equipped with a digital depth readout on the inner display dial. "AUTO" stands for "Auto Range." You can also select ranges manually.

**Color Select**
*While the Mode Control is set to CS, push on the Gain Control to cycle through the different color palettes.
(see page 56)*

The "AUTO" setting automatically selects the correct depth range to maximize the display area. The shallowest range in the Auto setting is 0–10 feet. If you are fishing only 8 feet of water, in the "AUTO" Mode setting the entire dial of the display will be dedicated to 10 feet and less. To override the AUTO feature, simply change the Range Control to the desired depth setting. The digital display on the inner dial of your Vexilar unit will display the current depth and also the current range setting. For example, the display will read: Depth "17Ft  R-20" (for Depth Range = 20 feet).

## Auto Range Operation

As the name implies, Auto Range automatically selects the proper range for you. However, it is not infallible. It is possible to confuse the "Auto Range" operation when fishing over very soft lake bottoms or during conditions of thick ice. The software cannot find a bottom point in the return signal strong enough to trigger a lock. For this reason, there is a three second delay beginning when you put the transducer in the water before the unit attempts to lock. This gives the software time to process the signal to best determine the true bottom point.

When soft bottom conditions exist, you may need to turn up the gain initially to help the program find bottom. Then turn the gain back down when fishing. If you find the Auto setting cannot lock on bottom, the range setting will default to the 300' range. A this point, switch to a Manual Range option.

NOTE: There is nothing wrong with your Vexilar unit if it cannot lock on a range automatically. This is a very unique fishing scenario. Try switching to Normal Mode, which is full power, and then select a manual range. Also note that the digital depth is disabled in Low Power Mode.

## Low Power Option

The Low Power Mode is designed to clean up a cluttered and busy display when fishing in shallow water. The rule for using the Low Power Mode setting is this: if you turn down the gain as low as it can go in Normal Mode, and yet the signal is still too strong to get a good clean reading, switch to the Low Power Mode. Activating the LP Mode will greatly reduce the output power of your unit.

In LP Mode you should expect the lure, fish and weeds to disappear when the gain is at or near zero. You will now need to turn up the gain to fine-tune the display. You *do not* want to be in LP all the time since it will make finding a lure or fish in deeper water nearly impossible. Only use this mode when needed. Also, when trying to fish in deeper water you will need to turn up the gain, but if too high, interference from other sonar systems can make it impossible to fish.

Remember the golden rule for Gain Control: turn the gain down until the bait appears as a weak signal. If the gain is at minimum, but the bait is still a medium or strong signal, switch to LP Mode.

NOTE: The unit must be in a manual range setting to use the Low Power mode. The Digital Depth reading, Auto Ranging and Auto Zoom features *will not* work reliably while in Low Power mode.

## FLX-28 - Auto Zoom

**THE LEFT HALF** represents the zoom view from the bottom up to 6 or 12 feet. Read the distance from the bottom up using the green depth markers.

**THE RIGHT HALF** represents the entire water column from the transducer to the bottom.

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 or 12 feet. Objects above this level will only appear on the right side, which shows the entire water column.

*Bottom*

*Fish*
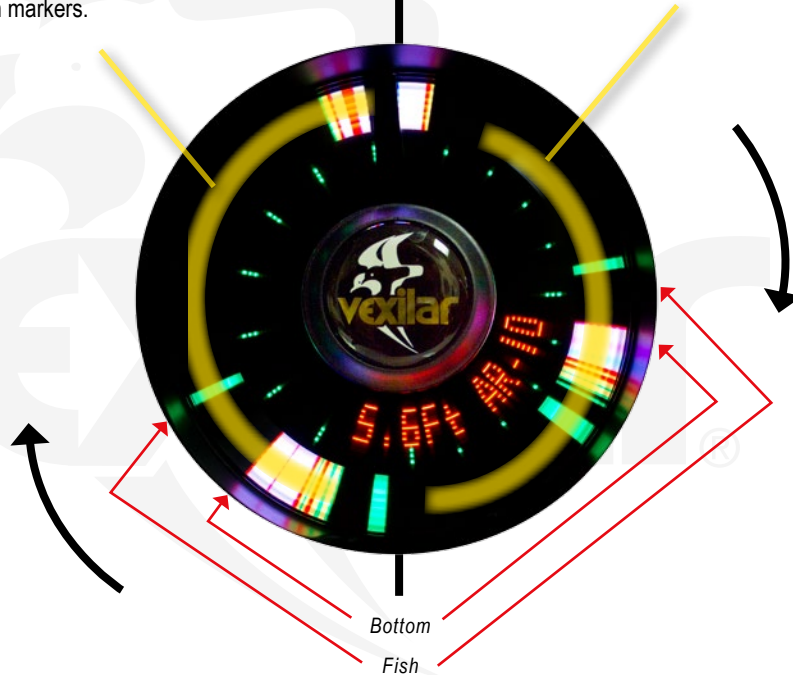
## Multi-Layer Display

The FLX-28 incorporates a three-layer LED, spinning wheel display. The outer color display layer is like our standard three-color Vexilar flasher display. However, with data transfer technology, we can offer more color palettes.

The inner layer on the display shows green marker for every foot of depth. This makes it easy to position your bait one or two feet off the bottom without guessing. As you change depth ranges, the green markers will correspond to the depth changes as shown in the table below.

The third inner layer of the display will be in red and indicates the current Digital Depth and Range settings. This area is also used to display battery levels, IR setting levels and Mode settings.

## Color Select

The FLX-28 includes five optional color palettes from which to choose. Set the Mode Control to the CS position, then press in on the Gain Control to cycle through the available palettes. See page 56 for an explanation of each.

| Green Foot Markers | Range Setting |
|--------------------|---------------|
| 1ft | 10 – 30ft |
| 5ft | 40 – 60ft |
| 10ft | 80 – 300ft |

## Weed Mode

The Weed Mode option can be used in any situation where you want to sharpen individual target separation. Most often this occurs in thick weeds where you want to avoid seeing the weed stalks as blobs so you can see the lure moving inside a tall weed bed. It also is helpful when you are fishing in schools of panfish or balls of shad.

To activate this feature, you need to be in the Normal Mode setting with the gain set to zero. Turn the unit ON while holding down the Gain Control. Once turned on, all features of your FLX-28 will work normally, but you will notice the signals on the display are slightly weaker. You may need to increase the gain level. It's possible to use Weed Mode when you're in the Low Power Mode. However, you still need to go through the Weed Mode process first.

From a technical standpoint, the unit sends a shorter transmit burst in Weed Mode which requires more sensitivity from the receiver. This is why you need to turn up the gain. The limitations of this technology make it suitable for use in 30 feet of water or less and in an area where sonar from other anglers is not present since the higher gain setting will be more sensitive to interference. When you turn the unit off, it will reset back to Normal Mode.

## LP Mode & Open Water Use

In Low Power Mode accurate digital depth readings cannot be maintained, so the Digital Depth display is disabled. Additionally, Auto Ranging may be inconsistent. Because the Auto Range technology was designed specifically for an ice fishing environment, it is recommended to use Manual Range settings for open water use.

Note that while in a Manual Range setting, the digital depth readout will only display up to 50 feet. If you lose the digital depth reading of bottom in an area known to be less than 50 feet deep, or the digital depth reading does not seem to match the flasher signal, these factors may come into play:

1. Very soft bottom
2. Too many fish (depth readings will jump to the fish and back to bottom as fish pass)
3. Too much vegetation
4. Actual depth may be deeper than the current range selected (shift to 50 foot manual range)

NOTE: When fishing in very shallow water, you will see that the FLX-28 will not register a digital depth readout when you are in waters shallower than 3 feet.

## Auto Zoom Modes

Selecting AZ Mode splits the display in half and dedicates the right side to the entire water column and the left side to just the bottom six feet of the water column. If you are a perch angler fishing in 40 feet of water, you can zoom in on the bottom six feet of the water column to greatly increase your visibility in this zone. Similarly, the AZ x2 Mode zooms in on the bottom 12 feet of the water column.

