FURUNO

FISH SPECIES AND BIOMASS SOUNDER

Model **FSS-3BB**

IDENTI-FISH™ TruEcho CHIRP FDF FURUNO Digital Filter AUTO

More details on
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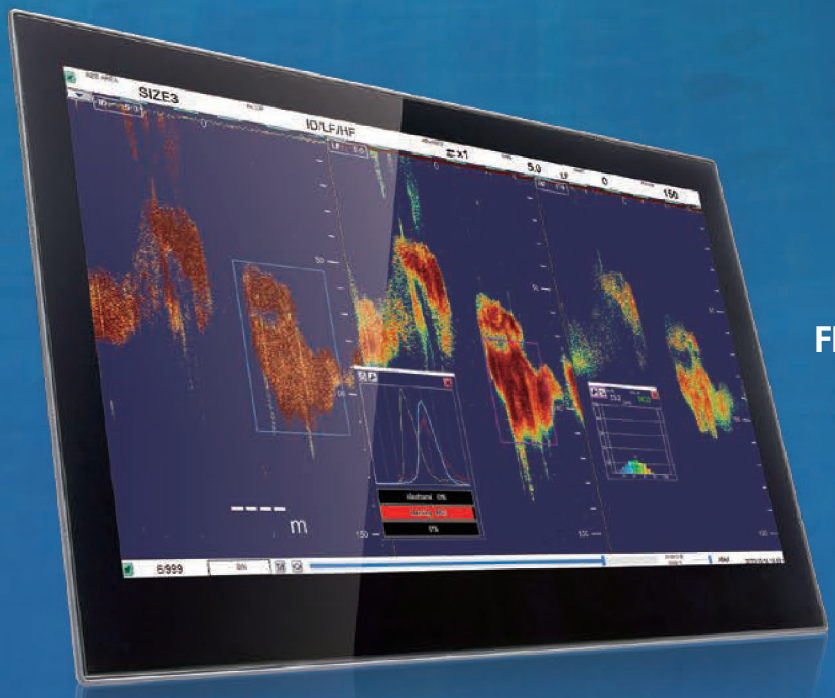
High-end Fish Finder with newly



FISH SPECIES AND BIOMASS SOUNDER

Model **FSS-3BB**

The FURUNO Fish Species and Biomass Sounder model FSS-3BB is equipped with a brand new revolutionary technology, the IDENTI-FISH™ function, which supports the identification of fish species in real time during fishing operation. IDENTI-FISH™ function not only improves the efficiency of fishing operation, but also contributes to sustainable fishery by supporting the prevention of by-catch.

The IDENTI-FISH™ function consists of the IDENTI-FISH™ echo display and the IDENTI-FISH™ histogram. The IDENTI-FISH™ echo is a combination of high and low frequency echoes, while the IDENTI-FISH™ histogram shows the distribution of echo pattern in the selected area. One of the characteristics of IDENTI-FISH™ is the capability to view swim-bladderless fish, such as Atlantic mackerel, much clearer than before, using both the IDENTI-FISH™ echo and the IDENTI-FISH™ histogram. A mixed school of Atlantic mackerel and Herring is identified using IDENTI-FISH™. IDENTI-FISH™ also allows you to register your own histogram curves for different species you have encountered.

The FURUNO FSS-3BB combines the benefits of both the latest fishing innovations and powerful customization capabilities to help ensure the success of your operation.

IDENTI-FISH™ function*1!

- 3 kW TruEcho CHIRP™ Fish Finder
- Simultaneous transmission
- The IDENTI-FISH™ graph*1 indicates the degree of similarity of fish species*2 by histograms and numerical values.
- The IDENTI-FISH™ echo display*1 distinguishes swim-bladderless fish like Atlantic mackerel and fish with a swim bladder like herring.
- Fish-size graph*1 allows estimation of fish size distribution in three locations at a glance.
- Data recording and screenshot function for easy review of past echoes and recordings
- Scroll back mode allows the user to review past data.
- Recorded data can be saved to an external data storage device.
- Easy access to Gain setting is applied to all screens including high frequency, low frequency and IDENTI-FISH™ echo display.
- Net sensor information*3 can be shown on the display.
- Constant and stable display of echoes is achievable with the use of the heave offset function*4.
- Geographical location of schools of fish can be output to connected navigational equipment.
- Dual monitor installation is available.
- Simple operation with the Trackball Control Unit and Instant Access bar™
- Separate processor unit and transceiver unit allow installation in large size ships.

