



Vexilar Two-Year Extended Limited Warranty Application

Price: \$39.95 USD
Anytime within 12 months of purchase.

Model Units Covered
FL-8se • FL-12 • FL-18 • FL-20 • FLX-28



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

Two Ways to Order

On-Line _____

By Mail _____

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>



Send the form below, along with the your standard warranty registration, and \$39.95. We accept checks, money order, Visa and MasterCard. Make checks payable to "Vexilar, Inc." Please submit required items to:

Vexilar, Inc.
Attn: Warranty Dept.
6667 West Old Shakopee Rd. Suite 101
Minneapolis, MN 55438

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.

VEXILAR TWO-YEAR EXTENDED LIMITED WARRANTY APPLICATION FORM

Please print clearly

NAME _____		<input type="checkbox"/> FL-8se <input type="checkbox"/> FL-12 <input type="checkbox"/> FL-18 <input type="checkbox"/> FL-20 <input type="checkbox"/> FLX-28				
ADDRESS _____		MODEL (CHECK ONE) _____				
CITY _____		SERIAL NUMBER _____ (Required)				
STATE _____	ZIP _____	PLACE OF PURCHASE _____				
PHONE _____		DATE OF PURCHASE _____				
E-MAIL _____		SIGNATURE _____				
		TODAY'S DATE _____				
<input type="checkbox"/> Visa <input type="checkbox"/> MasterCard		CREDIT CARD (CHECK ONE)		CARD NUMBER _____	EXPIRATION DATE _____	DIV _____



Vexilar Two-Year Extended Limited Warranty

The Vexilar extended Warranty is not only the best in the Marine Industry, but also an exceptional value. Your new Vexilar 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 your 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, FL-12, FL-18, FL-20 & FLX-28 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 opposite 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. Vexilar will send you a notice via mail confirming your extended warranty is valid and activated within 6 to 8 weeks. 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, FL-12, FL-18, FL-20 and FLX-28 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 FL 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: Service
6667 West Old Shakopee Road, Suite 101 Minneapolis, MN 55438

This warranty does not apply if the product has been damaged by accident or misuse 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.



VEXILAR FL SERIES SONAR/FISH FINDERS OWNERS MANUAL

For Models:

FL-8SE | FL-12 | FL-18 | FL-20 | FLX-28

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VEXILAR — PIONEERS IN MARINE ELECTRONICS

Established in 1960, Vexilar, Inc. has been a leading innovator of marine electronics in the sport fishing industry for over 50 years. Some of their innovations include:

- The first straight-line paper graph for sportfishing (model 155)
- The first CRT (television) display (model 660)
- The first color display (model DE-12)
- The first fish alarm (model 120-SOS)
- The first Liquid Crystal Display (LCD) (model 480)
- The first self-leveling ice fishing transducer design (Ice-Ducer)
- The first split-screen zoom flasher (model FL-18)
- The first shoot-through-aluminum transducer design (AlumaDucer)
- The first 10' Range Flasher (FL-22HD)
- The first tri-beam transducer in one housing.

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



A Long History of Vexilar Products

ABOUT FLASHERS

How Sonar Works

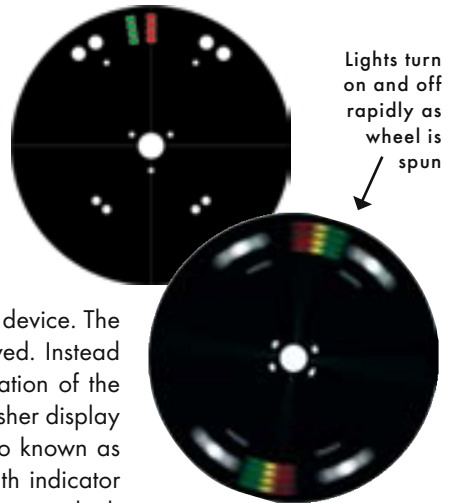
SONAR stands for **SO**und **NA**avigation **R**anging. Sound travels through fresh water at a speed of approximately 4920 feet per second. A sonar device (depth finder/fish finder) measures the amount of time a burst of energy takes to travel to the bottom and return to the transducer. This time variation 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 of bottom, as well as other targets.

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

How Flashers Work

The 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.

Flasher Wheel Stationary



Flasher Wheel Spinning

The Vexilar Advantage

Vexilar's sonar design offers an optimal balance between the power of the transmitted pulse and the sensitivity of the receiver circuit. Excessive power has been shown to cause premature transducer failure, distortion of the sonar signal, and possibly "spook" fish from the audible noise they hear. Vexilar provides a balanced performance level for a wide range of fishing scenarios.



FLASHER OPERATION

Basic Use

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

FL SERIES FLASHERS CAN BE USED FOR:

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

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

RANGE

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

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

GAIN

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

INTERFERENCE REJECTION

This feature rejects sonar interference generated by other nearby depth sounders. Interference Rejection, or IR, comes on automatically when you turn the flasher on, but you can adjust the setting if desired. Learn more on page 13.

About the Display

The 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.

What is What ?

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

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

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

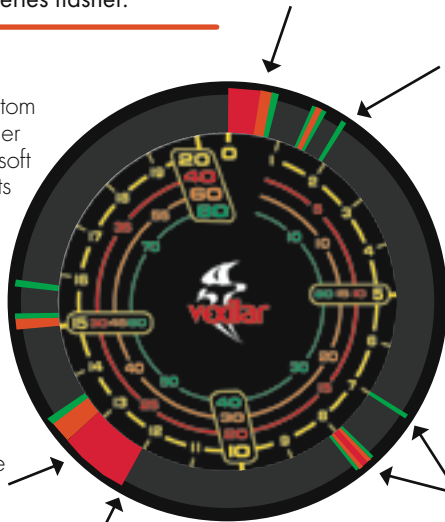
Bottom is generally the most prominent mark on the display. Bottom usually starts with a wide band of red, with orange and green trailing.

READ DEPTH HERE: The current depth is indicated by the leading edge of the bottom mark. The depth is 12 feet here.

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

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

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.



NOTE: The FLX-28 has a more sophisticated color scheme. See page 24 for details.

Setting the Range

FL-8SE

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

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



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

SHALLOW GROUP

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

DEEP GROUP

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

Setting the Range

FL-18

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



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

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

Reading the depth is the same in LP (Low Power) mode. Reading the depth in AZ (Auto Zoom) or BL (Bottom Lock) mode is discussed on page 17

Setting the Range

FL-12 and FL-20

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



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

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

For the 300 foot range, look at the outer 20 foot scale. Here you will need to multiply 20' X 15 to get your 300' depth reading.

The 20' Low Power range reads the same as the standard 20 foot range, except that using this selection puts the flasher into Low Power Mode, which is discussed on page 15.

Setting the Range

FLX-28

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



The "AUTO" setting automatically selects the correct depth range to maximize your display area. The shallowest range in the Auto setting is 0-10 feet. For example, 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 or less. To override the AUTO feature, simply manually change the Range control to the desired depth setting.

The digital display on the inner dial of your Vexilar will display your current digital depth and also the current range you are in. So your display will read: Depth 34 ft - AR (for Auto Range setting).

Mode	Available Range Settings
Auto-Range	10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 120, 160, 200, 240 and 300 Feet
Manual-Range	10, 20, 30, 40 and 50 Feet

Setting the Gain

Gain functions are the same on all models. However, the FL-8se, FL-18 and FLX-28 have a different scale than the FL-12, FL-20.

GAIN SCALE

- The FL-8se, FL-18 and FLX-28 use a zero to ten scale.
- The FL-12 and FL-20 use a Minimum to Maximum scale.