IMPORTANT: Both AZ and AZ x2 should never be used in an open water scenario. Also note that if you are in the Auto Range setting, you will need to manually reset the AZ view by shifting to normal and back to AZ when changing depths. Furthermore, if the bottom is very soft, you may need to switch to Normal Mode, increase the gain setting, then switch to back to AZ in order to lock on the top of the soft bottom. You can then lower the gain and fish as usual.

## Battery Voltage Display

Each time you turn the FLX-28 unit on, it will flash the voltage of your battery on the digital display for three seconds. The FLX-28 can work on any 12 volt power supply. If the unit displays "LOW-BATT," then the battery is down to only 10.6 volts. At 8.0 volts, the "LOW-BATT" warnings will start to blink on and off which indicates the unit is about to shutdown. At 6.5 volts the entire display will blink on and off and then shut down completely. Be sure to charge your battery to full capacity to avoid down time fishing without your Vexilar unit.

| Battery Voltage | Percent Charge |
|---|---|
| 12.7 | 100% |
| 12.5 | 80% |
| 12.3 | 70% |
| 12.0 | 60% |
| 11.9 | 50% |
| 11.7 | 40% |
| 11.6 | 30% |

*Lithium battery voltage drops faster than an SLA battery at the end of the discharge cycle. Therefore, expect a lithium battery to die very soon after the first low battery indications appear.*

## Night Mode

Night fishing in the winter months is very popular. Many find that the display of the FLX-28 is uncomfortably bright at night. Simply press in and hold the Gain Control for three seconds. The brightness of the unit will be reduced by 50%.

## Demo Mode

Here is a fun feature that the FLX-28 offers to those dreaming about ice fishing during the off season, or to be used when coaching a friend on what to expect when they go fishing with a Vexilar unit. The Demo Mode runs a simulation program that shows what a bottom signal looks like in Normal Mode setting. It also shows a fish target near the bottom and demonstrates a lure being lowered as the lure's signal moves clockwise around the dial. As the lure nears six feet from the bottom, the unit shifts to AZ Mode display which zooms in on the bottom six feet of the water column. The lure and the fish appear much larger in the AZ Mode on the left half of the display. The simulation stops the lure signal just above the fish target and jigs it up and down to trigger the fish to strike. The fish signal rises to the bait signal indicating the point at which the angler should be ready to hook the fish. This demo shows just what fishing with a Vexilar flasher is like in practice!

To activate Demo Mode, turn on the unit and select "D" on the Mode switch. All other controls will be deactivated at this point. When the Demo Mode program simulation finishes a cycle, it will automatically start again in a different color palette. From this you can determine what color display option you like best before you get on the ice.

Vexilar has delivered on the dream of developing a broad band flasher sonar with unmatched interference rejection and signal clarity. Based on the same performance platform as the FLX-28. The FLX-30ʙʙ offers the angler seven frequencies from which to choose. With 20 IR settings for each frequency, this gives you 140 combinations to kill interference once and for all!

## Broad Band Sonar

The FLX-30's Broad Band Ice-Ducer® is made from an array of dozens of small transducer crystals. They deliver a wide sonar frequency band from a 15-degree beam at 160 kHz to an 8-degree at 300 kHz. Anglers can fine-tune the display to knock out interference and sharpen target ID down to 1/4".

The FLX-30 features Night Mode, three power level settings, three zoom zones, three manual depth setting ranges to 300 feet and five color palette choices. With Vexilar's legendary sunlight-readable, 525-segment resolution display now enhanced with Broad Band technology, it is safe to say you will never look at ice fishing the same again.

**Gain Control**
*Keep the gain low. Increase it only enough to see clear bottom or your bait. The Gain Control also controls a number of other features. See following pages.*

**Mode Control**
*This sets the FLX-30's current operating mode. See following pages.*

## Setting the Range

The FLX-30 is equipped with a digital depth readout on the inner display dial. "AUTO" stands for "Auto Range." You can also select ranges manually.

The "AUTO" setting automatically selects the correct depth range to maximize the display area. The shallowest range in the Auto setting is 0–10 feet. If you are fishing only 8 feet of water, in the "AUTO" Mode setting the entire dial of the display will be dedicated to 10 feet and less. To override the AUTO feature, simply change the Range Control to the desired depth setting. The digital display on the inner dial of your Vexilar unit will display the current depth and also the current range setting. For example, the display will read: Depth "8.9Ft   AR-10" (for Auto Range = 10 feet).

# FLX-30™ʙʙ OPERATION

## Basic Concept

Most sonar systems sold today use a fixed frequency of 200 kHz. This has been well-accepted by most anglers and boaters for over 40 years. While not perfect, 200 kHz is suitable to get sonar depth readings down to 300 feet, even though most sonar systems are actually used in waters under 40 feet.

Sonar designers fully understand the limitations of a fixed frequency system, but offering several frequencies in a single system was not commercially viable until the development of Vexilar's Broad Band Ice-Ducer® transducer. For the first time, a composite transducer was made from an array of small crystals interconnected into one compact housing. The result delivers a wide spectrum of sonar frequencies in one transducer.

No one frequency is "perfect" for all situations, so the seven frequencies used for the FLX-30ʙʙ offer great options for serious anglers looking for the best possible performance from a single sonar device. For example, when fishing 300 feet of water, the powerful 160 kHz signal can be used, but when fishing in only five feet of water, the 300 kHz transmit frequency is better. With the FLX-30ʙʙ you can now adjust frequencies and power levels to get the finest sonar response possible for a given fishing situation.

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## START Mode

Before turning on the FLX-30, adjust the Mode Control to the "S" or START position. This will set the unit to general purpose default settings that perform well in nearly all fishing situations; from here it is possible to customize the performance of the unit in many ways. This mode setting makes it easy to start fishing a new lake and to remove previous customizations and start over. The display will show "FACTORY SET DONE!" for about one second.

## START Mode Default Settings

| Zoom: | OFF |
| Frequency: | 200kHz |
| Power: | High |
| Auto Range: | Shallow |
| Color Palette: | #3 (see page 56) |

*If the bottom cannot be found, the unit is most likely not getting a strong enough signal to establish a bottom reading. The display will ask you to switch to Manual Depth Range.*

With the Range Control set to Auto, when powering the unit on you may see the word "SEARCHING" for up to eight seconds. The system is looking for the bottom to establish the best depth range and Interference Rejection setting for you. Once the depth is found, the digital depth reading and the proper range setting will be shown at the bottom of the display.

## Mode and Gain Controls

The Mode and Gain Controls work in conjunction with each other. First select the Mode, then push in on the Gain Control to cycle through the Mode's options. The display will show the current setting.

## Mode Settings and Options

**Zoom (Z):** This mode controls the Auto Zoom settings. Cycle through the available zoom ranges: 6', 12', 18' and OFF.

**Frequency (F):** This mode controls the FLX-30's Broad Band setting. Cycle through these frequencies: 160, 180, 200, 225, 250, 275 & 300 kHz (see next page).

**Power (P):** Choose the output power in this mode. Cycle through Low, Medium and High.

**Range (R):** Choose a ranging method in this mode. Auto Range depths will be adjusted automatically from these settings: 10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 120, 160, 200, 240 and 300 feet. Cycle to one of the manual range groups:

      Shallow Range Group: 10, 15, 20, 30 and 40 feet
      Middle Range Group: 50, 75, 100, 125 and 150 feet
      Deep Range Group: 175, 200, 225, 250 and 300 feet

**Color (C):** Choose the color palette you like best while in this mode (see page 56). Night Mode is also activated from this mode (see page 53).

## Multi-Layer Display

The FLX-30 incorporates a three-layer LED, spinning wheel display. The outer color display layer is like our standard three-color Vexilar flasher display. However, with data transfer technology, we can offer more color palettes.