*1 Compatible transducer is required.

*2 The model data saved to the system are Atlantic mackerel and herring. You can register a fish species name in the model data and create own reference curves.

*3 Compatible models : TE-155 (Marport) , TS-337A (Imaginex) and ITI System (Simrad)

*4 SATELLITE COMPASS™ is required.

left: High/Low frequency echo display
right: IDENTI-FISH™ echo display

19" Marine Display MU-190HD (customer supply)

The IDENTI-FISH™ function* helps you prevent b

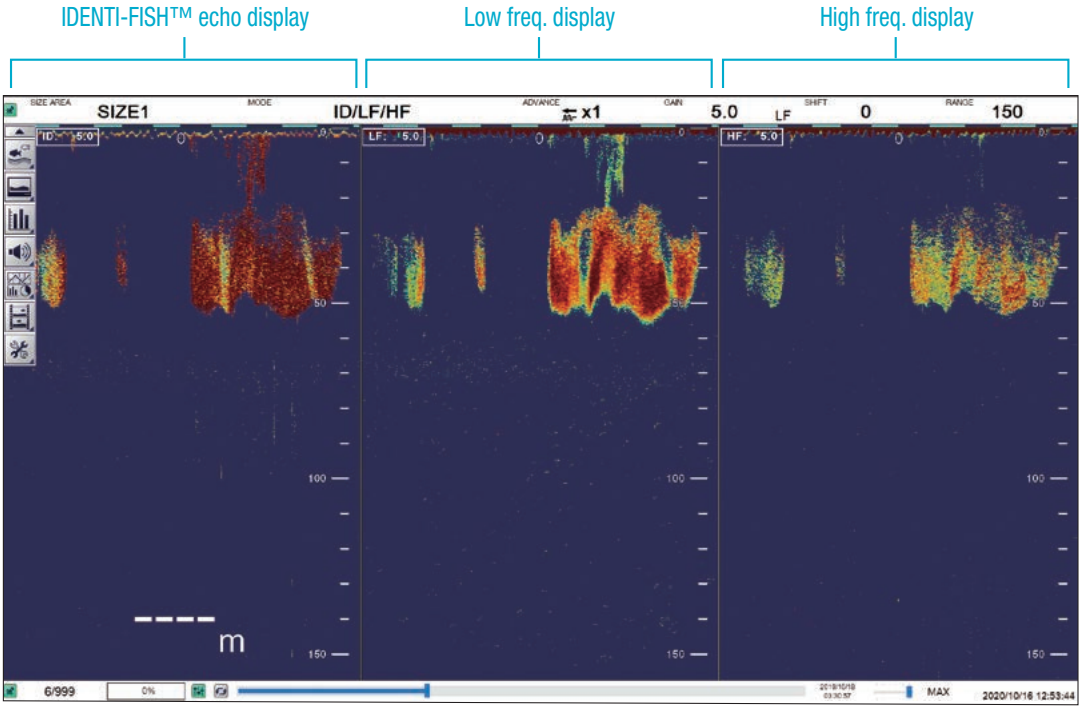
NEW

IDENTI-FISH™ function*

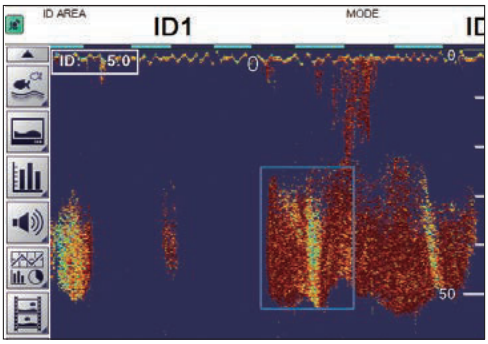
New IDENTI-FISH™ function consists of an echo display and a graphic histogram.