FL-8se, FL-18 & FLX-28
Gain Control



FL-12 & FL-20
Gain Control

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

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

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

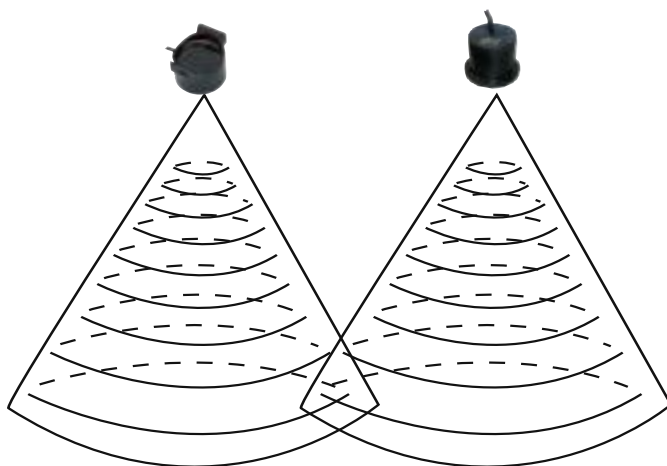
Interference Rejection

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

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

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

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

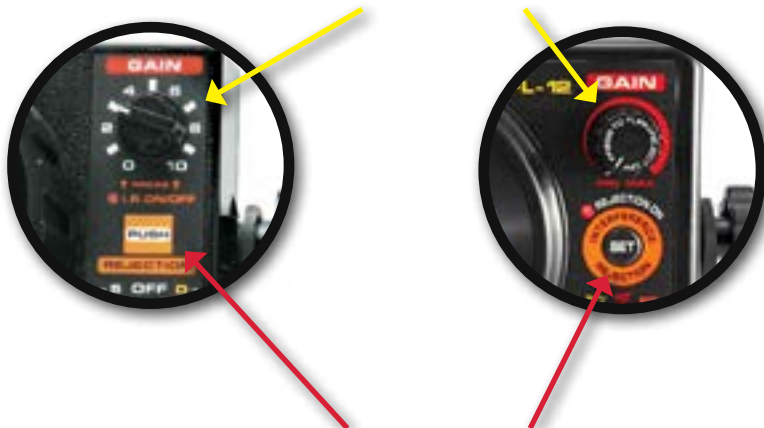


Interference occurs when the cone angles of two different sounders operating at the same frequency intersect. It can also occur if the sonar signal from one sounder bounces off an underwater object and is received by another sounder.

To reduce interference from other units, use a Pro View transducer (see page #54)

FL-8SE AND FL-12

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



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

FL-18, FL-20 AND FLX-28

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



ADDITIONAL FEATURES

Low Power Mode (Not Available on FL-8SE)

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

FL-18

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



FL-12 and FL-20

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



FLX-28

Activate the Low Power Mode by switching the mode control to the LP setting. Note that Auto Range and Digital Depth will not function in LP Mode.

DID YOU KNOW ? Low Power Mode will not affect how much battery power is required to run the flasher. Switching to Low Power Mode will actually shorten your running time by 10%.

DID YOU KNOW ? You can have a Low Power Mode feature on an FL-8se too by purchasing a Vexilar S-Cable. Learn more about it on page 55.

Auto Zoom (FL-18, FL-20, & FLX-28 Only)

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



FL-18

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



FL-20

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

FLX-28 Auto Zoom

Activate the Auto Zoom by switching the Mode control to the right for either the normal powered AZ (6') or AZ x2 (12') setting. Please note that the Auto Zoom feature will not function when the range control is set to the 10 foot setting.



Bottom Lock (FL-18)

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 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.

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

Bottom Lock is not available on the FL-20 or FLX-28

FL-20 Low Battery Indicator

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





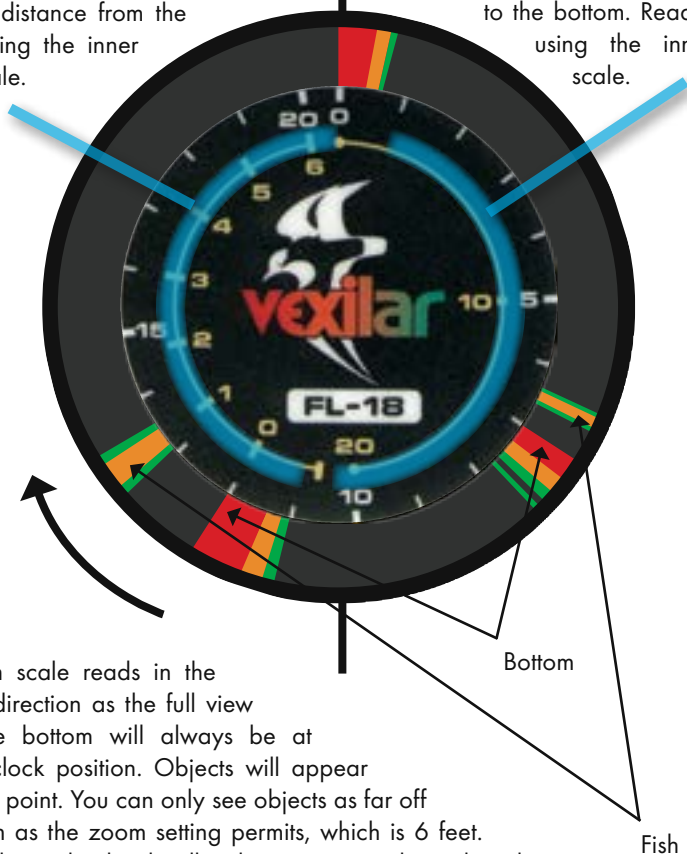
Understanding the Zoom Modes

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

FL-18 - Auto Zoom

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.

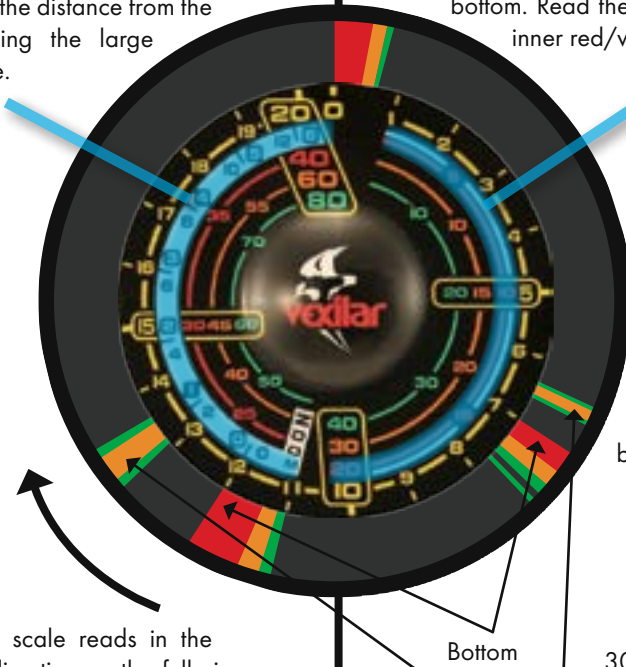


The Zoom scale reads in the opposite direction as the full view scale. The bottom will always be at the 7 O'clock position. Objects will appear above this point. You can only see objects as far off the bottom as the zoom setting permits, which is 6 feet. Objects above this level will only appear on the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

FL-20 - Auto Zoom

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

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



You interpret the depth by multiplying the indicated value on the red/white scale by the multiplying factor here.

20' Range = 1x
 40' Range = 2x
 60' Range = 3x
 80' Range = 4x
 300' Range = 15x

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

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

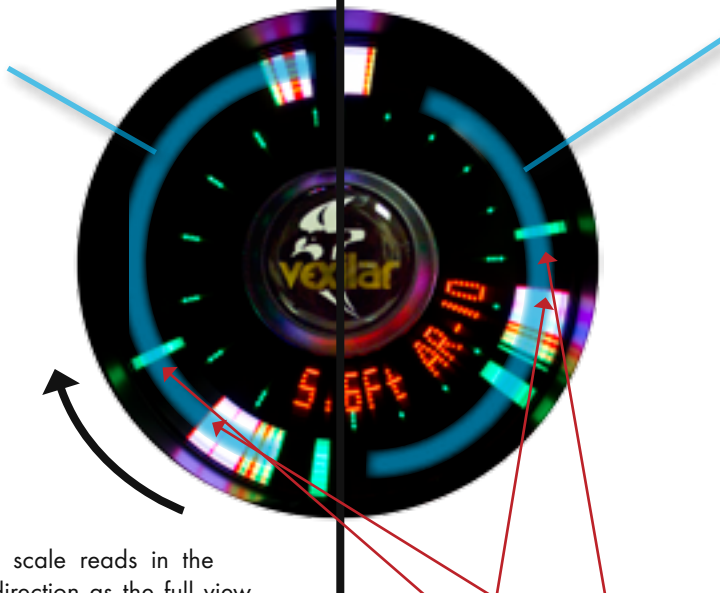
IMPORTANT If the depth of water changes while a zoom mode is selected, the bottom position on the zoom scale will change accordingly. If the bottom signal moves off of the display, reset the zoom by switching back to the Normal Mode momentarily. For this reason, the Zoom Mode is not recommended for use on boats where changes in depth are commonly occurring.



FLX-28 - Auto Zoom

THE LEFT HALF represents the zoom view from the bottom up to six feet. Read the distance from the bottom up using the green depth markers.

THE RIGHT HALF represents the entire water column from the water surface 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 feet. Objects above this level will only appear on the right side, which shows the entire water column.