The inner layer on the display shows green marker for every foot of depth. This makes it easy to position your bait one or two feet off the bottom without guessing. As you change depth ranges, the green markers will correspond to the depth changes as shown in the table in the lower-left of this page.
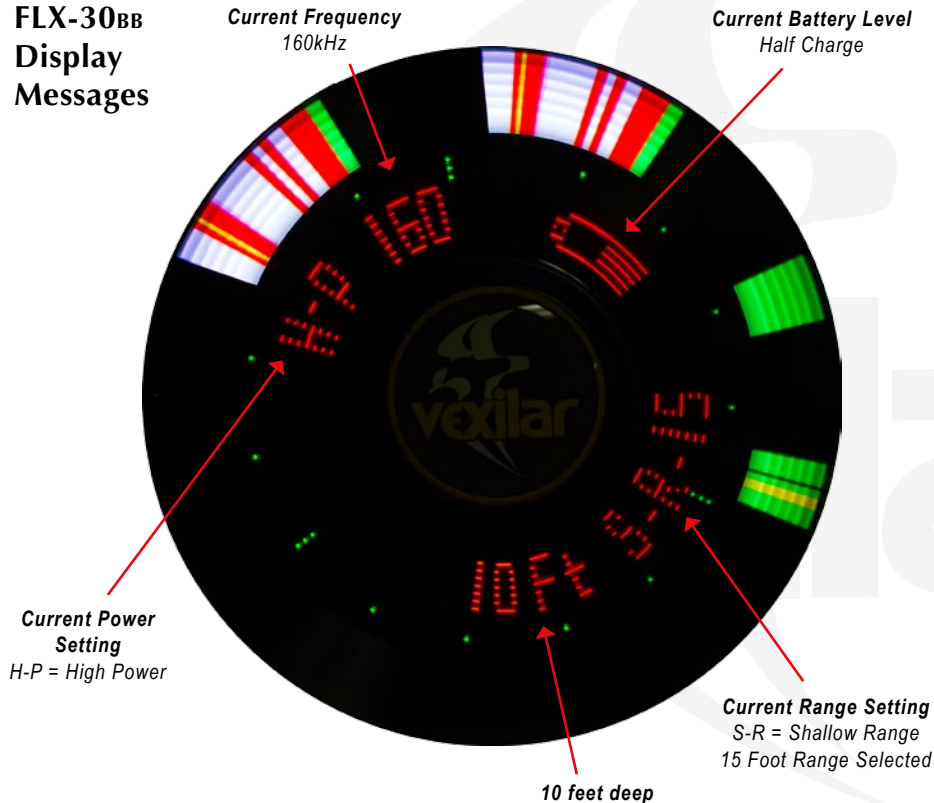
The third inner layer of the display will be in red, where you find your Digital Depth and Range settings. This area is also used to display battery levels, IR setting levels and your mode settings.

## Frequency vs Beam Angle

Each frequency has a different beam angle. The lower the frequency, the wider the area of coverage.

| Green Foot Markers | Range Settings |
|---|---|
| 1ft | 10 – 30ft |
| 5ft | 40 – 75ft |
| 10ft | 80 – 300ft |

| Frequency | Beam Angle |
|---|---|
| 160kHz | 15° |
| 180kHz | 13° |
| 200kHz | 12° |
| 225kHz | 10° |
| 250kHz | 9° |
| 275kHz | 8.2° |
| 300kHz | 7.8° |

## FLX-30BB Display Messages

**Current Frequency**
*160kHz*

**Current Battery Level**
*Half Charge*

**Current Power Setting**
*H-P = High Power*

**Current Range Setting**
*S-R = Shallow Range*
*15 Foot Range Selected*

**10 feet deep**

## Message Meanings

### SEARCHING
The FLX-30 is adjusting to the proper range.

### USE MANUAL RANGE
The FLX-30 cannot lock on the bottom.

### LOW BAT
The battery voltage is getting low. Expect the FLX-30 to stop working soon once the LOW BAT message begins flashing.

### Power Level
H-P = High Power
M-P = Medium Power
L-P = Low Power

### Range Options
S-R = Shallow Range
M-R = Middle Range
D-R = Deep Range

## Setting the Frequency

The FLX-30 Broad Band sonar has the ability to operate on a frequency tailored to your specific fishing situation. The "F" on the Mode Control stands for "frequency." Set the Mode to F and then push in on the Gain Control to change the frequency.

The standard rule with frequency is this: the lower the frequency, the wider the beam angle, and the higher the frequency the narrower the beam angle. If you feel the display has too much clutter, interference, large signal sizes, or you start seeing strange things floating in the water like freshwater shrimp, zoo plankton or even thermal stratification in the water column, cycle your unit through the seven frequency options to see if you can improve the view. You will see the current frequency selected located in the 11 o'clock position on the main dial.

Expect to adjust the Gain level to maximize the performance of each frequency. With a standard 200 kHz system, anglers should keep the gain as low as possible at all times, but with the FLX-30, a higher gain setting is required the higher the frequency selected.

## Auto Range Operation

Auto Range automatically selects the proper range for you. However, it is not infallible. It is possible to confuse the "Auto Range" operation when fishing over very soft lake bottoms or during conditions of thick ice. The software cannot find a bottom point in the return signal strong enough to trigger a lock. For this reason, there can be an eight second delay beginning when you put the transducer in the water before the unit attempts to lock. The display will show SEARCHING as it processes the signal to best determine the true bottom point.

When soft bottom conditions exist, you may need to turn up the gain initially to help the program find bottom. Then turn the gain back down when fishing. If you find the Auto setting cannot lock on bottom, the display will request that you switch to a manual range group. Turn the Range Control to the right until you see the bottom appear. Also, switch to High Power.

NOTE: There is nothing wrong with your Vexilar unit if it cannot lock on a range automatically. This is a very unique fishing scenario. Try switching to 200kHz, a manual range or moving to a new location. Also note that the digital depth display may be unreliable in this type of condition.

## FLX-30BB - Auto Zoom

**THE LEFT HALF** represents the zoom view from the bottom up to 6, 12 or 18 feet. Read the distance from the bottom up using the green depth markers.

**THE RIGHT HALF** represents the entire water column from the transducer to the bottom.

*Green hash marks will appear every foot on the right side to depths of up to 30 feet, every five feet for depths to 60 feet and every ten feet thereafter.*

*Green hash marks will appear every foot on the left side.*

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, 12 or 18 feet. Objects above this level will only appear on the right side, which shows the entire water column.

*Bottom*

*Fish*

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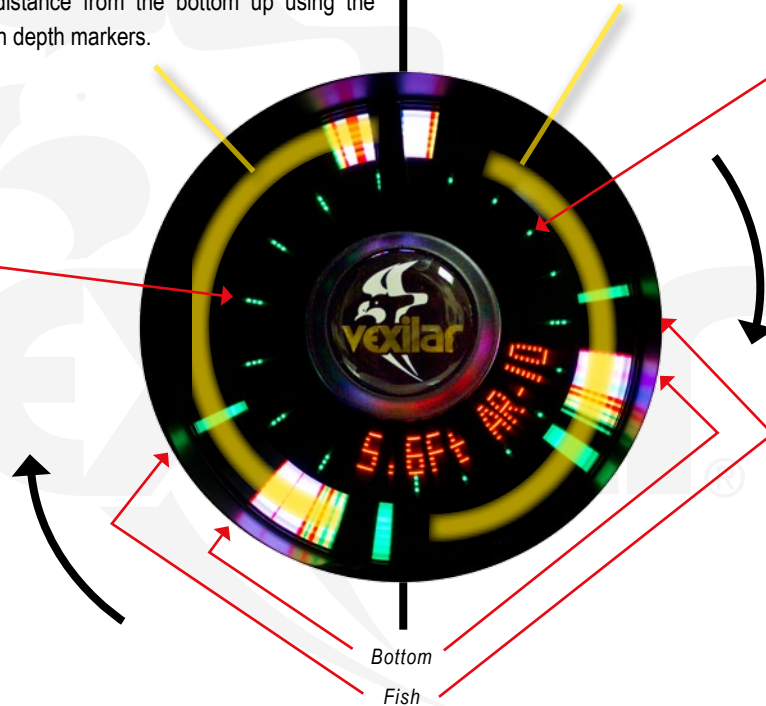
## Power Modes

The "P" on the MODE Control stands for Power. The unit will start in the default setting, and the main dial will show the designation "H-P" for High Power. Adjust the Mode Control to the "P" setting, then push-in on the Gain Control once. The display will show "M-P" for Medium power for two seconds. Push in on the Gain Control again to switch to the "L-P," or Low Power Mode, and again to cycle back to "H-P."

