

7 inch Dual-Frequency Fish Finder

Model: FS117

Operation & Installation Manual



NINGLU

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Introduction

Thank you for choosing our fish finder—FS117

The FS117 is a high quality, dual-frequency fish finder. It uses TFT LCD to provide a color display for easy daylight viewing that can be dimmed for night fishing. With 8 or 12 colors bar, the colors represent different signal strengths, making the displays easy to recognize the bottom and fish schools. You can choose table mounting or flush mounting for optimum viewing.

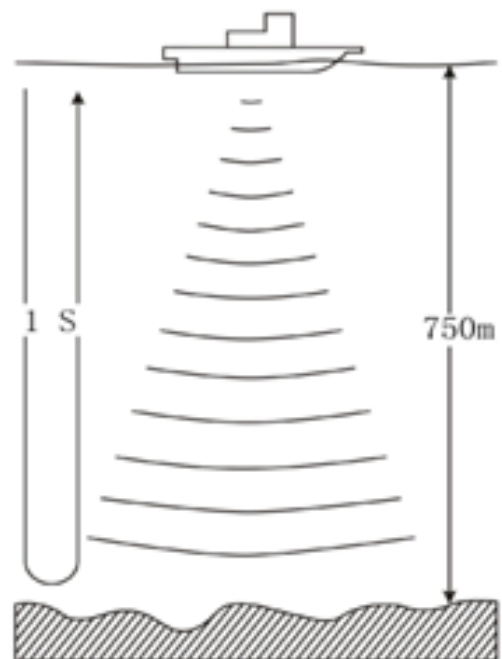
FS117 is consist of the following two parts:

- Operating & display unit
- Transducer

Theory of fish finder

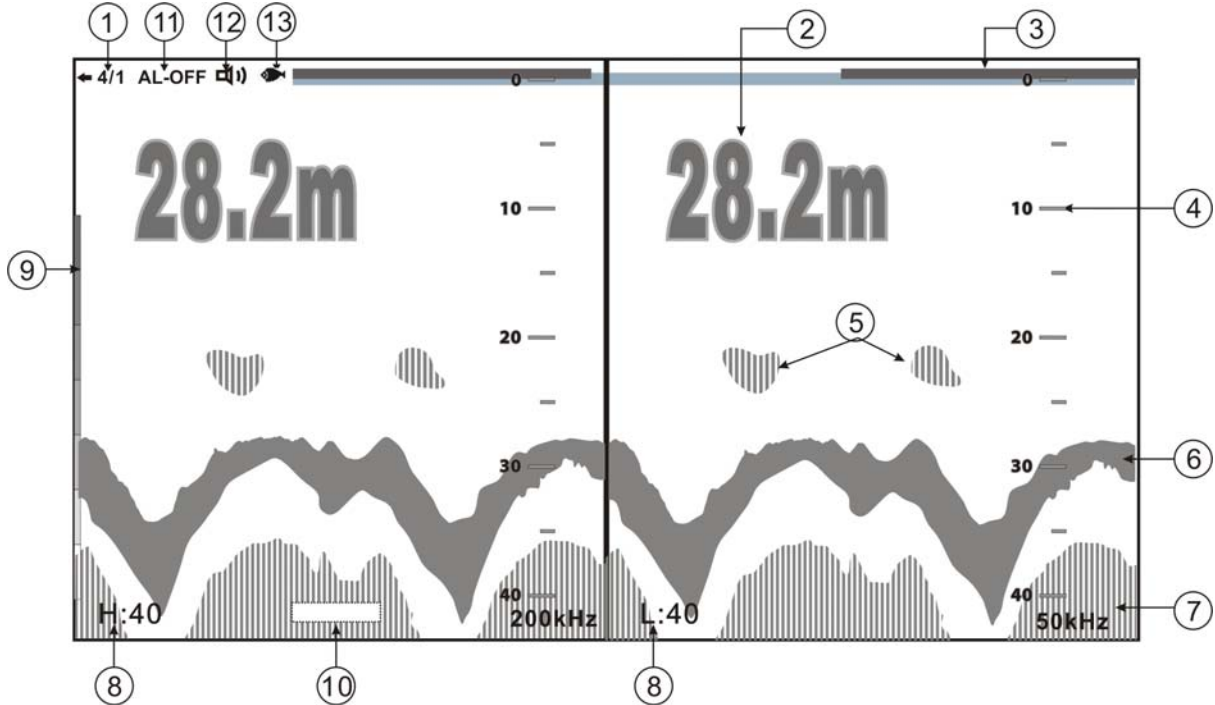
The transducer generates an ultrasonic pulse, which travels down towards the bottom at a speed of about 1500m/sec, spreading out into a cone shape. When the pulse meets an object, such as a fish or the bottom, it is partly reflected back up towards the boat as an echo. The depth of the object or bottom is calculated by the fish finder by measuring the time taken between sending a pulse and receiving the echo. When an echo has been returned, the next pulse is sent.