Bottom

Fish

Night Mode

(FL-20 & FLX-28 Only)

Night Mode reduces the flasher's display brightness to make night time viewing more comfortable to your eyes. The display intensity is reduced by about 50%.



FL-20 To activate Night Mode, switch the Mode control to either the Full View, AZ6, or AZ12 position to the left.



FLX-28 To activate Night Mode or return the display to full brightness, press and hold on the top Gain control knob for three seconds.

WELCOME TO THE FLX-28

The following instructions should be read before you take your FLX-28 to the water to ensure you fully understand the capabilities and limitations of this unit. What makes the FLX-28 so special is the performance based automatic features that allow you to start fishing faster and easier than ever before.

There are more features to the FLX-28 series than ever before inside a single flasher sonar system. When fans of Vexilar say we could never improve the FL-8 that we introduced over 20 years ago, they were amazed when the FL-18 hit the ice in 2002. By the time the new flat screen FL-12 and 20 came out, Vexilar had established a new gold standard in flasher performance. Surely, Vexilar could not improve on this? Welcome to the age of the FLX series! A unique brushless data transfer design system allows for the creation of a breakthrough flasher display with digital depth and Auto Ranging technology. The FLX-28 is totally revolutionary in the world of winter flasher sonar technology. Vexilar has come a long way from the early FL-8, but Vexilar has never changed their commitment to deliver the very best sonar systems in the world for over 50 years. Performance, quality, innovation and reliability...





Auto Range Operation

It is possible to confuse your "Auto Range" operation when fishing over very soft lake bottoms or during conditions of thick ice. This can confuse the software, as it cannot find a bottom point in the return signal strong enough to trigger a lock on the bottom. 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 it is seeing to best determine the true bottom point.

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

Note: There is NOTHING wrong with your Vexilar when the FLX-28 cannot lock on range automatically. This is a very unique fishing scenario, and unfortunately you will not be able to take full advantage of the "Auto" feature in these conditions.

Low Power Mode & Open Water Use

Low Power mode will disable the digital depth reading. The delay in establishing depth and range also will limit your enjoyment of the FLX-28 in open water scenarios since it will not give the instant depth readings anglers expect from classic Vexilar flasher technology.

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 the Manual Range settings the digital depth readout will only display up to 50 feet. If you lose the digital bottom depth reading in a known area of less than 50 feet of water, or does not seem to match with what your flasher display is telling you, these factors may come into play:

1. Very Soft Bottom
2. Too many fish
(Depth readings will jump up and back to bottom as fish pass)
3. Too Much Vegetation
4. Your actual depth may be deeper than 46 feet
(Shift to 50 foot manual range)

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

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 gives you a green marker for every foot shown on the display. This makes it easy to position your baits one or two feet off the bottom with no guessing.

As you change depth ranges, the line counts for each display will correspond to the depth changes as shown in the table.

Foot Markers	Range Settings
1ft	10 - 30ft
5ft	40 - 60ft
10ft	80 - 300ft

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.



FLX-28 Color Mode Operation

On the top MODE setting control knob you have the “CS” option on the switch, this stands for “Color Select.” Simply switch the MODE switch to CS and then tap (push in) the top gain switch while the flasher is on. The FLX-28 display will tell you what color setting you are selecting from scheme 1 through 5. Your FLX-28 will remain in whatever color palette you select until you manually change it again.

COLOR MODE 1: CLASSIC VEXILAR - RED, YELLOW, GREEN

In this application, green shows you 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 your hole.



COLOR MODE 2: RED, YELLOW ONLY

The more you use a Vexilar, the more you are confronted with situations where you will often be seeing a lot of green in your display. Heavy weeds, for example, or in some lakes where tiny bugs are so thick on a lake at night they trigger a green cloud on your display. By taking out the green, you take out much 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, 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 (FACTORY DEFAULT)

While color setting #2 limits some of the signals you could display, color option #3 goes to the opposite end of the spectrum. With green once again being the weakest signal, the yellow stronger and the red now becomes not the strongest signal but the SECOND to the strongest. White becomes the strongest color now. The advantage of the four colors will be to allow you to target specific fish that are directly below you, if you are fishing a school of fish for example. It is often called a “Christmas Tree”



because of the wide variety of colored lights you will see when you find yourself fishing over a large group of fish. When you see a fish in red, then turn to white, you know the fish is inches from your lure. The four color setting will allow you to see more individual targets, which might be too confusing to some, but you will gain the ability to target specific fish better.

COLOR MODE 4: WHITE, RED, YELLOW, GREEN, BLUE

In all other modes, filtering limits the total signal level you see on the display. The micro-processor then decides when a target is worthy of your attention or not. The five color FLX-28 option turns all filtering off to show you nearly every signal possible. The dynamic range of each color allows YOU not the computer to interpret the colorful signal display. On one hand, you might think having all this information is a good thing, but if you can see the curl of our own 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 advance warning of nearby fish, better understanding of fish attitudes and even know if your bait is on the hook or not. 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 some people are color blind and have difficulty distigushing the red/yellow/green color pallet. Setting #5 is an alternative that has proven to be much easier to see for these people. Blue replaces green as the weakest color, then red and now white will be the most intense sonar signal strength. You do not need to be color blind to use this color option if you like it.



FLX-28 Interference Rejection

The FLX-28 has increased your options for interference rejection by doubling what has been available on the classic FL flashers. The IR control can be activitated when you are fishing in the Normal or (LP) Low Power mode settings. You simply press the gain knob up to 20 times to access these different options. Your goal is to find a time when your unit is transmitting and not listening to the other sonar systems that may be nearby. ONLY ONE unit equipped with this IR feature needs to adjust the transmit timing to clean-up the interference from BOTH units. Remember, you have 20 settings to try to see which will give you the best display. As you press the IR or gain knob to change the IR setting, you will see the inner LED display will tell you where you are in the 1-20 IR setting for about one second after adjusting.



FLX-28 Mode Settings and Abbreviations

D = DEMO MODE

Here is a fun feature that the FLX-28 offers to those dreaming about ice fishing during the off season or when they are coaching their friends on what to expect when they go fishing with ANY Vexilar. The Demo Mode simply runs a simulation program showing what a bottom signal will look like in normal mode setting. You will see a fish target near the bottom and on the right side of the dial, you will see the lure dropping down or moving around the dial right to left. As the lure nears six feet from the bottom, the unit shifts to AZ mode display which zooms in on the bottom six foot of the water column. Note how much larger your lure and the fish appear in the AZ setting. The lure stops just above the fish target and the lure is jigged up and down to trigger the fish to move up to eat it. Then the fish comes to the bait and is caught. Just like it happens in real life!

Your unit only needs to be on and turned to the "D" setting on the Mode switch. All other controls will be deactivated at this point. The system will show a different color display option with each cycle of the demo mode so you can see what color palette you like the best even before you get on the ice.

WM - 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 will want to avoid seeing the weed stalks as blobs so you can see your 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 and turn the unit "ON" while you are holding down the gain knob. Once turned on, all features of your FLX-28 will work normally, but you will notice your display to be slightly weaker. You may need to increase your gain level. It's possible to use the 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, you are sending a shorter transmit burst, which requires more sensitivity from your receiver. That is why you need to turn up your gain. The limitations of this technology means it is best to use in 30 feet of water or less and in areas where interference from other anglers will not be a problem, since you will need to use a higher gain setting which will make it more sensitive to receive interference. When you turn your unit off, it will re-set back to normal mode. Give it a try and see if it helps you out the next time you are surrounded by fish!

Note - Weed mode can only be activated when in Normal-Power mode setting.

LP - Low Power Option

The Low Power Mode is designed for shallow water anglers looking to clean up a cluttered and busy display. The rule for using the Low Power Mode setting is this: If you turn down your 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. By activating the LP Mode you are greatly reducing the output power of your unit.

This means you should expect the lure, fish or weeds below to disappear if your gain remains at or near zero. You will now need to turn up the gain to “fine-tune” your display. You DO NOT want to be in LP all the time since it will make finding a lure or even 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 your gain and interference from other sonar systems can make it impossible for you to fish. In keeping with the golden rule for gain control: keep your gain as low as possible in order to see your bait, if the lowest gain setting is not low enough, switch to LP mode.

Note - The unit must be in manual range setting to use Low Power option. The Digital Depth reading, Auto Ranging and the AZ or Auto Zoom Feature WILL NOT work while in LP or Low Power setting.