IDENTI-FISH™ echo display

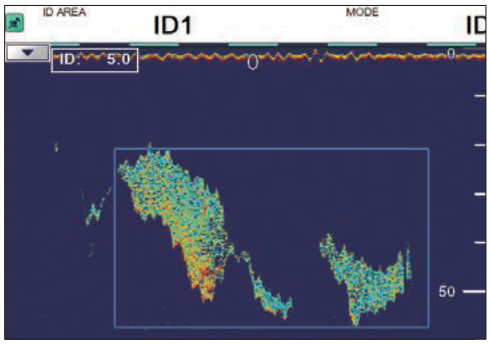
The IDENTI-FISH™ echo display is a combined echogram of high and low frequency echo.
This mode allows you to visualize a difference of the echo between swim bladder fish and swim-bladderless fish.



When the color of echo is red-brown on the IDENTI-FISH™ echo display, you will be able to deduce that it is a school of fish with swim bladder like herring. On the other hand, if it is light green colored echo, you can assume it is probably swim-bladderless fish like Atlantic mackerel, as shown in the screenshot below.



Echoes of school of swim bladder fish.
(Displayed in red-brown color.)

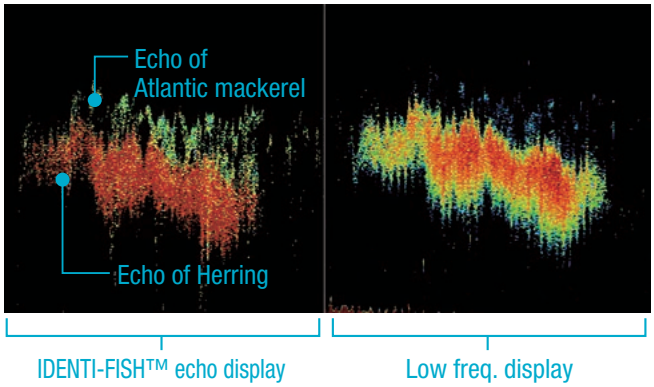


Echoes of school of swim-bladderless fish.
(Displayed in light green color.)

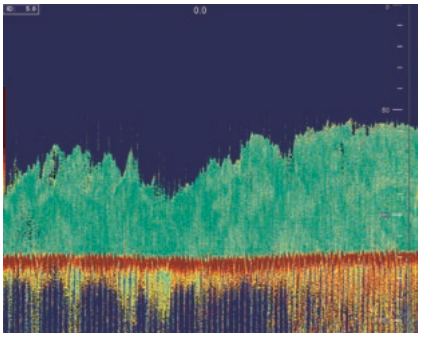
by-catches and contributes to sustainable fishery.

* Compatible transducer is required.

The IDENTI-FISH™ echo function displays echoes with different color depending on the fish species so that you can quickly identify the species and their distribution even when mixed together.