The fish finder converts each echo into an electronic signal, displayed as a vertical line of pixels. The most recent echo appears on the extreme right of the display, with the older echoes being scrolled towards the left, eventually disappearing off the display.



Operation

Screen



1. Picture feed speed
2. Depth
3. Time marker (one yellow line indicates 30s)
4. Basic range
5. Fish school or other objects
6. First reflection echo
7. Second reflection echo
8. Gain (H: 200 kHz, L: 50 kHz)
9. Color bar
10. Zoom mode display area




Bottom lock zoom mode




Layer zoom mode

11. **AL-OFF** Shallow alarm symbol

12.  Buzzer symbol

13.  Fish alarm symbol

Note:

1. Bottom-lock zoom and layer zoom is not available in dual-frequency mode or range relay mode
2. In range relay mode, the right corner of the screen shows ""

Operation


Keyboard



POWER

 Turn the power supply on/off.

BACKLIGHT

 Adjust the LCD backlight.

MENU

Press **【MENU】** to display the menu items. Then select a particular option. Using the **【▲】** or **【▼】**, and use **【◀】** or **【▶】** to adjust the setting value. Press **【MENU】** again to save the setting and quit from menu.

RANGE

【RANGE▲】 & **【RANGE▼】**

Press the range key to adjust the range manually.

Range scope: 4 8 24 40 56 80 120 160 200 240 280m.

GAIN

【GAIN+】 & **【GAIN-】**

In single frequency model, press **【GAIN+】** or **【GAIN-】** to adjust the gain value for the clearest echo.

In dual frequency model, press **【GAIN+】** or **【GAIN-】** to adjust the gain value of dual frequencies simultaneously.

Operation

FREQ

Press **【FREQ】** to select display mode:

1. 200 kHz display mode
2. 50 kHz display mode
3. Dual-frequency display mode

ZOOM

Firstly, choose Zoom mode in MENU, see page 7 ~ 8.

Bottom-lock zoom Mode

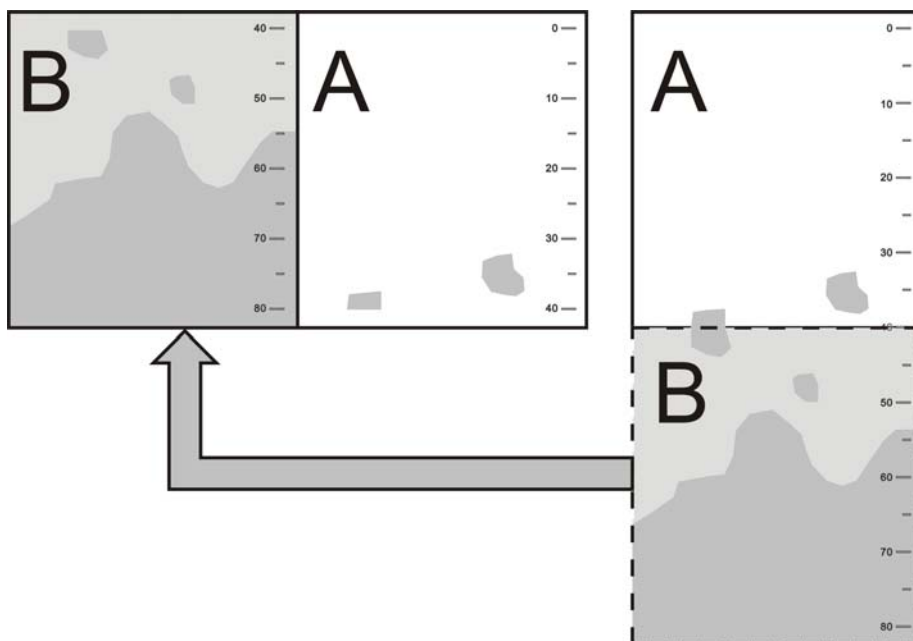
Press **【ZOOM】** to choose zoom rate: OFF, ×2, ×4, ×8

Layer Zoom Mode

The screen is divided into 4 layers, press **【ZOOM】** to choose the layer expanded.