AZ - Auto Zoom Modes

When you shift to the AZ 6 mode, you are splitting your display in half and dedicating the right side of the display to the entire water column, while the left side is dedicated to just the bottom 6 feet of the water column. If you are a perch angler fishing in 40 feet of water, you can zoom in on the bottom 6 feet of the water column to greatly increase your visibility in this zone. Similarly, in the AZ x2 setting, you are viewing the bottom 12 feet of the water column.

Important - Both AZ6 and AZ x2 should never be used in open water scenarios. Also note that even if you are in the Auto Range setting, you will need to manually re-set the AZ view by shifting to normal and back to AZ when you change depths. Also note that while in Manual Range or Auto Range, if the bottom is super soft, you may need to increase the gain setting in the normal mode then switch to AZ to lock on the top of the soft bottom. You can then simply back down your gain and fish as usual. Again, the AZ feature does not work in LP or Low Power mode.



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. While fishing if you find the digital display saying "LOW-BATT" the system is telling you the battery is down to only 10.6 volts. At 8.0 volts, the "LOW-BATT" graphic warnings will start to blink on and off which tells you 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 often to avoid any down time fishing without your Vexilar at full capacity.

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%

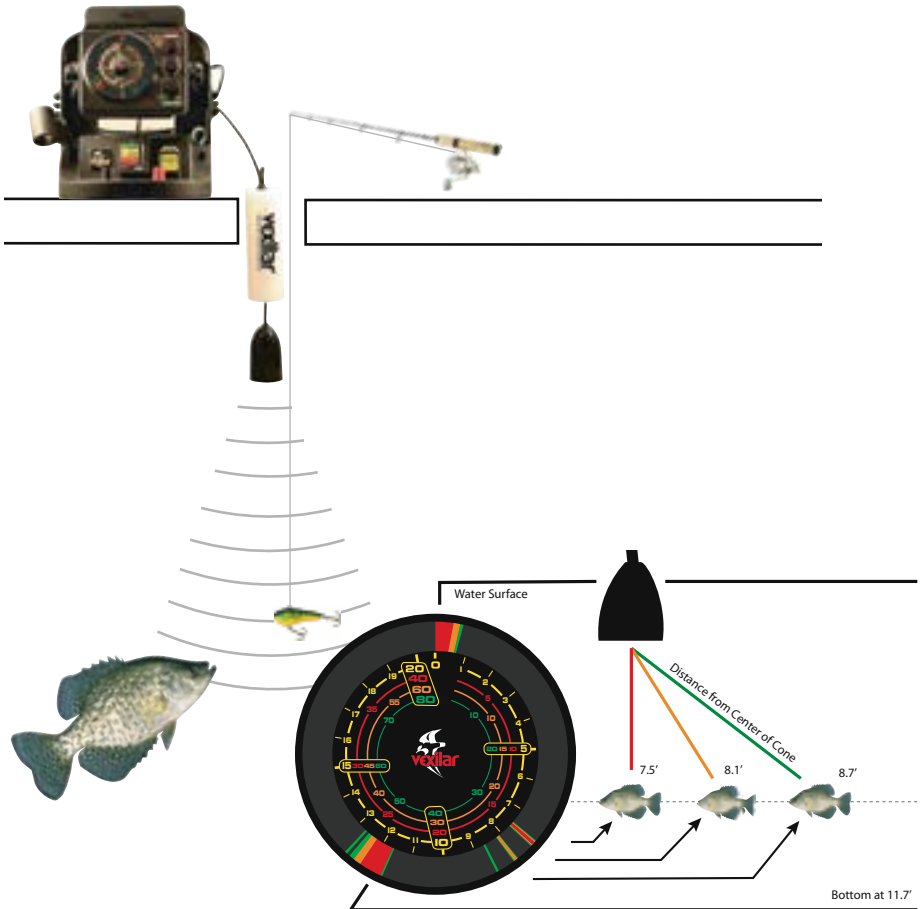
Day & Night Modes

Night fishing in the winter months is very popular. The problem with the bright display of the FLX-28 is that at night many find the display too bright and uncomfortable on the eyes. So you simply press in and hold the Gain knob for three seconds. The brightness of the unit will be reduced by 50%. Note that this will not save much battery power and you are not changing the output power of the unit in any way. This feature simply reduces the display brightness.

ICE FISHING

Basic Principles

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



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

Ice Fishing Transducer

Vexilar ice fishing systems include a special type of transducer patented 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.

ICE-DUCER® COMPONENTS



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

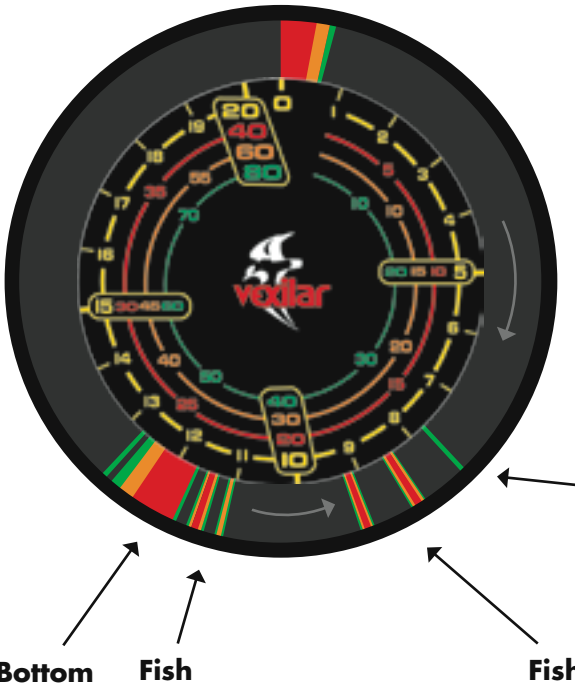
Float - The float suspends the transducer in the ice hole. You can also use the eye-bolt included with the Vexilar ice fishing systems to suspend the transducer. This can often be the best choice for early ice conditions.

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

Transducer - The transducer is designed to allow a perfectly downward alignment while suspended and be able to endure the severe conditions encountered in the ice fishing environment. Four models with different cone angles are available to match your fishing needs. See page 54 for more information.

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.



TYPICAL ICE FISHING VIEW

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.

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

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

DID YOU KNOW ? Setting the gain level correctly is important to be able to understand what's going on below you. Use the lure's appearance as your reference for adjusting the gain control. Set it so your lure appears as a 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.



ICE FISHING SYSTEMS

The Genz Pack

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).

Carry Case

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



Battery and Charger
12 Volt - 7 Amp
Battery with Charger

Pre-drilled mounting
holes for optional
accessories.



FL-8SE
Shown



Mounting Base

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

Carry Case Base

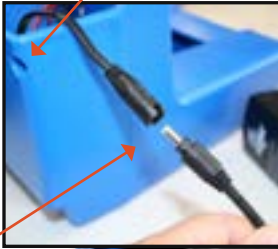
The base is designed to fit perfectly on top of a five-gallon bucket.

Battery Compartment

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

Transducer Holder

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



Easy Charge Jack

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

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

Eye-Bolt

Insert the transducer support eye-bolt here. Be sure to remove the float from the transducer cable when using the eye-bolt, which is commonly used on lakes with thin ice conditions.

Accessories
Use the pre-drilled holes for Vexilar add-on accessories, such as the FlexLight, Battery Status Indicator and Tri-Beam Transducer Switch. See page 52.



The Pro Pack II

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

Digital Depth / Battery Status*

Shows the current depth in an easy-to-read number and the level of charge in the battery. See page 38 for instructions.

Battery and Charger

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

FL-12
Shown



Tackle Box
The Vexilar tackle box fits into a convenient location here.

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

Rod Holder
Adjustable angle and fits into either side of the case

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

* Not included with FLX-28

Battery Compartment

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

Transducer Holder

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

Accessories

Use the pre-drilled holes for Vexilar add-on accessories, such as the FlexLight, or Tri-Beam Transducer. See pages 52 - 56.

Eye-Bolt

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

Cable Storage and Cleats

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

Easy Charge Jack

Charge the battery here. Connect the Easy Charge Jack to begin the charging process. **Be sure to disconnect from battery when putting the system away for more than a week, as the DD-100 will drain your battery, but remember to re-connect it before recharging once it comes out of storage or the battery will not receive a charge..**





The Ultra Pack

The Ultra Pack is rugged and packed with features. The Ultra Pack includes a DD-100 Digital Depth Indicator*, tackle box, remote accessory posts, a strong float holding handle, four rod holder mounting locations, an enclosed battery compartment and master power switch.

Rod Holder

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

Float Holder
Store the Ice-Ducer float here.

Eye-Bolt Storage

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

FL-20
Shown

Enclosed Battery Compartment

The battery is enclosed within the base here.