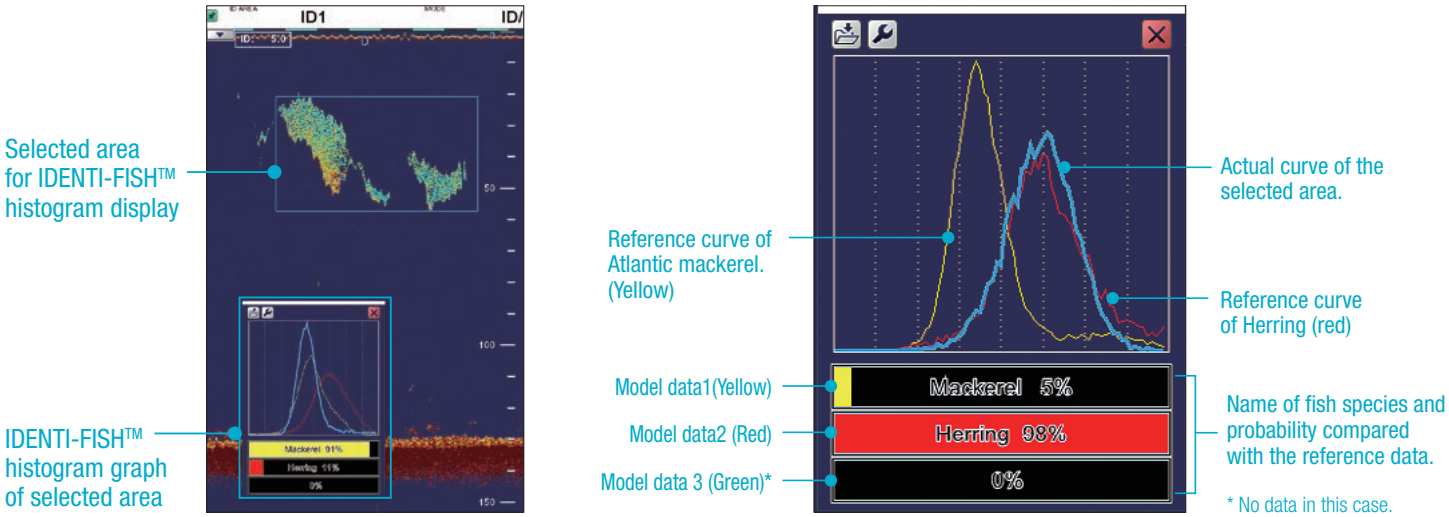


The following picture shows that the FSS-3BB is capable of identifying swim-bladderless fish. In this example, the Atlantic mackerel echo is displayed in light green.



IDENTI-FISH™ histogram graph

The IDENTI-FISH™ graph compares the histograms of the school of fish within the measurement range with the model data, and indicates the similarity of fish species by numerical values and bar graphs. The default model data saved to the system are Atlantic mackerel and herring. You can add new fish species in the model data and create own reference curves for any fish species. Two areas of the echogram can be measured and analyzed simultaneously.



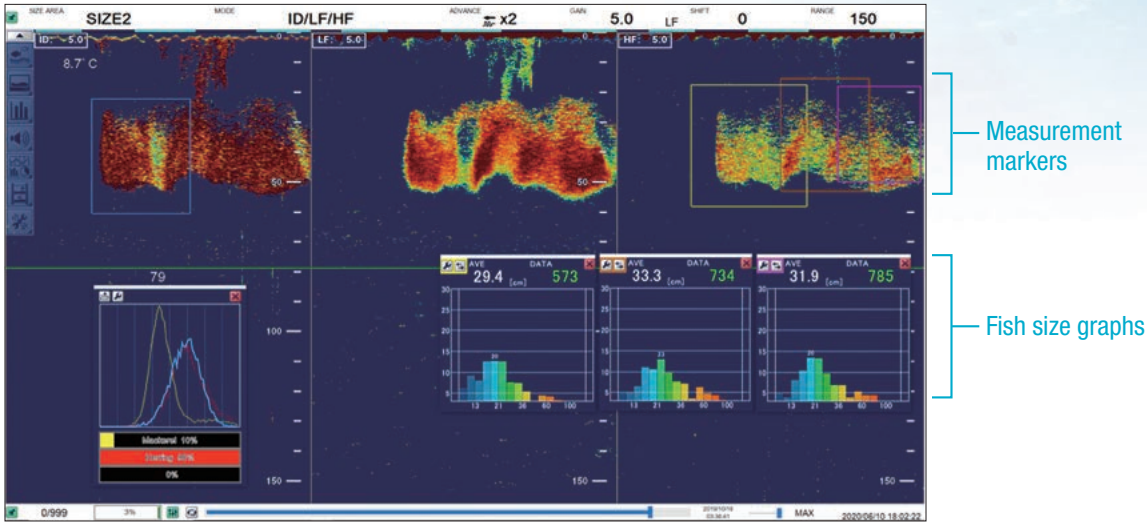
In the upper right example, the yellow line represents a reference curve of Atlantic mackerel. The red line represents a reference curve of herring. The blue line shows actual echo distribution pattern as measured in the selected area on the IDENTI-FISH™ echo display.
The blue line is almost identical to the red line which is a reference curve of herring, and the degree of similarity indicates herring with 98% accuracy, you can therefore assume, with a high level of confidence, that it is indeed a school of herring.

The combination of the IDENTI-FISH™ echo display and the histogram graph is useful for distinguishing fish species. The FSS-3BB can be customized as a dedicated fish finder for each user with this unique function.

Accurate fish size measurements in easy-to-understand graph form**

The FSS-3BB measures the size and distribution of fish in the selected school, and displays this information in a graph that can be understood at a glance. TruEcho CHIRP™ technology has improved the accuracy and reliability of fish size measurements and graphs (max.3). This function allows you to compare and analyze the size of fish and the density of schools, which are key data when aiming for fish of a particular size.