RELAY

Press **【RELAY】** to activate relay display mode.



Operation

Menu

Menu item	Default	Setting value
PIC	【OFF】	0, 1/4, 1/2, 1/1, 2/1, 4/1
AUTO_RANGE	【OFF】	OFF, ON
TVG	【OFF】	OFF, LOW, HIGH
NOISE REJECTION	【OFF】	OFF, LOW, HIGH
ZOOM	【OFF】	Bottom-Lock zoom, Layer zoom
FISH ALARM	【OFF】	OFF, ON
SIGNAL DELETE	【0】	Cancel 0~5 of 8 colors, Cancel 0~7 of 12 colors,
COLORS	【8】	8, 12
SHALLOW ALARM	【OFF】	OFF, 0.8~10.0m
BUZZER SWITCH	【OFF】	OFF, ON
UNIT	【m】	m (Meter), fm (Fathom)

Operation

PIC

Set the picture feed rate (to the left): 0, 1/4, 1/2, 1/1, 2/1, 4/1.

AUTO_RANGE

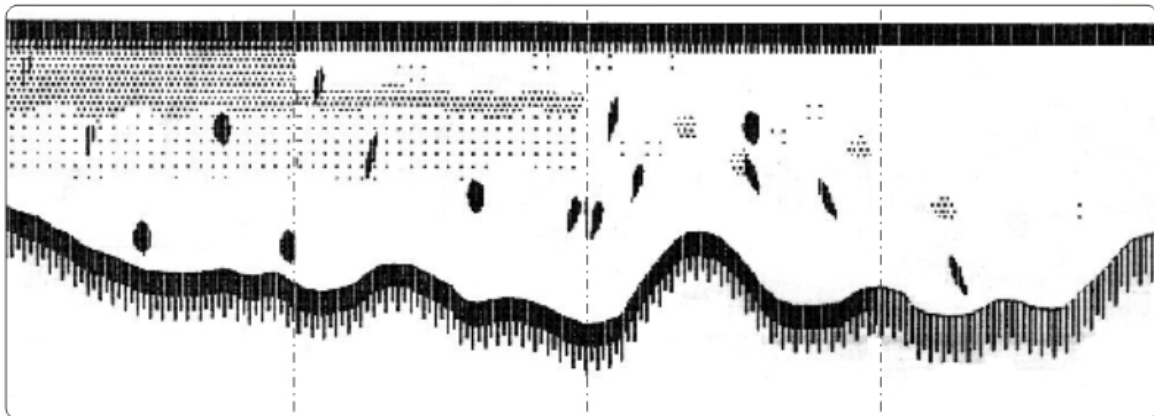
“AUTO_RANGE” means Auto-range; the basic range will change automatically to always show the full depth from transducer face to bottom regardless of changes in depth.

When “A_RANGE” function is on, the screen will indicate “AT” on the upper right. Then operator can't change the range manually.

TVG

TVG is to suppress unnecessary echoes near the water surface such as bubbles and floating matter.

Each press of the **【◀】** or **【▶】** key changes the ability for suppress the echoes as follow:



TVG -OFF.
There are a lot
of interfering echoes

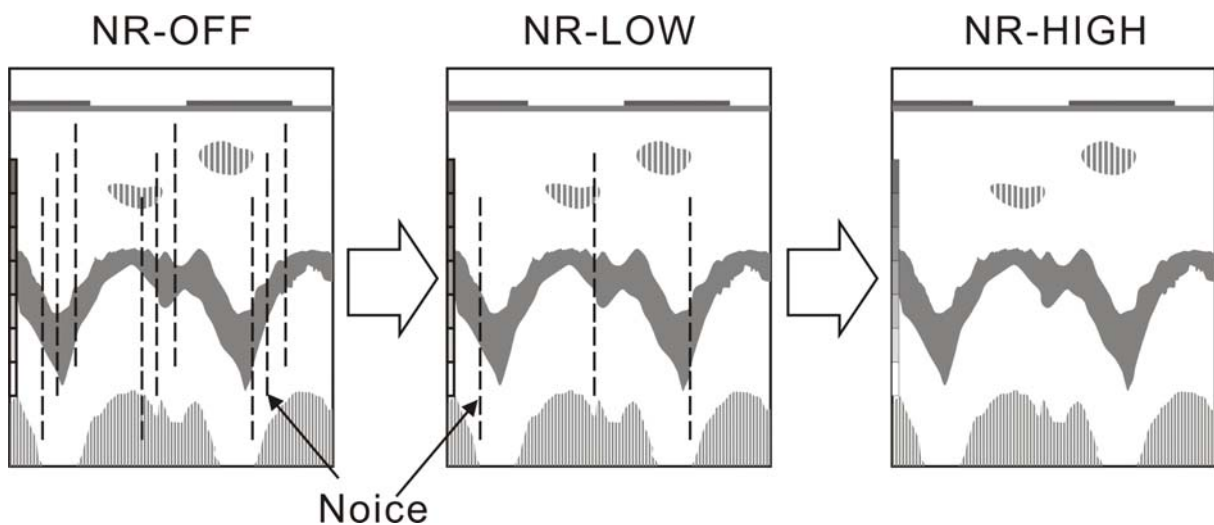
The fish and bottom
echoes are clearly

TVG is so high
that fish and bottom
echoes have been
suppressed

Operation

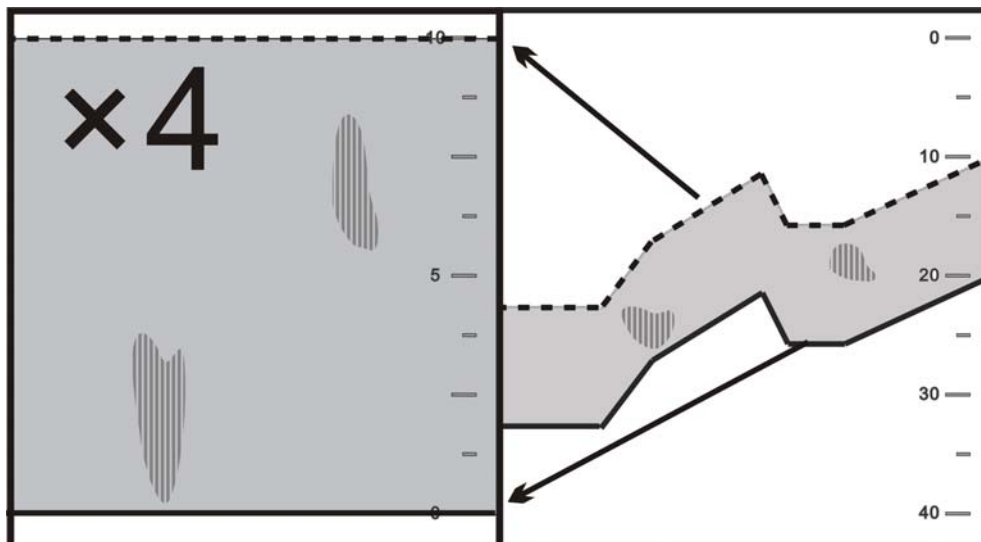
NOISE REJECTION

NOISE REJECTION is to reject noise interference from nearby fishing vessels. Each press of the 【◀】 or 【▶】 key changes the ability for rejecting the interference as follow:



ZOOM


Bottom-lock zoom Mode



If Bottom lock zoom is on, the zoom section moves so the bottom is always displayed in the zoom section, regardless of changes in depth.

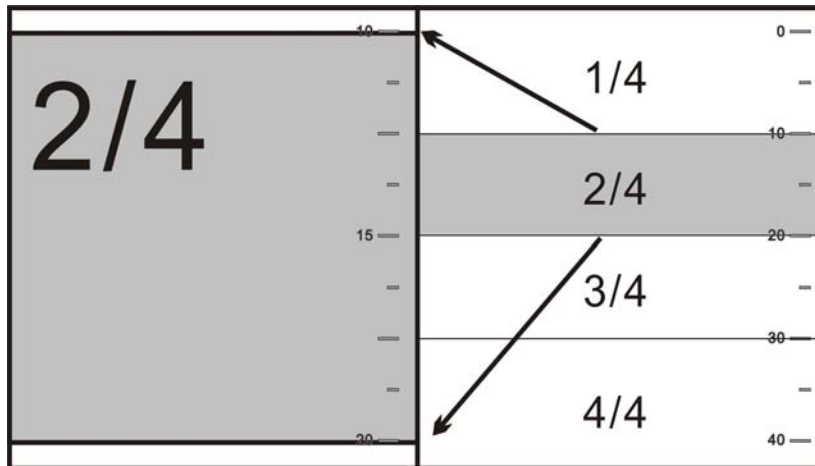
Bottom lock zoom is not available in dual-frequency mode or range relay

Operation


mode. When the Bottom lock zoom is on, “” will show on the screen.