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

Digital Depth / Battery Level

Shows the current depth as an easy-to-read number, plus percentage of charge in the battery. See page 38 for instructions.

External Power Posts

Optionally use these posts to connect a battery charger (1 Amp Max) and to power external 12 volt accessories (2 Amp Max).

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.

* Not included with FLX-28

Tackle Box

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

Accessories

Use the pre-drilled holes for Vexilar add-on accessories, such as the Flexlight or Tri-Beam Transducer switch. See page 52.

Eye-Bolt

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



Non-Slip Bottom

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

Cable Storage and Cleats

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

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

Lets you charge the battery by plugging in your charger here.



Digital Depth & Battery Indicators

DD-100 FL Digital Depth Indicator

The DD-100 is Vexilar's first smart digital indicator display that offers both digital depth and a battery indicator when you push the "push to test button." The DD-100 will work on all Vexilar FL series of flashers, including older Hondex, Si-tex and Micronar FL-8 models. Vexilar's new DD-100 gives anglers what they have been asking for, "Digital Depth!" This indicator will become a standard piece on all future Pro and Ultra Packs, but can also be purchased as an added accessory.



The digital depth display will always give you 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 you're not in the correct depth range. This will allow you to get your flasher in the best depth range possible. If your 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 baitfish 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 by pressing a button.

The only time you will see a battery status is when you push the "push to test button." The 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 battery is at 12.2 volts, 100% = 12.7 volts and 0% = 11.0volts.

Current draw: 124uA (micro amps) when off and 21mA (milliamps) when on.
Note that this is not a charge indicator.

IMPORTANT: Be sure the indicators are not on during long storage periods, as excessive battery drain can result. For Pro Pack systems, disconnect the indicator from the battery before storage. For Ultra Pack systems, be sure the master power switch is off. Battery failure due to deep discharge is not covered under your warranty.

D-130 Digital Status Indicator

A unique battery fuel gauge that recognizes both the discharge and charge cycle of your battery. It will sense the current charging condition of the battery, display the percentage of remaining capacity and display a charge trend arrow. (▼ or ▲).



D-130

The D-130 will continue to measure capacity and trend as long as it is connected to the battery. When an additional "load" is applied to the battery, the capacity will decrease according to the load applied.

IMPORTANT: Be sure the indicators are not on during long storage periods, as excessive battery drain can result. For Pro Pack systems, disconnect the indicator from the battery before storage. For Ultra Pack systems, be sure the master power switch is off. Battery failure due to deep discharge is not covered under your warranty.

Battery Charging

CHARGE AFTER EACH USE

1 Amp Digital Automatic Charger (model V-410 / 1 Amp)

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.

If your charger is NOT equipped with an Easy Charge Jack, connect the terminals to the battery with the RED (+) connected to positive and BLACK connected to negative (-). The charger's light will switch to RED, indicating that it is connected correctly and the battery is charging.

FLASHING RED INDICATES A REVERSE CONNECTION.

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 9 hours of 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 the battery indefinitely and the battery will be maintained at full charge.

ATTENTION PRO PACK OWNERS: Please remember to disconnect your battery from the Pro Pack before summer storage. Failure to do so may drain your battery completely over time, leaving it in a state of prolonged deep discharge. Battery failure that is NOT covered under the warranty may result.

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

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

See page 61 for additional tips and warranty information.



Easy Charge Jack





BOAT USE

Navigation

The Vexilar FL-8, FL-12, FL-18 and FL-20 flashers are great tools for navigation while boating. The instantaneous readings offer the ability to identify depth changes quickly. Here are some tips to help you navigate safely.

CAUTION:

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

Bottom Content

The Vexilar FL-8, FL-12, FL-18 and FL-20 flashers are also great tools for determining bottom content changes. The colors allow you to easily see when the bottom changes from one type to another.

HARD OR SOFT BOTTOM

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



Hard Bottom



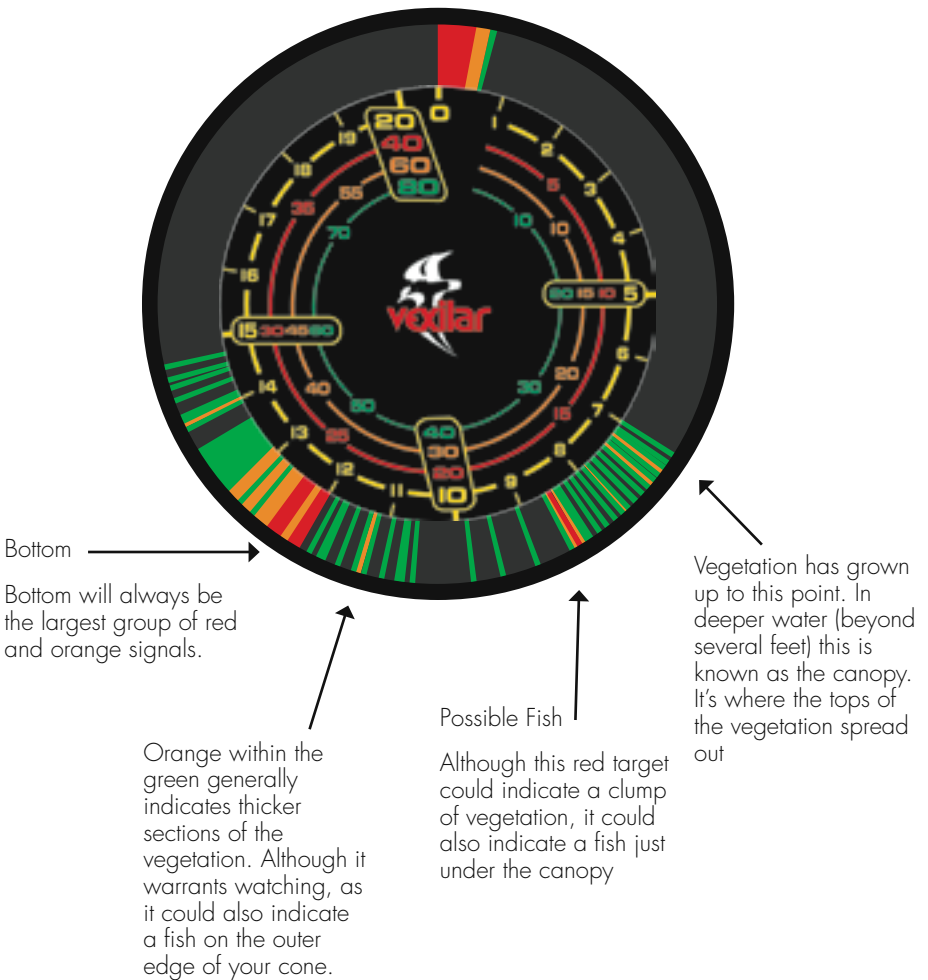
Soft Bottom

Vegetation

The Vexilar FL-8, FL-12, FL-18 and FL-20 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.



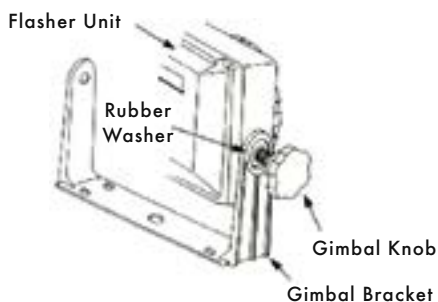
BOAT INSTALLATION

Mounting the Flasher Unit

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

TO INSTALL THE FLASHER UNIT:

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



Flasher Unit Assembly

Power Connection

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

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

TO CONNECT THE FLASHER TO POWER:

1. Be sure the power cord is not connected to the flasher.
2. Route the power cable from the flasher location to the power source.
3. Connect the 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

Transducer Types and Mounting Methods

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

TRANSDUCER TYPES

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



High-Speed



Puck Style



AlumaDucer

MOUNTING METHODS

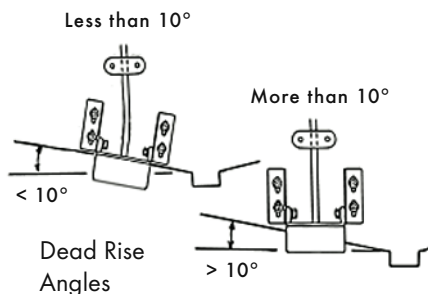
- Transom Mounted: the method by which the transducer is mounted external on the back of the boat. The transducer is attached at the bottom of the transom with a small portion of it extending below the hull line. (see [page 44](#))
- In-Hull Mounting: the method by which the transducer is glued to the inside of the hull of the boat. The sonar signal shoots through the hull and into the water. The use of an AlumaDucer™ is required to achieve a full strength signal when mounting in aluminum hulls. (see [page 46](#))
- Trolling Motor Mounting: the method by which the transducer is attached to the lower unit of the electric trolling motor. (see [page 48](#))
- 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 49](#))