## Depth Range Groups

The default range group is the Shallow or "S" ranges, which are 10, 15, 20, 30 and 40 feet. To go deeper with Manual Ranges, set the Mode Control to the "R" setting and then push in on the Gain Control once to select the Middle or "M" depth ranges. Now the ranges are 50, 75, 100, 125 and 150 feet. Tap it again to go deeper. The Deep or "D" depth ranges are 175, 200, 225, 250 and 300 feet. Tap once more to go back to the default Shallow ranges.

## Interference Rejection

Interference Rejection (IR) is a feature that allows you to fish around other sonar systems without seeing a lot of random signal flashes or slow-moving signals that rotate around your display. IR, as it is called, is an automatic feature on the FLX-30 if the transducer is in the water when the system is turned on. The sonar system listens for other sonar signals and selects a clean setting for you.

To manually adjust IR settings, press in and hold the Gain Control for two seconds while in any mode setting *other* than "C." Press again within five seconds to sample another IR setting from 1 to 20. After five seconds since the last press of the Gain Control, the FLX-30 will resume normal operation.

There are 20 IR settings for each frequency. With seven frequencies available, the FLX-30 offers 140 total Interference Rejection options.

## Color Select

The FLX-30 includes five optional color palettes from which to choose. Set the Mode Control to "C," then press in the Gain Control to cycle through the available palettes. See page 56 for an explanation of each. The default setting is #3 (white, red, yellow, green).

## Battery Level Display

The battery display indicator is programmed for the Vexilar Lithium battery. If you put in an SLA battery replacement, you may wish to shut off the battery symbol and warnings. Set the Mode Control to "C." Turn gain level to 10. Press in the Gain Control and turn the unit on at the same time. The battery level display will stay off until you repeat the process.

## Night Mode

The sunlight-readable display on the FLX-30 may actually start to cause discomfort if left at full brightness for a long period of time in a dark environment. Night Mode is an option that dims the display to make it comfortable to watch for hours at night with no eye stress. To access this feature, set the Mode Control to "C" and press and hold in the Gain Control for two seconds. The brightness of the display lights will be cut by nearly 50%. Repeat the process to return to standard brightness or turn the unit off and then on again.

## Battery Voltage vs Percentage of Charge Remaining

| Battery Voltage | Percent Charge |
|-----------------|----------------|
| 13.0 or more | 100% |
| 12.9 | 80% |
| 12.8 | 60% |
| 12.7 | 40% |
| 12.6 | 20% |
| 12.5 | 0% LOW BAT Steady |
| 12.4 | 0% LOW BAT Flashing |

*These values are based on the Vexilar Lithium battery.*

## LP Mode & Open Water Use

In Low and Medium Power Modes, accurate digital depth readings cannot be maintained, so the Digital Depth display is disabled.

The Auto Range technology was designed specifically for an ice fishing environment. It is recommended to use Manual Range settings for open water use.

If you lose the digital depth reading of bottom, or the digital depth reading does not seem to match the flasher signal, these factors may come into play:

1. Very soft bottom
2. Too many fish (depth readings will jump to the fish and back to bottom as fish pass)
3. Too much vegetation
4. Actual depth may be deeper than the current range selected (shift to a deeper range)

NOTE: When fishing in very shallow water, you will see that the FLX-30 will not register a digital depth readout when you are in waters shallower than 3 feet.

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## Advanced FLX-30BB Applications

Why does anyone need seven frequencies? Why would anyone ever change the power setting or adjust the color palette? These questions and many more may come to mind if you simply use the "AUTO" Mode setting to get the job done.

Sitting at home, these questions are logical, but as you spend time on the water, you will realize the system can do more and more for you. The FLX-30 was designed to be the ultimate in interference rejection technology offering 140 options, a major benefit to having seven frequencies from which to choose. So in time you will master and be able to customize the FLX-30 for specific lakes and your style of fishing.

## Fishing in Weeds

Fish love weeds, but can be caught in and around them with great consistency. Sonar does not "know" what reflected its signals, and all that raw data comes into the receiver and is displayed as very confusing lines and colors on the dial. Realize the wider the cone angle the more weeds you will see. The 160 kHz frequency transmits a 15 degree "cone" and the 300 kHz about 8 degrees. Changing the frequency changes the cone angle and will reduce the amount of weeds shown on the display. In this case, wider is not better!

Dialing back the intensity of the sonar output eliminates weak signals, but the strongest signals remain. A live fish will be more sonar sound reflective than a soft weed stem, so reduce the power to Medium or Low Power and you can see fish in weeds!

## Fishing Suspended Fish

Many anglers love to fish 15–18 feet down over 50 feet of water for suspended panfish or trout. When using the Auto Range setting the entire display is dedicated to the 50-foot depth you are fishing. By switching to manual depth range of 0–20 feet, you can ignore the bottom 30 feet of unproductive water. The signal size and clarity of the school and your lure below you is greatly improved.

## Fishing in a School

Adjusting gain levels and working through the frequency settings, you will find a combination that "pulls apart the school." For example, this will break the "blob" of a tight grouping of fish sitting at 25 feet into a half dozen key targets that are different in color from the rest of the school. If you have seen a Vexilar unit working in the past, you understand that green flashes are the weak signals. This also applies to the FLX-30, but the strongest color is white not red. By adjusting frequencies and power levels, you can focus on only the fish that are directly below you in white! You may see some

fish at 20 feet in green signal, while at 24 feet you see a strong white signal. With these settings you can drop your lure past the green fish signals and specifically target that white fish signal. This function is very productive.

## The Ultimate Color Display

Do the colors on the display make a difference while fishing? For sure they do, and it is good to get familiar with them. The classic three-color Red, Yellow Green display is only the beginning. With five color palettes from which to choose, you can customize the display that is most enjoyable for you. Option #5 is helpful for people with color blindness.

Generally, the more distinct colors displayed at one time, the more accurate the interpretation of the flow of sonar data. However, in some cases too much data is confusing. Color option #2 is offered to knock-out the weaker signals (or as some call it "clutter") and only show Yellow and Red signals. This is ideal in weeds or at night when bugs are hatching, when the display lights up with so many green signals, you cannot see your lure. In this mode the green strength signals are removed leaving only the stronger yellow and red signals for targeting fish and your lure, *not* tiny bugs.

To gain the true benefits of this multi-color display, you will need to adjust power and frequency settings.

## Decide the Level of Performance You Need

You can see in these various scenarios, you have control to focus on a specific depth range to maximize resolution; you have control of power levels to sharpen sonar signals and show or hide what you want; you have control over frequency to adjust beam size and kill any interference.

Knowing how to adjust these three variables to fit your personal needs is just that—a personal thing. In the world of sonar, the concepts and specifics can go right out the window in practice. In one application the wider 160 kHz frequency might deliver a sharper and cleaner signal than 275 kHz. Gain levels might need to be adjusted slightly to make your lure just the right size so you can even see your minnow on the hook!

In the end, trial and error is a good thing; finding the settings that work for your style of fishing is all that really counts, and the FLX-30 gives you those options!

# FLX-28™ AND FLX-30™ʙʙ COLOR PALETTES

Color Modes allow you to tailor the display to both control the presentation of the information displayed, as well as fit your viewing comfort.

*Refer to this manual the for steps required to enter into Color Select Mode for your model. Page 40 for the FLX-28, and page 52 for the FLX-30ʙʙ.*

## Color Mode 1: Classic Vexilar - Red, Yellow, Green

In this application, green shows the weakest signals below you. Commonly weeds are shown in green and even your lure sometimes would be shown as green. If you turn up the gain setting, that same green signal will change to yellow or maybe even red. Yellow is the next strongest signal and then red, which will be on your display at the zero mark and again to show you bottom. The beauty of the Vexilar three-color system is that you are able to adjust your gain so that a fish target at the outer edges of the signal will be green, and as it approaches your lure will shift to yellow and then red when the fish is directly below the transducer.

## Color Mode 2: Red and Yellow Only

The more you use a Vexilar flasher, the more you will be confronted with situations with a lot of green on the display. For example, this can be caused by heavy weeds, or by thick clouds of tiny bugs on some lakes at night. By removing the green, you eliminate many of the confusing signals that you normally have to fish around. In this setting, your lure will be yellow and you will notice that fish will "suddenly appear" more often since the weaker green signal is no longer there to alert you of a fish on the outer edge of your coverage.