** Fish length is a reference value calculated from reflection intensity. Compatible transducer is required.



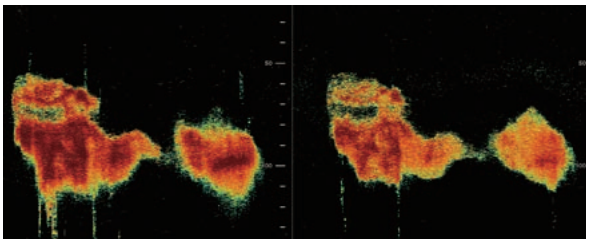
The FSS-3BB has four methods of fish size measurement. You can select your favorite measurement method from Instant Access bar by just clicking on the menu button.

- [Entire Area] ····· Measure of all detected fish
- [Specific Range] ····· Measures the detected fish within a specific depth
- [Bottom Trace] ····· Measures the detected fish near the bottom
- [Specific Area] ····· Measures the detected fish within the area specified

Simultaneous transmission

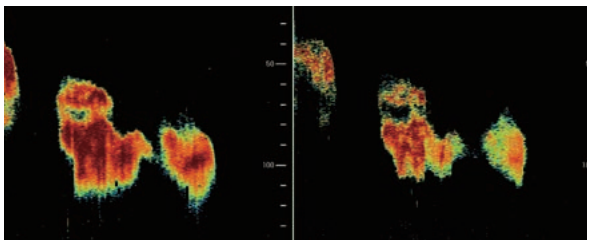
The echo-update rate is doubled by applying simultaneous transmission, which provides more rich presentation of school of fish.

Echo display with the simultaneous transmission



High frequency　　Low frequency

Echo display with the alternate transmission

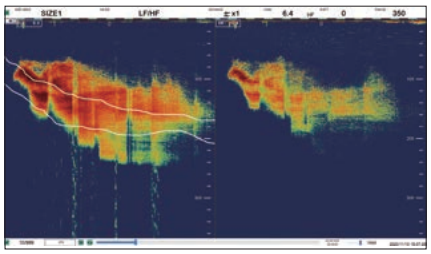


High frequency　　Low frequency

Overlay of depth line by connecting net sensor

Net sensor information can be shown on the display*.

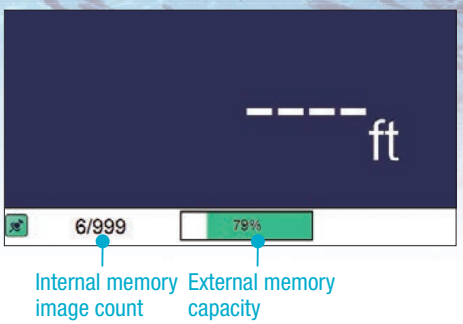
* Compatible models are TE-155 (Marport), TS-337A (Imaginex) and ITI System (Simrad).
The initial setting is required.

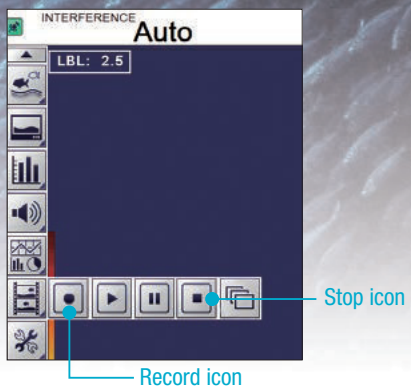


Screenshots and echo data can be recorded and play back

A maximum of 999 screenshots can be saved on the processor unit. You can also replay the echo display at any time if you wish to see it again. This is helpful in comparing the sizes of schools of fish. For external memory devices*, the number of files that can be saved depends on the capacity of the device.

