

FULL-CIRCLE COLOR SCANNING SONAR

Models CSH-23 / CSH-24

- Instantaneous fish detection by using a 360° omni-directional transmission
- Simplified observation and analysis of distribution patterns of targeted fish schools
- Easy to understand 15-inch (CSH-23) or 21-inch (CSH-24), 16-color high-resolution CRT display
- Choice of operating frequency from 24, 28, 32, 36, 40 or 45 kHz
- Many unique features: Target Lock, Off-center, Net Shooting Mark, Event Mark True Motion, Automatic Tilt and Estimate Marks
- User-programmable function keys for quick setting of the sonar as fishing conditions change

CSH-23: 15-inch display

CSH-24: 21-inch display



Photo: CSH-23

The FURUNO CSH-23 and CSH-24 are new Color Scanning Sonars especially designed for purse seiners and trawlers. This series of sonars instantly display the underwater situation for 360 degrees all around your vessel. The high-resolution 15-inch (CSH-23) or 21-inch (CSH-24), 16-color display clearly shows all fish and fish schools present in the vessel's immediate area.

There are three basic display modes: Full-Circle Sonar, Sonar/Sounder combination and Sonar/Historical display. Other unique operating features include True Motion, Automatic Tilt Scanning, Audio Search, Off-center, Target Lock and Estimate Marks. Fish within an Estimate Mark is presented in a zoomed window along with a histogram showing the strength of the echo

components. This graphically helps to assess the concentration of the targeted fish school. A maximum of two Estimate Marks can be entered and one can be presented in the Target Slice Mode. This mode divides the fish targets into several depth layers to analyze the vertical distribution of the fish school. This presentation allows the comparison of two fish schools in determining which one should be targeted for catching.

External sensors providing vessel position, heading, speed, depth and water temperature may be input. The CSH-23 and the CSH-24 will then display vessel position, speed, heading, course, depth, surface water temperature as well as operate in its innovative True Motion mode.

SPECIFICATIONS OF CSH-23/CSH-24

1. Display

High-resolution 15-inch CRT (CSH-23), 21-inch (CSH-24),
640 (H) x 480 (V) dots

2. Presentation Color

Echoes in 16 colors, Marks in 4 colors

3. Frequency (specify when ordering)

24, 28, 32, 36, 40 or 45 kHz

4. Presentation Modes

Display mode: Full-Circle Sonar
Sonar/Sounder combination
Sonar/Historical

Orientation mode: Head-up
North-up*
True Motion*
*Appropriate sensors required

5. Range Scales

60 - 2,000 m (3,200 m in Off-center)

6. Pulselength

Pulselength: 0.5 to 20 ms (depending on range scales)

7. Beamwidth (at -3 dB)

TX: 360° (hor) x 10° - 13° (ver)°

RX: 8° - 16° (hor)* x 11° - 14° (ver)*

*Depending on frequency

8. Tilt

Manual control: -5° to 60° (downward) in 1° steps

9. Hull Unit

	800 mm	1200 mm	1600 mm
Travel:	800 mm	1200 mm	1600 mm
Raising Time:	16 seconds	22 seconds	28 seconds
Lowering Time:	15 seconds	20 seconds	25 seconds
Ship Speed:	18 knots	18 knots	15 knots
(Raise/Lower):	(15 knots)	(15 knots)	(12 knots)

10. Audio Search

30°, 60°, 90°, 180°, 330°

Audio Output: 2 W, Frequency: 1.1 kHz

POWER SUPPLY

- 100 VAC, 50/60 Hz, 1ø, 1.5 kVA (3.5 kVA max)
- 115/230 VAC with optional stepdown transformer PT-400

EQUIPMENT LIST (specify operating frequency)

Standard

- Display Unit CSH-230 for CSH-23, CSH-240 for CSH-24
- Transmitter Unit CSH-310
- Receiver Unit CSH-220A
- Hull Unit (specify when ordering)
CSH-21080 (800 mm travel)
CSH-21120 (1200 mm travel)
CSH-21160 (1600 mm travel)

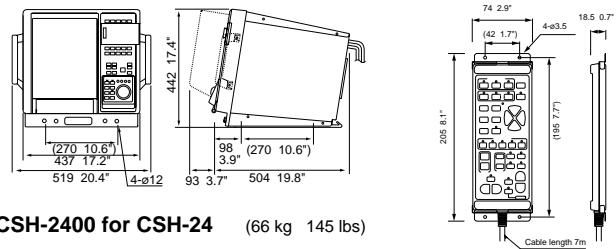
- Remote Controller CSH-116
- Power Supply Unit CSH-380B
- Interface Unit CS-120A
- Installation materials and spare parts
- Hand Grip

Optional

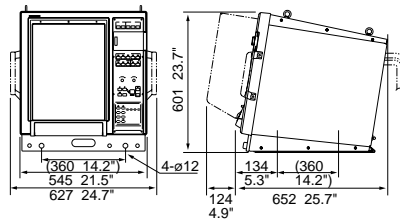
- Stepdown Transformer PT-400
- Net Sonde Interface CS-170
- Echo Sounder Interface VI-1100A
- Sub-Display Unit CSH-236 for CSH-23
- Remote Display Unit CSH-106 for CSH-23
- Gyro Converter AD-100

Display units

CSH-230 for CSH-23 (35 kg 77 lbs) Remote controller CSH-116

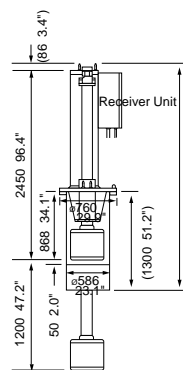


CSH-240 for CSH-24 (66 kg 145 lbs)

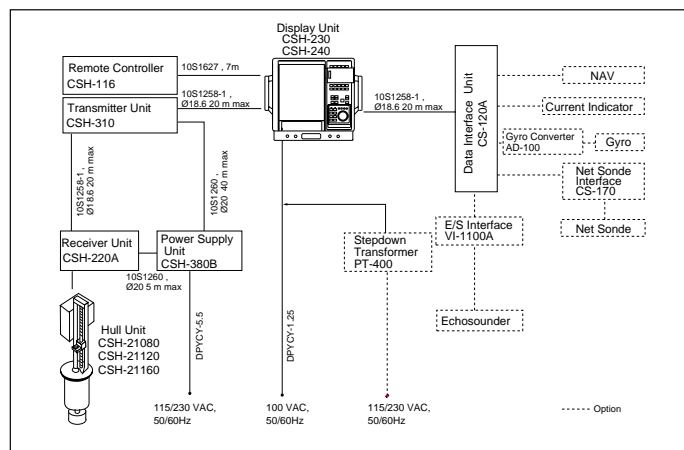
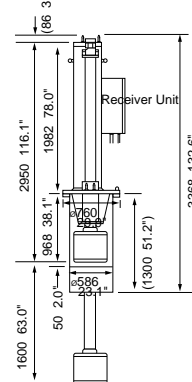


Hull unit

CSH-21120
1200 mm travel
(1090 kg 2403 lbs)



CSH-21160
1600 mm travel
(1120 kg 2469 lbs)



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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