## Color Mode 3: White, Red, Yellow, Green (Default)

While color setting #2 limits some of the signals that are displayed, color option #3 does the opposite. Green once again represents the weakest signal, yellow stronger signals, red now shows the *second* to the strongest, and finally white represents the strongest signals. It is often called a "Christmas Tree" because of the wide variety of colored lights you will see when fishing over a large group of fish. When you see a fish in red turn to white, you know the fish is inches from your lure. The advantage of the four-color setting is seeing more individual targets, which might be too confusing to some, but you will gain the ability to target specific fish.

## Color Mode 4: White, Red, Yellow, Green, Blue

In all other color modes, filtering is used to limit the total signal level shown on the display. The micro-processor decides when a target is worthy of your attention or not. The five-color option turns all filtering off to show you nearly every signal possible. The dynamic range of colors allows *you*, not the computer, to interpret the sonar signals. On one hand, you might think having all this information is a good thing, but if you can see the curl of your fishing line as a blue signal in the display, are you happy or just confused? To skilled flasher anglers, having five colors gives you more advanced warning of nearby fish, better understanding of fish attitudes and even indication of whether or not your bait is still on the hook. Give it a try and see if you like it.

## Color Mode 5: White, Red, Blue

Designed to function *exactly* like color option #1, but helps people who are color blind and have difficulty distinguishing the red/yellow/green color palette. Setting #5 is an alternative that has proven to be much easier to use for these people. Blue replaces green as the weak signal color, red replaces yellow as the medium strength color, and white represents the most intense sonar signals. Anyone can use this color option.

# THE GENZ PACK SYSTEM CASE

The Genz Pack offers a great value in an affordable ice fishing pack. It includes all of the basic components needed to ice fish with a Vexilar FL series flasher immediately. A key factor of the Genz Pack is that it fits on top of a five gallon bucket (not included).

**Battery and Charger**
*12 Volt - 9 Amp SLA Battery with Charger*

**Accessories**
*Use the pre-drilled holes for Vexilar add-on accessories, such as the FlexLight and DD-100. See pages 70 & 71.*

**Carry Case**
*The Genz "Blue Box" is a two-piece system made from a high density polyethylene.*

*GP0819 Shown*

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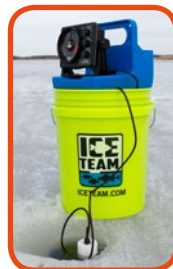*The large mounting base offers ample room for the Vexilar flasher, or other brands of sonar and GPS.*

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

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

**Easy Charge Jack**
*Charge the battery here. You do not need to disconnect the battery connections while charging.*

**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 most styles of Ice-Ducers.*

**VEXILAR®**
MARINE ELECTRONICS

**Eye-Bolt**
*Insert the transducer support eye-bolt at the front of the unit. Be sure to remove the float from the transducer cable when using the eye-bolt. The eye-bolt is commonly used on lakes with thin ice conditions.*

# THE PRO PACK II CASE

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 and Charger**
*12 Volt / 9 Amp-Hour SLA battery with 1 Amp digital automatic charger.*

**DD-100**
**Digital Depth / Battery Status**
*Shows the current depth in an easy-to-read number and the level of charge in the battery.*
*See page 69 for instructions.*
*(Not included with all packages)*

*PPX2012D shown*

**IPX1212**
*Uses Pro Pack II case, but does not include the DD-100.*

**Tackle Box**
*The Vexilar tackle box fits into a convenient 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.*

**Eye-Bolt Storage**
*The transducer support eye-bolt fits into a dedicated storage location here.*

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

**Accessories**
Use the pre-drilled holes for Vexilar add-on accessories such as the FlexLight. See pages 70 & 71.

**Cable Storage & 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.

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

**Easy Charge Jack**
Charge the battery here. Connect the Easy Charge Jack to begin the charging process. Be sure to disconnect from the battery when putting the system away for more than a month, but remember to re-connect it before recharging once it comes out of storage or the battery will not receive a charge.

**Eye-Bolt**
Insert the transducer support eye-bolt here, or into the pack's front or far side. Be sure to remove the float from the transducer cable when using the eye-bolt.

# THE ULTRA PACK CASE

The Ultra Pack carry case is rugged and packed with features: a tackle box, remote accessory posts, a strong float-holding handle, four rod holder mounting locations, an enclosed battery compartment and master power switch.

FLX-28 & FLX-30ʙʙ systems come standard with a 12 volt / 9 amp-hour Vexilar Lithium battery & digital charger.

*FLX-28 Shown*

**Float Holder**
*Store the Ice-Ducer float here.*

**Eye-Bolt Storage**
*The transducer support eye-bolt fits into a dedicated storage location here.*

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

**Enclosed Battery Compartment**
*The battery is enclosed within the base here. Fits both Vexilar Lithium and standard SLA batteries.*

**Master Power Switch**
*Use this switch to turn all power on and off including the power to the external posts. Remember that this switch must be ON to charge the battery.*

**External Power Posts**
*Optionally use these posts to power external accessories. (2 amp max output)*

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

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

**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.

**Accessories**
Use the pre-drilled holes for Vexilar add-on accessories, such as the FlexLight. See pages 70 & 71.

**Soft Pack**
Soft Pack carrying case comes standard with all FLX-28 and FLX-30 Ultra Packs.

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

**Easy Charge Jack**
Charge the battery here. Connect the Easy Charge Jack to begin the charging process. Be sure to disconnect from the battery when putting the system away for more than a month, but remember to re-connect it before recharging once it comes out of storage or the battery will not receive a charge.

# SLA BATTERY CHARGING

(Sealed Lead Acid)

Instructions for 1 Amp Digital Automatic Charger
*(model V-410)*

1. Allow the battery to warm up before charging. This makes it easier for the charger to charge the battery and the battery is more accepting of a charge.
2. Plug the charger into a wall outlet, verify that it is operating by noting the illuminated **green** light.
3. Connect the charger to the Easy Charge Jack attached to the unit. The charger's light will switch to **red**, indicating that it is connected correctly and the battery is charging.
4. Keep the charger plugged in and connected until the **red** light has changed to **green**. This indicates the battery is at full charge.
5. Unplug the charger from the wall outlet and disconnect from the battery.

Charging times will vary depending on how much the battery has been drained. If the battery has been completely drained (approx. 24 to 30 hrs. of use on a 9 amp battery) the battery will require about nine hours of charging.

IMPORTANT: If you have an Ultra Pack system, be sure the Master Power switch is **on** and the flasher is turned **off** for charging. Once the battery is fully charged and the charger's light returns to **green**, the charger is then operating in a "Maintenance Mode." At this stage, the charger can remain connected to an SLA battery indefinitely and the battery will be maintained at full charge.

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, and that all power is switched off before putting it away for storage.

## *Remember to recharge after each use!*

## Charger Troubleshooting

A **flashing red light** indicates that the battery is connected in reverse. Check to be sure the red wire is attached to the positive battery terminal and the black wire is connected to the negative.

If the light **never turns red** and all connections are good, this indicates that the battery is not accepting a charge. Leave the charger connected so voltage will be applied. Later, unplug the charger, wait one minute, then plug it back in. If the light does not change to red to show the battery has accepted a charge, the battery will need to be replaced.

# SLA BATTERY MAINTENANCE

Keeping the Sealed Lead Acid battery in top condition is the key to your Vexilar system's reliability. Follow these basic tips and you can expect years of dependability from your Vexilar equipment:

## SLA Battery Do's

- Allow the SLA battery to **fully** recharge at room temperature before use. Recharge the battery **after each use**.
- Give cold batteries extra time to charge. Charge at room temperature if you can.
- Keep flames, sparks and metal objects away from batteries and terminals.
- Keep the battery clean and dry.
- Charge periodically during battery storage.
- Disconnect the battery or turn the Master Power Switch **off** when not in use.

## SLA Battery Don'ts

- Do not over-discharge the battery. You should never drain a battery beyond 80%, meaning less than 20% left. Make sure any other devices are disconnected from the battery before storage.

- Do not overcharge the battery. Measure the voltage of the battery while charging. It should never go over 15 volts. Your Vexilar charger is designed to provide an optimal charge to your battery. Please only use Vexilar chargers.
- Do not damage the battery or terminals by dropping. Your battery is heavy, but fragile. Take care that it doesn't get banged around or dropped.