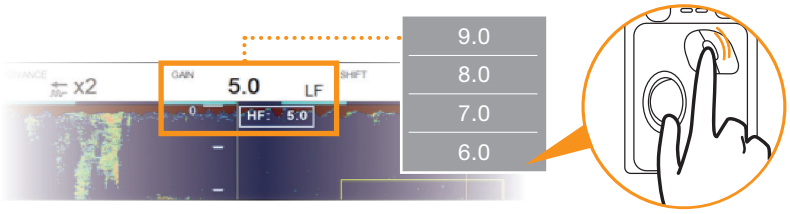
* Option





Easy and quick operation

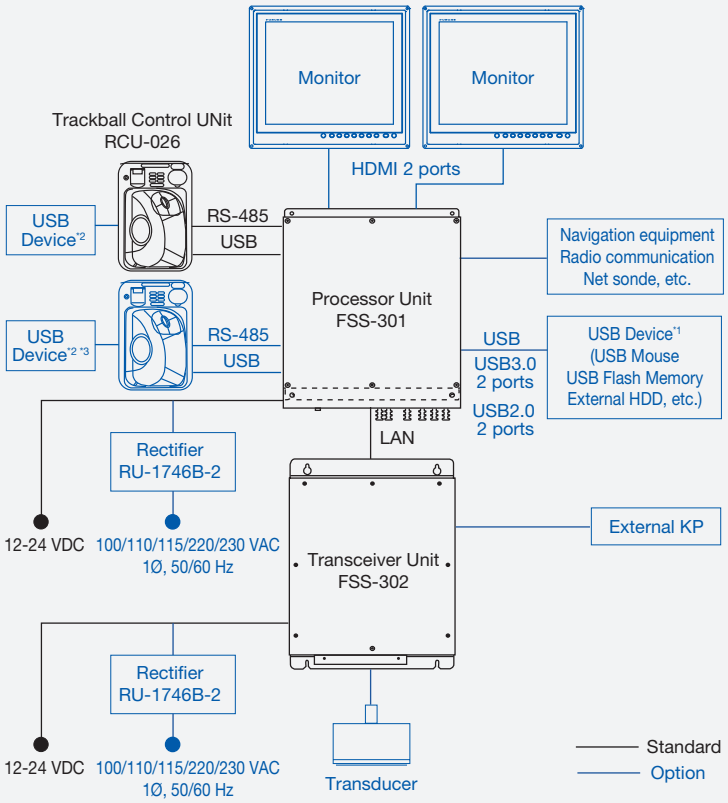
The screen header also contains Range, Shift, Sensitivity, Image Feed and Display Mode menus. These functions can be accessed immediately and adjusted by just turning the wheel in the control unit.



The FSS-3BB can be operated easily and quickly with its trackball controller.

Other functions can also be accessed immediately from the InstantAccess bar™. Up to 10 functions can be added to the InstantAccess bar™

SYSTEM CONFIGURATION



*1 Max. 4 USB devicec incl. RCU-026 can be connected.
*2 USB cable is required to connect the processor from RCU-026
*3 To extend the cable from Processor, please use the optional DV/USB repeater.

FISH SPECIES AND BIOMASS SOUNDER

Model **FSS-3BB**

GENGERAL

Transmitting frequency	15 to 242 kHz nominal
Output power	1 to 3 kW
Transmitting method	Dual simultaneously
Transmitting mode	CW/FM
External monitor (required specs.)	
Resolution:	1920 x 1200 (WUXGA), 1920 x 1080 (FHD), 1600 x 1200 (UXGA), 1024 x 1280 (SXGA), 1024 x 768 (XGA)
Interface:	HDMI type-A

PROCESSOR UNIT

Color Indication	64/16 colors
Hue	7 steps (Standard, Hue 1 to 5, customized)
Depth range	5 to 3000 m
Range shift	2000 m max.
Expansion range	5 to 200 m
Echo display mode	High/Low frequency single, Dual frequency, Discrimination
Zoom display	Bottom-lock expansion, Bottom zoom, Marker zoom, Discrimination zoom
Fish size histogram	Histogram
Display advance speed	7 steps (Lines/TX: Freeze, 1/8, 1/4, 1/2, 1/1, 2/1, 4/1)
Language	Danish, English (UK/US), French, Japanese, Norwegian, Spanish

INTERFACE

Number of ports	
Serial	5 ports, NMEA0183 Ver.1.5/2.0/3.0
LAN	2 ports, Ethernet, 10/100/1000Base-T
USB	USB2.0: 2 ports, USB3.0: 2 ports
Video output	2 ports, HDMI type-A
KP control (transceiver unit)	1 port
Data Sentences	Input : GGA, GLL, GNS, MTW, VHW, VTG, ZDA, GPatt, GPhve, pireq, IIDAD, IIDBS, IIHFB, IITPC, IITPT, MPMSD, SDDBS, SDfnz
	Output: DBS, DBT, DPT, MTW, TLL, SDes1, SDes2, SD3sd, SDflg, SDmrk, pidat