Press **【MODE】** to choose zoom rate: OFF, ×2, ×4, ×8


Layer Zoom Mode



The screen is divided into 4 layers, press **【MODE】** to choose the layer expanded.

Layer zoom is not available in dual-frequency mode or range relay mode.
When the layer zoom is on, it will display “”.

FISH ALARM

It will display a fish symbol “” when the fish alarm function is on.

The fish alarm is available when the fish school is deeper than 2m deep.

SIGNAL DELETE

Colors indicate the strength of the echo from strong to weak.

The weaker colors can be deleted to show the needed echoes clearly.

Cancel 0~5 colors (when 8 colors chose).

Cancel 0~7 colors (when 12 colors chose).

Operation

COLORS

There is a choice of the colors bar: 8 colors or 12 colors

8 colors bar:

Red, orange, yellow, green, light green, lake blue, light blue, dark blue

12 colors bar:

Dark red, red, orange, ochre, yellow, light green, green, light blue, cyan, gray, purple, blue.

SHALLOW ALARM


The shallow alarm depth can be set between 0.8~10.0m.


If the shallow alarm function is on, it will sound an alarm when the sea bottom becomes shallower than the set depth.

Press any key on the operator unit to mute the alarm.

BUZZER SWITCH

Turn the buzzer on or off.

“” indicates the buzzer is on.

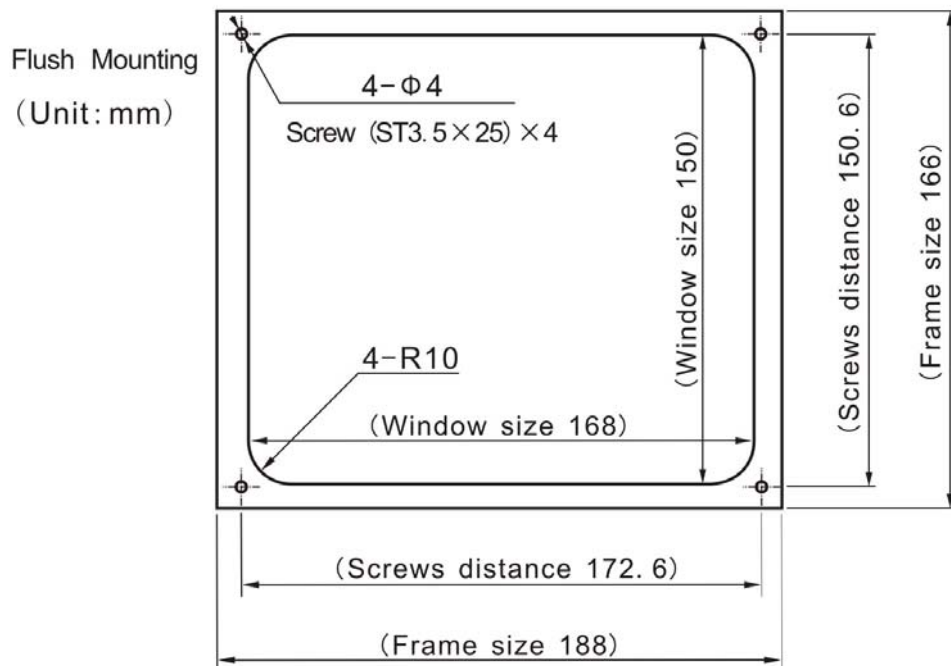
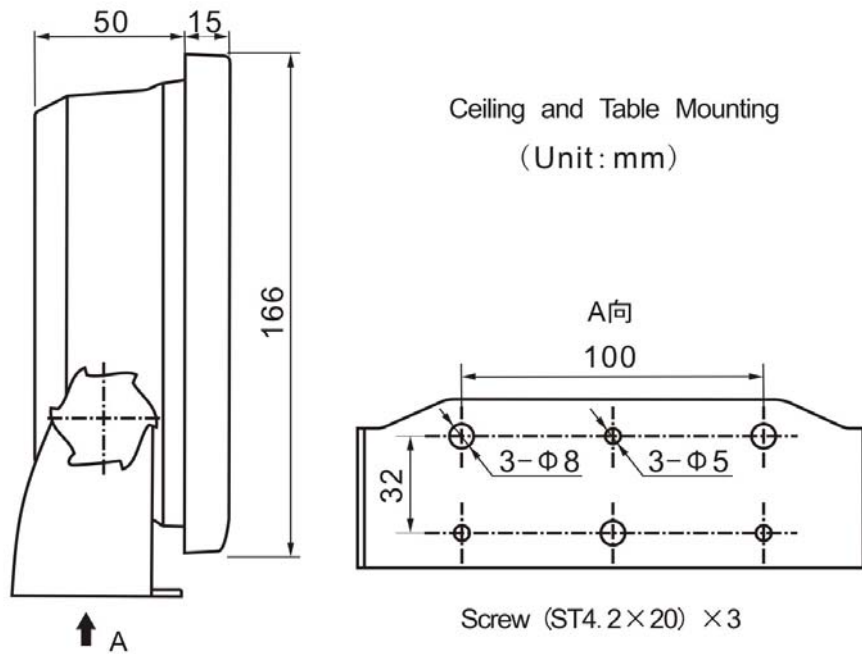
“” indicates the buzzer is off.