## Common Problems

- **Battery gets hot**: A battery that gets hot while charging has become "resistive." Current passes through it, but the battery will not charge. The battery must be replaced.
- **Battery recharges for a short time, even when full:** This means the battery is not accepting a charge. The capacity of the battery has been diminished. The battery should be replaced.
- **Battery will not charge:** If you connect a room-temperature battery and the charger will not start, the battery may be over-discharged. When this happens, the charger does not even recognize it has been connected to terminals. Leave the charger connected to see if the battery will recover. If it will not accept a charge within 24 hours, the battery should be replaced.

# VEXILAR LITHIUM CHARGING

Instructions for 1 Amp Digital Automatic Charger
*(model V-410)*

1. Allow the battery to warm up before charging. This makes it easier for the charger to charge the battery and the battery is more accepting of a charge.
2. Plug the charger into a wall outlet, verify that it is operating by noting the illuminated **green** light.
3. Connect the charger to the Easy Charge Jack attached to the unit. The charger's light will switch to **red** indicating that it is connected correctly and the battery is charging.
4. Keep the charger plugged in and connected until the **red** light has changed to **green**. This indicates the battery is at full charge.
5. Unplug the charger from the wall outlet and disconnect from the battery.

IMPORTANT: Out of the box, your Vexilar Lithium battery is only 50% charged. **You must charge it fully before first use**.

# CARE AND MAINTENANCE

The power supply options for fishing are changing rapidly. Now anglers can use the traditional SLA (Sealed Lead Acid) battery for their Vexilar system or the next generation of battery, Vexilar Lithium. As with all batteries, its maintainance is the key to years of reliable use. Understand that not all lithium batteries are the same. The Vexilar Lithium battery has been specifically designed to work with the V-410 charger. Also, please do not attempt to use a Vexilar V-410 charger on other brands of lithium battery and assume the charger will properly charge the battery.

## Vexilar Lithium Do's

- Recharge the battery after every use even if the battery status indicator says the charge is at 100%.
- **Disconnect the charger as soon as the charge is complete.**
- Charge the battery only when it is warm.
- Unlike the optional V-410L, the standard V-410 charger is *not* a rapid charger, expect to charge your battery over-night after each fishing trip. Twelve hours of charging may be required after a long weekend of fishing.
- It is okay to store the battery over the summer at 30–50% of capacity, but for longer periods of storage, charge every few months.

## Vexilar Lithium Don'ts

- Do not keep the charger connected to the battery after the charge is complete (light is green).
- Never interrupt the charging cycle once it has begun. This will cause the charger to react as if the battery is already charged and stop charging.
- A sudden drop is bad news! The battery contains a specialized circuit called the BMS. If this circuit is damaged, the battery will go dead to protect itself. This is not repairable, and the battery will need to be replaced.
- Never puncture or expose to 150 or more degrees F.
- Never submerge the battery. It is water-resistant, but if submerged, it will fail and cannot be repaired. This type of accident is not covered under warranty.
- Do not use any brand of charger other than **Vexilar** to charge this battery.
- The Vexilar Lithium battery was designed to be charged with the Vexilar V-410 or V-410L charger. **Do not** attempt to charge other brands of lithium batteries with Vexilar chargers.
- It is best to *not* store the battery when it is fully discharged for a long period of time.

# BATTERY WARRANTIES

## Pro-Rated SLA Battery Warranty

The battery warranty is covered under a pro-rated performance guarantee. Failure to properly care for the battery is not the responsibility of Vexilar. Here are the details of the battery coverage from the date of purchase (proof of purchase will be required):

• Less than thirty days from purchase date – full replacement
• Less than six months and greater than thirty days – $12.00
• Greater than six months and less than one year – $20.00
• Over one year and less than two years – $25.00
• Over two years – no warranty – new purchase price.

## Vexilar Lithium Warranty

The Vexilar Lithium battery has a full replacement warranty, two years from date of purchase. The battery must not have been submerged, damaged or improperly charged.

*All costs do not include shipping.*

# DD-100 DIGITAL DEPTH INDICATOR

The DD-100 is Vexilar's first smart digital indicator display that offers both digital depth and a battery status indicator when you push the "push to test button." The DD-100 will work with all Vexilar FL/FLX series of flashers, including older Hondex, SI-TEX and Micronar FL-8® models. Vexilar's DD-100 gives anglers what they have been asking for, "Digital Depth!"

The digital depth display will always give a depth reading as long as your Vexilar FL flasher is turned on and the transducer is in the water. The digital depth portion of the indicator will work even if the unit is not in the correct depth range. This will allow you to set the flasher to the best depth range. If the display is blinking or the depth numbers are going up or down rapidly, it could be that you're over a huge school of fish or bait fish *or* the bottom is irregular.

The DD-100 was designed to fit in place of the popular D-130 or T-130 battery indicators which Vexilar has been selling for years. You can easily outfit your Pro Pack, Ultra Pack or Genz Pack with the DD-100. The DD-100 not only gives you digital depth, but also gives you the battery status of an SLA battery by pressing the button.

The only time you will see a battery status is when you push the "push to test button." The SLA battery status is given in percentages of voltage remaining in the battery. For example, if you push the "push to test button," and it reads 70%, that means your SLA type battery is at 12.2 volts, 100% = 12.7 volts and 0%=11.0 volts.

Current draw: 124uA (micro amps) when off and 21mA (milliamperes) when on.
Note: This is not a charge indicator. It will give only current status of an SLA battery's voltage. *(Not compatible with Vexilar Lithium batteries.)*
Note: Flasher must be in Normal Power Mode (not LP Mode or while using an S-Cable) to get a reliable bottom signal.

# FLASHER ACCESSORIES

## Ultra Pack Carry Case - UC-100
This portable case has all the features. Upgrade your older system or build a custom new system. Includes D-130 SLA Battery Status Indicator.

## Pro Pack II Carry Case - PC-100
The latest generation of our most popular portable carrying case.

## Genz "Blue Box" Carry Case - BC-100
A solid carrying case for your Vexilar flasher or other electronics.

## S-Cable - S-140
The suppression cable reduces your flasher's output power. This allows clearer readings in shallow or cluttered waters.

## Mag Shield - MS0001
Mag Shield both magnifies and protects the FL-8®SE or FL-18® display. *(Not compatible with other models.)*

## Ultra/Pro Soft Pack - SP0007
Soft Pack for Pro & Ultra Carry Cases encloses and protects the system. Offers a clear zippered window and access locations.

## Genz Pack Soft Pack - SP0005
Soft Pack for Genz Pack protects the system. Offers Velcro seal-able access locations and side pocket storage.

## Flasher Cover - COV001
Neoprene cover will protect the flasher face during transport and storage. *(Not for FL-8®SE or FL-18.)*

## Support Arm - TSA001
Use this support arm in place of the Ice-Ducer® float. Helps prevent fish tangling around the cable.

## L-202
**FlexLight**
with UV light mode for glowing lures plus a blinking white safety light. Runs on a single AA battery (not included).

## Pro-View Ice-Ducer - TB0051

The ultimate in beam precision and flexibility. Compatible with all FL/FLX series flashers. *(Works with FLX-30BB at 200kHz only.)*

## Pro Mount - SMC001

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

## A.C.E. Adhesive - ACE001

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

## Beverage Holder - CH-100

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

## GLO-RING - VGR-001

Works like a Vexilar carry case rod holder, but inside the ring are eighteen super bright, UV LEDs to charge a lure instantly with 360-degree coverage. Blast your lure with UV light by simply lowering it into the lighted ring for a few seconds.

## Digital Depth & Battery Level - DD-100

Shows the current depth and level of charge as a percentage left in the battery. For SLA batteries only.

## Battery Status Indicator D-130

Shows percentage of battery remaining, plus re-charging status. SLA batteries only.

## Tackle Tote - TT-100

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

## Accessory Plug PCDCA1 / PCDCA4

Power your FL/FLX unit via an automotive or ATV power jack. (Not for charging.)