POWER SUPPLY

Processor unit	12-24 VDC, 4.0-2.0 A
Transceiver unit	12-24 VDC, 8.3-4.1 A (St-by: 0.79-0.46 A)
Rectifier	100/110/115/220/230 VAC, 1 phase, 50/60 Hz

ENVIRONMENTAL CONDITIONS

Ambient temperature	-15°C to +55°C
Relative humidity	93% or less at +40°C
Degree of protection	Processor/Transceiver unit: IP22
	Control unit: IP22 (IPx0: USB cover opened)
	Vibration: IEC60945 Ed.4

EQUIPMENT LIST

Standard

1.Processor unit FSS-301 1 unit
2.Transceiver unit FSS-302 1 unit
3.Trackball control unit RCU-026 1 unit
4.Installation materials

Option

1.Transducer
2.Trackball control unit RCU-026
3.Rectifier unit RU-1746B-2
4.DVI/USB repeater TM000-FDX06 (TXRX_30M, 50M, 100M, TXRX, RX, TX)
5.Flush mount OP24-27 (for RCU-026)
6.Cable assembly
7.Extension cable (for transducer)
8.Installation materials

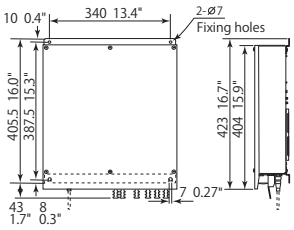
List of CHIRP Transducers for FSS-3BB

Type*	Frequency	Output Power	Cable length	Available funcitons
CM265LHG	42 to 65 kHz/130 to 210 kHz	1 kW/1 kW	12 m	●
CM265LM	42 to 65 kHz/85 to 135 kHz	1 kW/1 kW	12 m	
CM275LHW	42 to 65 kHz/150 to 250 kHz	1 kW/1 kW	12 m	
CM599LHG	28 to 60 kHz/130 to 210 kHz	3 kW/2 kW	15 m	●
CM599LM	28 to 60 kHz/80 to 130 kHz	3 kW/2 kW	15 m	
CM599LHW	28 to 60 kHz/130 to 210 kHz	3 kW/1 kW	15 m	
PM111LHG	38 to 75 kHz/80 to 130 kHz	2 kW/2 kW	15 m	○
PM111LM	38 to 75 kHz/80 to 130 kHz	2 kW/2 kW	15 m	
PM411LWM	40 to 60 kHz/80 to 130 kHz	2 kW/2 kW	15 m	

* Airmar model name
●Fish size histgram and IDENTI-FISH™ ○Fish size histgram

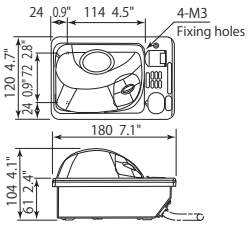
Processor Unit

FSS-301 7.6 kg 16.8 lb



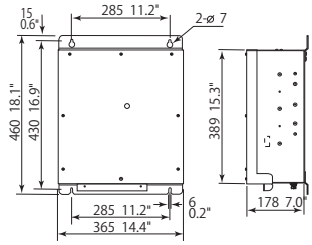
Trackball Control Unit RCU-026

Tabletop Mount 1.4 kg 3.1 lb

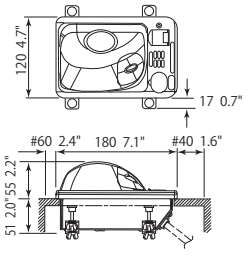


Transceiver Unit (Bulkhead/Tabletop mount)

FSS-302 10 kg 22 lb

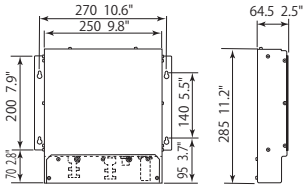


Flush Mount 1.5 kg 3.3 lb

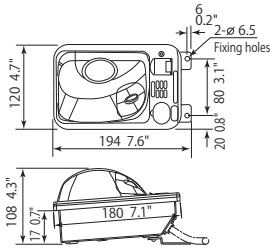


DVI/USB repeater

TM000-FDX06 TX/RX 1.4 kg 3.1 lb



Fixture Mount 1.5 kg 3.3 lb



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