DID YOU KNOW?: If you find that you have bought the wrong transducer for your intended mounting application, you can exchange it with Vexilar. You will only need to pay the retail cost difference, plus shipping, of the transducer style needed. Transducers must be in new condition. Please call for more information: 952-884-5291

Transom Transducer Mounting

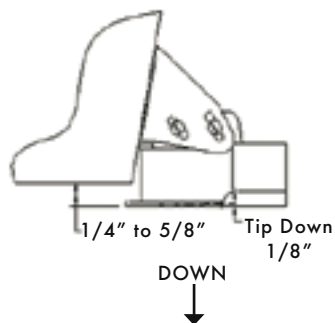
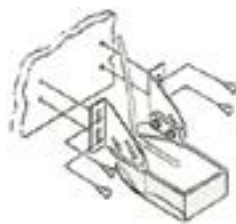
Before you begin the process of installing the transducer, check your hull to find a spot where you'll get a smooth water flow along the bottom of the boat. You want to avoid ribs, rivets, and gouges or scratches in the hull.

To get a true vertical depth reading, the transducer should be mounted parallel to the water line. However, a 10° tilt to either side is acceptable. If the hull is reasonably flat with a dead rise of 10° or less, mount the transducer along the hull bottom. If dead rise is greater than 10° , mount 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 transducer mounting brackets. Drill in center of slot outline using a $9/64"$ (3.5 mm) drill.
4. Fasten the transducer to the transom using the $\#10 \times 3/4"$ screws, nuts and washer plates.
5. Before final tightening the 4 screws holding the brackets to the transducer, tip the rear edge down approximately $1/8"$ as shown.
6. Tighten all screws.



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

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

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

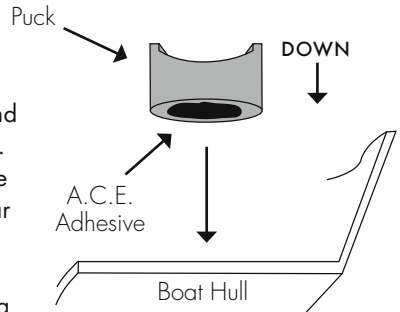
In-Hull Transducer Mounting

Surface preparation and location are the keys to having a good sonar transducer installation that will last for years, so please take a few extra minutes to 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 too. This will also aid in the long-term quality of your installation.
2. Clean the area. Use the supplied cleaning patch of Isopropyl Alcohol to remove dust and dirt from the target mounting area. Be sure to also wipe clean the face of your transducer. Let dry for a few minutes.
3. Position the transducer. Place the transducer exactly where you want to install it. Apply the four supplied positioning pads around the transducer. The positioning pads are needed to prevent your transducer from drifting off the target area while the A.C.E. adhesive sets up.
4. Mix and apply the epoxy. Follow the mixing directions on the packet of A.C.E. Adhesive and apply the entire packet contents directly to the face of the transducer.
5. Install the transducer. Place the transducer into position. Press firmly and twist slightly back-and-forth to work-out any air bubbles that might have been trapped in the epoxy.
6. Installation complete. Allow the A.C.E. to dry.



CAUTION. Do not power-up your depth sounder for at least 12 hours. Doing so will effect epoxy curing.



AlumaDucer™ Transducer Installation

IMPORTANT PRE-INSTALLATION INSTRUCTIONS

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

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

MOUNTING LOCATION TESTING

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

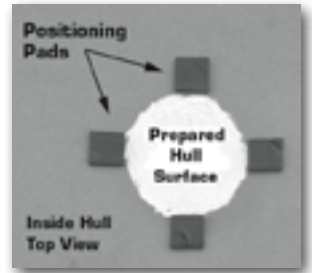
If you don’t have a friend to help drive the boat while you’re moving the transducer around, use a zip lock bag with beach sand in it, or something similar, to keep the transducer face firmly in place on the hull and under the thin layer of water you have in your boat. Remember to consider the average weight distribution within your boat. Try to compensate for your own weight during the test.

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

Installation Procedures

INSTALLING THE ALUMADUCER

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



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

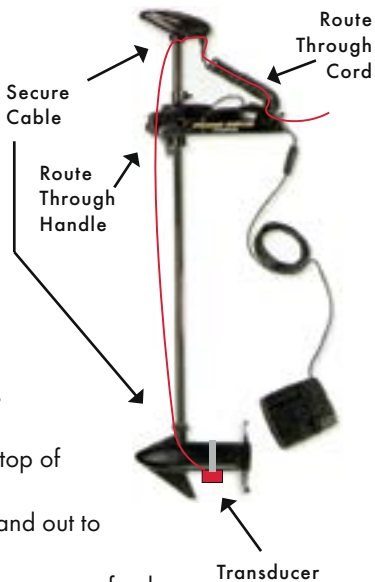
IMPORTANT: The hull temperature should be at least 60° F for proper curing of the A.C.E. adhesive.

Electric Trolling Motor Mounting

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

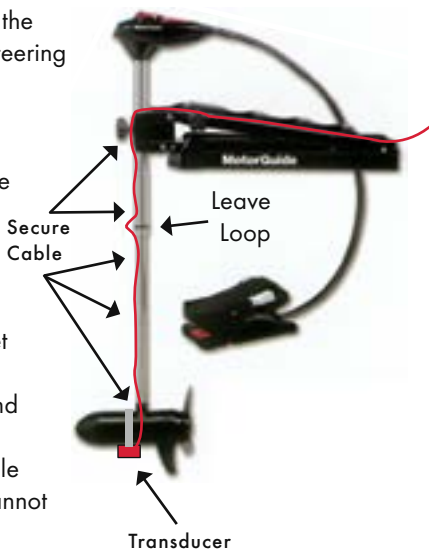
MOUNTING TO ELECTRIC STEER MOTORS

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



MOUNTING TO MANUAL STEER MOTORS

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



Portable Options

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

BK0044

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

IMPORTANT: Suction cups can come loose. Each bracket includes a safety rope. Be sure to take the time to 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 lose, this will keep your transducer and cable out of the propeller.



BK0027

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



BK0023

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



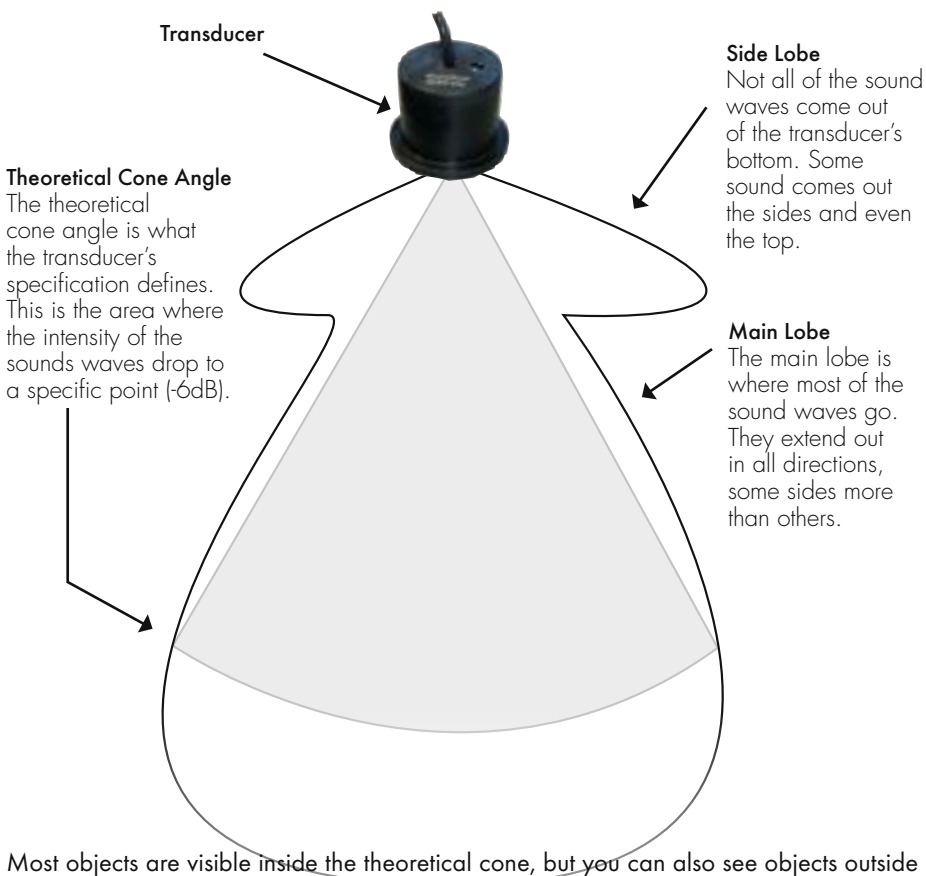
Note - suction cup brackets do not include the transducer.