# TRANSDUCER OPTIONS

## Transom Mount High Speed Styles (25' Cable)

• TB0030 - 9° Cone Angle
• TB0044 - 19° Cone Angle
• TB0084 - 12° Cone Angle
• TB0045 - Dual 9/19° Cone Angle*

*Transom style transducers include the mounting bracket and have 25 feet of cable. Conversion kits include the transducer, flasher mounting bracket, power cable and installation hardware.*

## Transom Style Conversion Kits

• TK-144 - 19° for the FL-8SE and FL-18
• TK-244 - 19° for the FL-12, FL-20, FL-22 & FLX Series
• TK-184 - 12° for the FL-8SE and FL-18
• TK-284 - 12° for the FL-12, FL-20, FL-22 & FLX Series
• TK-130 - 9° for the FL-8SE and FL-18
• TK-230 - 9° for the FL-12, FL-20, FL-22 & FLX Series
• TK-145 - Dual 9/19° for the FL-8SE and FL-18*
• TK-245 - Dual 9/19° for the FL-12, FL-20, FL-22 & FLX Series*
• BK0044 - Suction cup mount for all of the above High Speed Transducers.

## Puck Styles (25' Cable)

*Puck style transducers include a trolling motor mounting tie and A.C.E. adhesive for in-hull mounting. All have 25 feet of cable. Conversion kits include the transducer, flasher mounting bracket, power cable, and installation hardware.*

• TB0023 - 19° Cone Angle
• TB0087 - 12° Cone Angle
   • TB0027 - 9° Cone Angle
      • TB0032 - Dual 9/19° Cone Angle*

*Dual beam transducers include a beam switch assembly.*

## Puck Style Conversion Kits (25' Cable)

• TK-123 - 19° for the FL-8SE and FL-18
• TK-223 - 19° for the FL-12, FL-20 FL-22, & FLX Series
• TK-187 - 12° for the FL-8SE and FL-18
• TK-287 - 12° for the FL-12, FL-20, FL-22 & FLX Series
• TK-127 - 9° for the FL-8SE and FL-18
• TK-227 - 9° for the FL-12, FL-20, FL-22 & FLX Series
• TK-132 - Dual 9/19° for the FL-8SE and FL-18*
• TK-232 - Dual 9/19° for the FL-12, FL-20, FL-22 & FLX Series*
• BK0023 - Suction Cup Mount for the TB0023 19° Puck Transducer
• BK0027 - Suction Cup Mount for the Pro-View and DB Transducer

## Universal Transducer Kit (30' Cable)

• TK-100 - 19° Transducer Kit for all FL/FLX series flashers.
*Includes options for transom, trolling motor and suction cup mounting.*

## Ice-Ducers (7' Cable)

• TB0050 - 19° Cone Angle
• TB0080 - 12° Cone Angle
• TB0051 - Pro-View 9°
• TBB-100 - Broad Band for FLX-30BB

**Transducer Exchange Policy**
If you purchase the wrong transducer for your intended fishing application, you can exchange the new transducer for a different one with Vexilar. Only pay the retail cost difference of the transducer style, plus shipping. Please call for more information.

## Transducer Switches and Extensions

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

## Replacement Parts

• PC0001 - 6' Power cord for the FL-8SE and FL-18
• PC0004 - 6' Power cord for the FL-12, FL-20, FL-22 & FLX Series
• PC0001C - 14" Power cord w/quick-charge plug for FL-8SE and FL-18
• PC0004C - 14" Power cord w/quick-charge plug for FL-12, FL-20, FL-22 & FLX Series
• GB0001 - Unit gimbal mounting bracket for FL/FLX Series Flashers
• GBK001 - Gimbal mounting bracket knobs (two pieces)
• FT-100 - Float with stopper for all Ice-Ducers
• ST-100 - Stopper for all Ice-Ducers (two pieces)
• RB-100 - Eye-bolt support for all Ice-Ducers
• RH-100 - Rod Holder assembly for Ultra Pack and Pro Pack II
• CH-100 - Beverage Holder for Rod Holder.
• TKB100 - Vexilar 4 x 6 inch tackle box
• V-120 - 12 Volt / 9 Amp-Hour SLA Battery and 1 Amp Automatic Charger
• V-410 - 12 Volt / 1 Amp Vexilar Charger
• V-410L Rapid Charge Vexilar Lithium Charger
• V-100 - Replacement 12 Volt / 9 Amp-Hour SLA Battery Only
• PCDCA1 - 12 Volt Accessory Plug Power Cord (FL-8SE/FL-18)
• PCDCA4 - 12 Volt Accessory Plug Power Cord (FL-12, FL-20, FL-22 & FLX Series)

*To order, go to
Vexilar.com
or call
952-884-5291*

• V-100L - 12 Volt Vexilar Lithium Battery Only
• V-120L - 12 Volt Vexilar Lithium Battery & Charger
• DD-100 - Digital Depth Display & Charge Status*
• D-130 - Digital Battery Status*
• FH1000 - Fuse Holder

\* Battery status for SLA batteries only

## Storage & Prevention Tips

- Store in cool dry area. Do not store in a sealed container like a bucket or Soft Pack, trapping moisture.

- Be sure an SLA battery is fully charged before storage.

- Clean the flasher body and screen with a soft cloth and a mild detergent. Do not submerge in water or other liquids.

- Do not expose the body or display to chemicals such as fish attractant or insect repellent. Damage to the surfaces can occur.

- Do not submerge the body in water or subject it to heavy wave splashing. The flasher housing is weather-proof for most conditions, but is not waterproof. Water damage is not covered under the warranty.

## General Troubleshooting

| 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 flash randomly 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° transducers will have trouble seeing small targets deep. |
| Unit works, but has too many lines on the display. Can't distingush signal targets. | 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 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 transducer is weak. Also, check for ice or debris buildup under the Gain Control. |

# Electrical Interference Troubleshooting

There may be situations where you experience interference from other electrical devices, not just from another nearby depth sounder. This interference will show on the display as random signals and interfere with your ability to see normal display signals. The most common sources of interference are electric trolling motors and engine ignitions systems. Your flasher's IR feature won't help much, as this is designed for cross-talk, but here are some tips that might.

## 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 that 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 "Earth" ground to the water. In most boats, the electrical system is grounded through the outboard to the water. Many times an electric trolling motor interference problem can be solved by a "ground" wire from the negative trolling motor power source to the negative of the starting battery.

## Equipment

Electric trolling motors and gas engines can have technical problems that can 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.

# VEXILAR SUPPORT

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

Address:

**Vexilar, Inc.**
**6667 West Old Shakopee Road, Suite 101**
**Minneapolis, MN 55438-2622**

Telephone: (952) 884-5291
Fax: (952) 884-5292
Email: service@vexilar.com

Web Site: https://vexilar.com

Business Hours: 8:00 AM to 4:30 PM M–F Central Time

## Don't Forget: Register Your Vexilar Product Online!

In addition to streamlining any future service need, we'll also keep you up-to-date on the latest tips, videos and product updates so you'll be sure to get the most from your Vexilar!

**Go to https://vexilar.com/warranty**

## Disclaimer:

This USER MANUAL is intended for use with units produced in 2020 and beyond. Over time, features and functions of units change and this user manual may become obsolete for some models but not for others. Vexilar, Inc. is always striving to improve the features, performance, components and reliability of the products it produces. The FL-8 of 40 years ago is not the same FL-8 of today. Vexilar strives to keep user functions consistent from one generation to the next.

## Vexilar's SONARPHONE® is a REVOLUTION
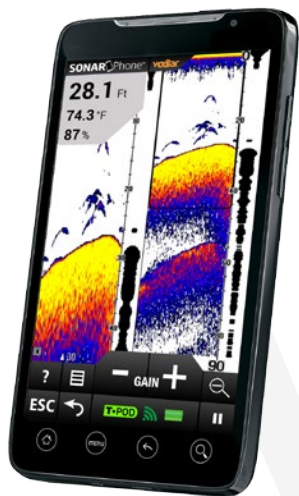


*The SONARPHONE gives you amazing high-speed depth sounder performance on your phone or tablet.*

**No cell service is required!**

As the name implies, SONARPHONE® turns your smartphone or tablet into a fully functional sonar system that will rival any high-end sonar on the market today. Using patented WiFi signal technology to transmit to smartphones or tablets, you don't need cell phone coverage to use it. The SONARPHONE® will work anywhere in the world. The SONARPHONE® creates its own WiFi hotspot and you can share your signal with as many people as you wish. The SonarPhone App can be downloaded for free from your device's app store and works with both Android and iOS.