UNIT

Choose the depth unit: m (Meter), fm (Fathom).

Installation

Operator unit



Note of operator unit installation

1. Avoid direct sunlight, shock and vibration.
2. Power supply should be steady to avoid damage of high voltage.
3. Operator unit should be far away from the equipments which generate electromagnetic radiation, such as: motors, generators.

Transducer

Transducer in the air must be avoided! This may cause mechanical damage of the element.

Optimal system operation is achieved by fitting the transducer as deep as possible on the hull. The surface of the transducer must be installed horizontal. On vessels with a deep keel, if the transducer must be fitted higher than the keel, it should be fitted towards the side, as far from the keel as possible to avoid false keel echo.

Do not mount transducers close to the propeller or aft of other hull installations (outlets, vents or other protruding details).

It is of course necessary to select a part of the hull that is submerged under all load and speed conditions, and to avoid positions where air is trapped in heavy weather.

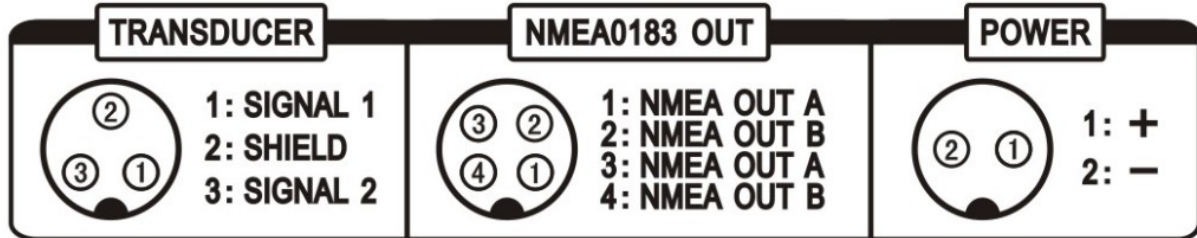
Cleaning and maintenance

Clean the screen only with a damp cloth when dirty or covered in sea salt.

Avoid abrasive cleaners, petrol or other solvents.

Keep the transducer free of weed, paint and debris.

Specifications



Item	Specification
Display	7 inch TFT, 480×234 pixel
Frequency	200kHz /50kHz
Range	4 8 24 40 56 80 120 160 200 240 280m
Output Power	400W
Time scale	30s
Depth Unit	Meter, Fathom
Echo intensity	8 or 12 colors
Alarm types	Fish alarm (>2m) , Shallow water alarm (>0.8m)
Power supply	11.6VDC ~39VDC
Temperature	0~50℃, IEC 60945
Water proof	IP23
Weight	1.3kg
Measurement	W188 x H166 x D65mm
Installation	Table, Flush (Window size 168×150mm)

Principle of Dual-frequency Working