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

ABOUT TRANSDUCERS

Cone of Sound

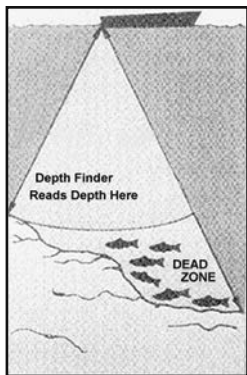
The cone of sound is the area the sound waves cover as they are emitted from the transducer. Generally, this area is thought of as three-dimensional cone, such as an upside-down ice cream cone. In actuality, the cone of sound is not so precisely defined. It is an irregular shape with edges that taper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



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

Dead Zone

Beam angle has a large effect on the performance of your flasher. There is more to it than simply area of coverage. The correct beam angle to use depends entirely on your application. If you are fishing for suspended fish then you would be pleased with the performance of the 19° cone. However, if you were going after fish that are holding right on the bottom along a steep drop-off, you would have better results with the 9°.



This is because of something called

dead zone. Dead zone is an area within the transducer's cone of sound that is blind to you. The wider the beam angle the greater the possible dead zone. The sonar will mark bottom as the nearest distance it sees. If you are fishing over a slope, it may see the high side of the slope, at the edge of the cone, and mark that as bottom. The fish that are holding on the bottom on the low side of the slope will be invisible to you because they are actually within the bottom signal on your depth finder. A narrower beam angle will reduce this effect.

Cone angle vs Diameter of Coverage					
DEPTH	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 that same amount of power into a smaller area. This can be an advantage if you are fishing in deep water or a detriment if you are fishing in shallow water. A narrow beam transducer can be overpowering in shallow water. The use of the LP (Low Power) mode on your flasher, or the optional S-Cable (page 56), will solve this problem.

Remember to NOT use LP mode or the S-Cable in depths beyond 20 feet. 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.



Vexilar Tri-Beam Ice-Ducer System, WILL Put More Fish on the Ice

Vexilar invented and patented the first Ice-Ducer in 1997. A self-leveling transducer to make it easy for the ice angler to get their transducer to hang straight down the hole. One of the newest advancements in sonar technology to come around in a long time is the all new Vexilar Tri-Beam Ice-Ducer transducer system. The innovation will totally change the way ice anglers look at matching their fishing situation with the right transducer to maximize the performance of their Vexilar.

Vexilar currently offers four Ice-Ducer options, the 19 degree Ice-Ducer, the 12 degree IceDucer, the Pro View Ice-Ducer and now the new Tri-Beam Ice-Ducer. The Tri-Beam offers a combination of an 8, 12 and 20 degree Ice-Ducer in one housing. Different cone angles are created by different size crystals inside the Ice-Ducer housing. A simple switch box allows you to access the degree of performance you wish to have and they will fit ANY Vexilar FL flasher, no matter how old!

The New Tri-Beam will allow the advantages of all three of these beam angles in a single Ice-Ducer. The great thing is that the new Tri-Beam will fit any type or age of Vexilar Flasher and with a simple switch box, you can see for yourself the differences in display performance on your flasher.



**Vexilar Tri-Beam
Ice-Ducer #TB0033**

Understanding the Tri-Beam Advantages

The first thing you will note about your Tri-Beam Ice-Ducer as you switch from one crystal to another is that you will be required to adjust your gain setting. Fishing in 30 feet of water with the Tri-Beam set at the 20 degree option will require you set your gain at about a 2 setting, and this would be "normal". As you go to the 12 degree or the 8 degree you will find the signals get too strong and too blurry to see individual targets. You will need to reduce your gain downward as you go with a narrower beam setting. This is because the Ice-Ducer is outputting the same amount of energy but to a smaller area of coverage.

The need for using all three settings on the Tri-Beam has really opened the world to a new set of possibilities when fishing specific applications. One example would be fishing shallow waters of under 10 feet. When most anglers are fishing shallow, their first reaction would be to use only the wide angle 20 degree option on their Tri-Beam. While it is true that you will be able to see more of the area below you, in many shallow water settings, the weeds grow very thick and tall. A single stalk of weed could make seeing your lure very difficult. By switching to the low power mode option on your sonar or using an "S" cable or suppression cable, you will be able to dial down the power of the narrower beams and the system will ignore the longer stalks of weeds on the outer edges of the 20 degree cone and allow you to see a 30 to 50% clearer signal with less clutter and confusion, thus making it easier to see and catch the fish below.

The Vexilar Tri-Beam Ice-Ducer will be a great benefit to the ever growing number of traveling winter anglers who are no longer content to fish one lake or species. With the Tri-Beam, your Vexilar can be used with greater effectiveness and far less interference from other sonar than ever before, even when compared to single crystal Ice-Ducers.

At one particular fishing event where anglers were fishing deep water perch in 40 feet of water the advantages of the Tri-Beam once again becomes obvious. If you try to fish around a dozen anglers, all fishing in deep water for perch with a 19 degree Ice-Ducer, the odds of using the IR button on your Vexilar to remove this level of interference is impossible. With the use of the Tri-Beam you can literally dial out the interference by 80% just by shifting to a smaller transducer cone option.

There is little doubt in the years ahead, winter anglers will discover more of the advantages of the Vexilar Tri-Beam IceDucer to help get even more from their Vexilar sonar systems.

**To Order, go to Vexilar.com/tribeam
or call 952-884-5291 during normal business hours.**



PARTS AND ACCESSORIES

Optional Transducers and Conversion Kits

TRANSOM MOUNT HIGH SPEED STYLES (25' CABLE)

- TB0044 - 19° Cone Angle
 - TB0084 - 12° Cone Angle
- *Includes detachable switch assembly

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

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

TRANSOM STYLE CONVERSION KITS

- TK-144 - 19° Transducer Conversion Kit for the FL-8se and FL-18
- TK-244 - 19° Transducer Conversion Kit for the FL-12, FL-20, FL-22 & FLX-28
- TK-184 - 12° Transducer Conversion Kit for the FL-8se and FL-18
- TK-284 - 12° Transducer Conversion Kit for the FL-12, FL-20, FL-22 & FLX-28
- BK0044 - Suction Cup Mount for all of the above High Speed Transducers. Offers dual suction cups for extra holding power.

PUCK STYLES (25' CABLE)

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

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

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

PUCK STYLE CONVERSION KITS

- TK-123 - 19° Transducer with Conversion Kit for the FL-8se and FL-18
- TK-223 - 19° Transducer with Conversion Kit for the FL-12, FL-20 FL-22, & FLX-28
- TK-187 - 12° Complete Conversion Kit for the FL-8se and FL-18
- TK-287 - 12° Transducer with Conversion Kit for the FL-12, FL-20, FL-22 & FLX-28
- BK0023 - Suction Cup Mount for the TB0023 19° Puck Transducer
- BK0027 - Suction Cup Mount for the 12° Puck Transducer

ALUMADUCER™

- TB0023A - 19° Cone Angle
- TK-123A - 19° Transducer with Conversion Kit for FL-8se and FL-18
- TK-223A - 19° Transducer with Conversion Kit for FL-12, FL-20, FL-22 & FLX-28

ICE-DUCERS

- TB0050 - 19° Cone Angle
- TB0080 - 12° Cone Angle
- TB0051 - Pro View 9° (30°)
- TB0033 - Tri 8°/12°/20° Cone Angles

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

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

SWITCHES AND EXTENSIONS

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

TRANSDUCER EXCHANGE POLICY

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

To order, go to Vexilar.com or call 952-884-5291 during normal business hours.