- Compatibility: iOS 4.3 (iPhone, iPad) and Android
- Free App download
- Automatic Ranging & Gain
- Water Temperature & Depth Indicator
- Audible Alarms for Fish, Shallow and Low Battery
- Fish Icon
- Zoom Bottom Track
- Noise Rejection
- Surface Clarity
- Battery Indicator
- Models Available:
  SP100 (T-Pod) and SP200 (T-Box)

*Visit SonarPhone.mobi for more info!*

## Fish Scout
## Underwater Camera System

The Vexilar FS800IR Fish Scout Underwater Camera System consists of a color/black and white camera, a 7" color LCD monitor, a rigid carrying case with an enclosed 12 volt, 9 amp-hour SLA battery, a 1-amp digital charger and a protective soft pack carrying case. This camera offers superior cold weather performance with automatic monitor warming technology.

**Monitor**
- 7" 16:9 widescreen "a-SI TFT" active matrix display
- Monitor resolution: 800 x 480 (W x H)
- Video out option

**Camera**
- 1/3" CMOS color/B&W sensor (switches automatically)
- Infrared Lighting
- 90 degree viewing angle
- 600 lines if resolution
- 90 feet of cable



***Visit Vexilar.com to see the complete Vexilar product line!***

## Vexilar Two-Year Extended Limited Warranty Application

Price: $39.95 USD (Anytime within 12 months of purchase)

Model Units Covered
FL-8®SE • FLX-12™ • FL-18® • FLX-20™ • FLX-28™ • FLX-30™BB

If you purchased a new Vexilar pack that includes a qualifying model, you may buy the extended warranty, for that head unit only, from Vexilar, Inc. for up to 12 months after your purchase. This warranty is transferable to a new owner.

### Order On-Line
Save the stamp and the mailing hassles. Just go online to complete your standard warranty registration and complete the extended warranty form on our website.

**http://vexilar.com/warranty**

### Order By Mail
Send the form on this page, along with the standard warranty registration card attached, along with $39.95. We accept checks, money order, Visa and MasterCard. Make checks payable to "Vexilar, Inc." (see next page).

Notice: The model and serial number of your unit *must* be provided to Vexilar with your original purchase date to be able to register your unit for your first two-year warranty *and* to be able to purchase the additional two-year extended warranty. Batteries are excluded (see page 68 for battery warranty).

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**VEXILAR TWO-YEAR EXTENDED LIMITED WARRANTY APPLICATION FORM**

*Please print clearly*

NAME

MODEL

ADDRESS

SERIAL NUMBER (REQUIRED)

CITY

PLACE OF PURCHASE

STATE          ZIP

DATE OF PURCHASE  /  /

PHONE

SIGNATURE

E-MAIL

TODAY'S DATE  /  /

IF PAYING BY C.CARD
☐ Visa  ☐ MasterCard
CREDIT CARD (CHECK ONE)

CARD NUMBER  —  —  —

EXPIRATION DATE  /     CVV

# Extended Limited Warranty

The Vexilar extended warranty is not only the best in the Marine Industry, but also an exceptional value. Your new Vexilar unit has a full two-year limited warranty against defects or malfunctions in material, workmanship or against failure to conform to the product's written specifications. (See specifics in this Vexilar owner's manual.)

Now you have the opportunity to extend the warranty protection of your Vexilar unit from the time of purchase by an additional **two years**—for a total of *four years* of protection. Models FL-8SE, FLX-12, FL-18, FLX-20, FLX-28 & FLX-30BB are eligible for this program. This two-year extended warranty must be purchased within twelve (12) months from the original date of purchase for $39.95. (Please note, your two years of extended limited warranty coverage will take effect after the original factory warranty expires. This will give you a total of four years of limited coverage based on the original purchase date of the unit.)

# How To Apply

If you decide to participate in the extended warranty program anytime within twelve (12) months after the original purchase date of the unit, you must buy it directly from Vexilar, Inc. for $39.95. To qualify, follow the instructions on the previous page. When mailing your registration, please fill out the information on the extended warranty application completely. The serial number of the unit is located on the back of the head assembly. Within six to eight weeks, Vexilar will send you a notice via mail confirming your extended warranty is valid and activated. The reply from Vexilar will clearly state when your extended warranty period expires. If you do not get a confirmation notice within this time, please contact Vexilar customer service immediately as no extended warranty service on your unit will be done if you did not apply properly.

Be sure to keep copies of all receipts for your own records. For more information or for additional copies of the Vexilar Limited Extended Warranty forms call: 952-884-5291, e-mail warranty@vexilar.com or visit our website. See order form for complete listing of the select models covered. Vexilar, Inc. may find it necessary to change or modify this offer at any time.

# Extended Warranty Coverage

The Extended Warranty gives you two extra years on the "head" assembly for model FL-8SE, FLX-12, FL-18, FLX-20, FLX-28 and FLX-30BB units. During the extended warranty period, Vexilar, Inc. will repair or at its option, replace any parts, labor and return shipping at no cost to you. Your unit's serial number must be on file with Vexilar in order to receive warranty coverage. The unit must be shipped prepaid to:

Vexilar, Inc. Attn: Customer Service
6667 West Old Shakopee Road, Suite 101
Minneapolis, MN 55438

This warranty does not apply if the product has been damaged by accident, misuse, internal water damage or as a result of service modification by anyone other than the factory. This extended warranty does not cover batteries, chargers, cases, accessories, transducers, gimbal bracket or lost parts. This warranty is transferable to new owners.

## 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*. SLA batteries offer a pro-rated warranty; see page 68 for more information. 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 West Old Shakopee Road, Suite 101, 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. If a replacement is given, the original warranty period shall resume upon date of receipt.

Except as otherwise expressly stated in this previous paragraph, the COMPANY MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESSED 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.

* A sales receipt with date of purchase may be requested before service work is done under warranty if no warranty registration information is on file. A serial number or UPC code on the box cannot be used to establish date of purchase.

## Save the Stamp

Visit the Vexilar website and register your new Vexilar product quickly and easily for free, plus opt in to receive helpful usage tips from the pro staff and the latest in Vexilar news and events delivered right to your email.

**Register Your Warranty Online**
https://vexilar.com/warranty

**The Vexilar Website Also Offers**
Full Product Information | Tips and Articles
Instructional Video | Hard-to-Find Accessories
Free Downloads

# WARRANTY REGISTRATION CARD

Owner's Name: _____

Address: _____

City: _____ State: _____ Zip: _____

| Receipt Date | Model # | Serial # |
|---|---|---|
| Date of Receipt as Purchase or Gift | Located Near the Bar Code on the Carton | Located on the Back of the Unit |

Place of Purchase: _____

City: _____ State: _____

WE WOULD APPRECIATE YOUR ANSWERS TO THE FOLLOWING QUESTIONS:

**What type of Fishing do you do:**

Walleye _____    Bass _____

Panfish _____    Pike _____

Other _____

**Length of your Boat:** _____ Feet

**Size of your Motor:** _____ HP

**Comments:** _____

**Your Occupation:** _____

**What Generated Your Interest:**

TV _____        Sales Person _____

Magazine _____        Friend _____

Internet _____        Experience _____

History with Vexilar _____

**VEXILAR, INC.**
**6667 West Old Shakopee Road**
**Suite #101**
**Minneapolis, MN 55438-2622**

ATTN: CUSTOMER SERVICE DEPT.

## PROBLEM?

Don't take it back to the store. Vexilar Support is Second to None!

*Call:  952-884-5291*

## DID YOU KNOW?

Failure to disconnect battery terminals or to turn off your master power switch when not in use will drain the battery to the point it can never be used again.

This is ***not*** covered by warranty.

## STAPLE YOUR SALES RECEIPT HERE

Vexilar may request proof of purchase at time of service if the unit's purchase date is in question.

Please fill in the information below and retain for your records.

Date of Purchase  _____

Model #  _____

Serial #  _____

Place of Purchase  _____

**On The Web**
For more product information, videos, tips and FAQs
visit us on the web at **vexilar.com**