Replacement Parts

- PC0001 - Power cord for the FL-8se and FL-18
- PC0004 - Power cord for the FL-12, FL-20, FL-22 & FLX-28
- GB0001 - Unit gimbal mounting bracket for FL Series Gimbal Mount Flashers
- GBK001 - Gimbal Mounting bracket knobs (2 pieces)
- FT-100 - Float with stopper for all Ice-Ducers
- ST-100 - Stopper for all Ice-Ducers (2 pieces)
- RB-100 - Eye-bolt support for all Ice-Ducers
- RH-100 - Rod Holder assembly for Ultra Packs and Pro Pack IIs
- CH-100 - Beverage Holder for Rod Holder.
- TKB001 - Vexilar 4 by 6 inch tackle box
- V-120 - 9 Amp / 12 Volt Battery with 1 Amp Charger
- V-410 - 12 Volt / 1 Amp Automatic Charger
- V-100 - Replacement 9 Amp / 12 Volt Battery.
- PCDCA1 - 12 Volt Accessory Plug Power Cord (FL-8/FL-18)
- PCDCA4 - 12 Volt Accessory Plug Power Cord (FL-12, FL-20, FL-22 & FLX-28)



ACCESSORIES

Ultra Pack Carrying Case Only

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



UC-100

Pro Pack II Carrying Case Only

The latest generation of our most popular portable carrying case.



PC-100

Genz "Blue Box" Carrying Case Only

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



BC-100

Soft Pack for the Genz Pack

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



SP0005

Soft Pack for the Pro & Ultra Carrying Cases

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



SP0007

FlexLight

Provides an adjustable bright white light running for hours on a single AA battery. A great way to put light where you need it.



L-202

S-Cable

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



S-140

Sun Hood

Shields the display on FL-8s, FL-8SLTs, FL-8SEs, and FL-18s. Easy assembly and installation.



S-240

Mag Shield

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



MS0001

Flasher Cover

Neoprene cover will protect the flasher face during transport and storage. Fits models FL-12, FL-20 & FLX-28.



COV001

Tri-Beam Ice-Ducer

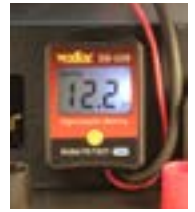
Gives you the option to select from a wide 20° beam, a mid 12°, or a narrow 8° beam angle. Switch included.



TB0033

Digital Depth & Battery Level

Shows the current depth and level of charge as a percentage left in the battery.



DD-100

Pro Mount

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



SMC001

Deptherm

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



104

A.C.E. Adhesive

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



ACE001

Tackle Tote

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



TT-100

Beverage Holder

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



CH-100

Accessory Plug

Connect your FL unit to an Auto or ATV power jack.



PCDCA



Vexilar Clothing

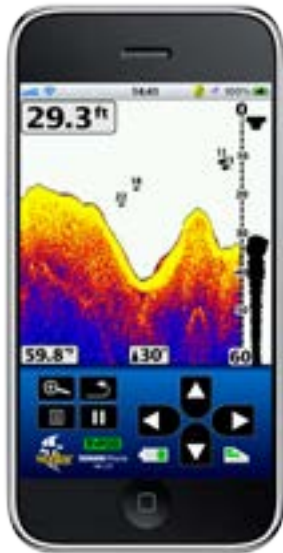
Vexilar offers a wide variety of styles of caps, t-shirts, hoodies, bibs and parkas. Be sure to show your Vexilar colors by either ordering from our web site or by visiting your nearest Vexilar dealer.



Visit vexilar.com for more great gear and wear!



Vexilar's SONARPHONE is a REVOLUTION



The new SONARPHONE gives you amazing high-speed depth sounder performance on your Smart Phone or Tablet

As the name implies, SONARPHONE turns your smart phone 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 smart phones 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 software App is downloaded for free from the App store and works with both Android and iOS systems.

- Compatibility: iOS 4.3 (iPhone, iPad) and Android 2.0
- Free App download
- Automatic Ranging & Sensitivity
- Water Temperature & Depth Indicator
- Audible Alarms for Fish, Shallow and Low Battery
- Fish Icon
- Zoom Bottom Track
- Noise Rejection
- Surface Clarity
- Battery Indicator
- SonarPhone Models Available:
SP100 (T-Pod), SP200 (T-Box), SP300 (T-Box Portable)

Visit Vexilar.com for More Info!

Vexilar's FishPhone is All About FUN

FISHPHONE turns your smart phone or tablet into a fully functional underwater camera monitor. Now anyone with a smart phone or tablet will get a high quality video image delivered right to the palm of your hand.

Using WiFi signal technology to create its own "hotspot" that reaches out 300 feet in all directions, so you can share your video signal with as many friends as you like or keep it totally secure. You don't need cell phone coverage to use it, the FISHPHONE works anywhere in the world.

Model: FS100 - FishPhone Underwater Camera System

Both FREE software Apps are downloadable from the Apple App store and Google Play. Both work with Android and iOS Systems.

Visit Vexilar.com for More Info!





FLASHER SPECIFICATIONS

Operating Voltage: 10.5 - 15 Volts (12 Volts Nominal)
Current Draw: 175mA

Power Output: 400 Watts (Peak to Peak) Maximum
Frequency: 200 kHz
Display Resolution: 525 Lines of Resolution

Target ID (FL-8se & FL-12): 1" Minimum
Target ID (FL-18 & FL-20): 1/2" Minimum
Target ID (FLX-28): 1/8" Minimum

Display Colors: 3 - Red, Orange, and Green
> FLX-28 5 - Red, Yellow, Green, Blue and White

Interference Rejection 10 Steps
> FLX-28 20 Steps

Weight: 1.1 Lbs.

Dimensions (FL-8se & FL-18): 4.4"H x 6"W x 3.5"D
Dimensions (FL-12, FL-20 & FLX-28): 4.8"H x 6"W x 2.4"D

Depth Scales

FL-8se: 0-20', 0-30', 0-40', 0-60', 0-80', and 0-120'*
FL-12: 0-20' LP, 0-20', 0-40', 0-60', 0-80', and 0 - 200
FL-18: 0-20', 0-40', 0-60', 0-80', and 0-200'***
FL-20: 0-20' LP, 0-20', 0-40', 0-60', 0-80', and 0-300
FLX-28 10, 15, 20, 25, 30, 40, 50, 60, 80, 100, 120, 160, 200, 240
and 300 Feet
(Manual Mode: 10, 20, 30, 40 and 50 Feet)

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

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

*** Technical specifications, such as effective power output, may vary slightly from model to model.



TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE
Unit is turned on, but no display and motor is not running.	Check for bad connections, proper hook up polarity, and make sure you have a good, fully charged, battery.
Unit is turned on and the motor is running, but there is no display.	Battery voltage too low. The unit will show no display if the voltage is below 8 volts. Check voltage while unit is running.
Unit runs well for a short time, then lights 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 tell what is what.	Improper transducer adjustment. Also, gain may be set too high or, if gain is set to minimum, switch to the LP Mode.
Unit works well when sitting still or at when slow trolling, but loses reading at higher speeds.	Improper transducer type, installation, or adjustment causing a loss of clear water flow across the transducer when the boat reaches a certain speed.
Unit shows noise when engine or electric motor is turned on.	Defective engine or electric motor. Also can be improper grounding or missing ground in electrical system.
I.R. does not work. Can't eliminate interference from other depth finder.	Gain may be set too high or the transducer is weak. Also, check for ice or debris buildup under the gain control.

Storage & Prevention

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

BATTERY & CHARGING TIPS

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

BATTERY DO'S

- Allow 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.
- If the battery is an open type, add distilled water AFTER battery is recharged.
- Keep the battery clean and dry.
- Charge periodically during battery storage.
- **Disconnect the battery when not in use.**

BATTERY DON'TS

- Do Not Overdischarge the battery, You should never drain a battery beyond 80%, meaning less than 20% left. Your Vexilar will automatically shut off at this point, but you need to 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.
- Damage the battery or terminals by dropping. Your battery is heavy, but fragile. Take care that it doesn't get banged around or dropped.

Charging Trouble Shooting

- **Charger Flashes Red:** This means you have connected the battery terminals incorrectly Red is positive, black is negative. Reverse the connections and look for a solid red light.
- **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:** Even if your battery is fully charged the light should briefly go from red to green, when you first plug it in, this is normal.
- **Battery Will Not Charge:** If you connect the battery and it stays green 100% of the time, your battery may be completely dead and your charger does not even recognize it has been connected to terminals. Battery should be replaced.

IMPORTANT: The battery warranty is covered under a pro-rated performance guarantee. Failure to properly care for battery is not the responsibility of Vexilar. See Vexilar.com for specifics.



ELECTRICAL INTERFERENCE TROUBLE SHOOTING

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

SOURCES

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

WIRING

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

GROUNDING

The boat's electrical system should have a common "Earth" ground to the water. Most boats electrical systems are grounded through the outboard to the water. Many times a 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.

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



SERVICE AND SUPPORT

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

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Don't Forget: Register Your Vexilar Product the Easy Way!

Go to <http://vexilar.com/warranty>

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!



NOTES

Visit: Vexilar.com