

# FURUNO

## OPERATOR'S MANUAL

5" ECHO SOUNDR

MODEL LS-4100

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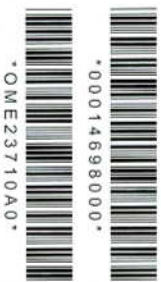
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(HIMA) LS-4100

Your Local Agent/Dealer

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FURUNO ELECTRIC CO., LTD.  
NISHINOMIYA, JAPAN

# TABLE OF CONTENTS

FOREWORD .....	iii	2. SYSTEM & INSTALLATION .....	18
SYSTEM OVERVIEW .....	iv	2.1 System Menu .....	18
1. OPERATION .....	1	3. MAINTENANCE, TROUBLESHOOTING .....	21
1.1 Control Description .....	1	3.1 Maintenance .....	21
1.2 Turning the Power On/Off .....	1	3.2 Cleaning the Display Unit .....	21
1.3 Adjusting Display Contrast, Brilliance .....	2	3.3 Transducer Maintenance .....	21
1.4 Choosing a Display, Frequency .....	2	3.4 Replacing the Fuse .....	21
1.5 Menu Operating Procedure .....	5	3.5 Battery Voltage Alert .....	21
1.6 Automatic Operation .....	5	3.6 Troubleshooting .....	22
1.7 Manual Operation .....	6	3.7 Diagnostics .....	22
1.8 Measuring Depth .....	8	3.8 Test Pattern .....	23
1.9 Choosing Picture Advanced Speed .....	8	3.9 Memory Clear .....	23
1.10 Suppressing Interference .....	9	4. INSTALLATION .....	24
1.11 Suppressing Low Level Noise .....	9	4.1 Display Unit .....	24
1.12 Erasing Weak Echoes .....	10	4.2 Thru-hull Mount Transducer .....	24
1.13 A-scope Display .....	10	4.3 Transom Mount Transducer .....	26
1.14 Alarms .....	11	4.4 Inside-hull Transducer .....	28
1.15 Waypoints .....	12	4.5 Optional Triducer .....	29
1.16 Setting Up Nav Data Displays .....	15	4.6 Optional Water Temperature/Speed Sensor .....	33
1.17 Other Menu Items .....	16	4.7 Wiring .....	34
		4.8 IEC 61162-1 Data Sentences .....	35
		4.9 Installation Menu .....	36
		SPECIFICATIONS .....	SP-1
		OUTLINE DRAWING	
		INTERCONNECTION DIAGRAM	

# SAFETY INSTRUCTIONS

## Safety Instructions for the Operator

### WARNING

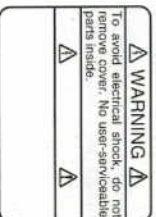
- Do not open the equipment.
- There are no user-serviceable parts inside.
- Do not disassemble or modify the equipment.
- Fire, electrical shock or serious injury can result.
- Immediately turn off the power at the switchboard if the equipment is emitting smoke or fire.
- Continued use of the equipment can cause fire or electrical shock. Contact a FURUNO agent for service.

### CAUTION

- Do not turn on the equipment with the transducer out of water.
- The transducer may be damaged.
- The picture is not refreshed when picture advancement is stopped.
- Maneuvering the vessel in this condition may result in a dangerous situation.
- Use the proper gain setting.
- Incorrect gain may produce wrong depth indication, possibly resulting in a dangerous situation. See "Adjusting the gain" on page 7 for details.

### NOTICE

- Do not maneuver the vessel based on the depth indication alone.
- Grounding may result.
- Use the proper fuse.
- Fuse rating is shown on the equipment. Use of a wrong fuse can result in damage to the equipment.
- The high quality LCD shows 99.99% of its pixels. The remaining .01% may drop out or brighten, due to the property of the LCD, however this is not a sign of malfunction.
- A warning label is attached to the equipment. Do not remove the label. If the label is missing or damaged, contact a FURUNO agent or dealer.



Name:  
Warning Label  
Type: 02-146-1022  
Code No.: 100-306-050

## Safety Instructions for the Installer

### ⚠ WARNING

Turn off the power at the switchboard before beginning the installation.

Fire or electrical shock can result if the power is left on.

Be sure no water leaks in at the transducer or sensor mounting location.

Water leakage can sink the vessel. Also confirm that the transducer and sensor will not loosen by ship's vibration. The installer of the equipment is solely responsible for the proper installation of the equipment. FURUNO will assume no responsibility for any damage associated with improper installation.

### Use the specified power cable.

Use of other power cable may result in fire.

### ⚠ CAUTION

Do not install the equipment where air bubbles and noise are present. Performance will be affected.

The following are guidelines for handling of the transducer cable.

- Do not locate near oils and fuels.
- Locate it in a safe place.
- Do no paint the cable.

The sheath of the cable is made of chloroprene rubber (or polychloride vinyl). For this reason do not paint the cable.

Do not turn on the equipment with the transducer out of water.

The transducer may be damaged.

Observe the following compass safe distances to prevent interference to a magnetic compass:

	Standard compass	Steering compass
Display unit	0.4 m	0.3 m

## FOREWORD

### A Word to LS-4100 Owners

Congratulations on your choice of the FURUNO LS-4100 5" Echo Sounder. We are confident you will see why the FURUNO name has become synonymous with quality and reliability.

For over 50 years FURUNO Electric Company has enjoyed an enviable reputation for innovative and dependable marine electronics equipment. This dedication to excellence is furthered by our extensive global network of agents and dealers.

This equipment is designed and constructed to meet the rigorous demands of the marine environment. However, no machine can perform its intended function unless operated and maintained properly. Please carefully read and follow the recommended procedures for operation and maintenance.

We would appreciate hearing from you, the end-user, about whether we are achieving our purposes.

Thank you for considering and purchasing FURUNO equipment.

### Features

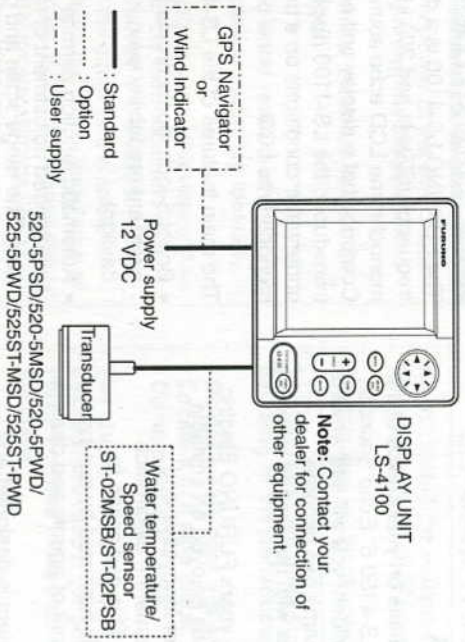
The FURUNO LS-4100 is a dual frequency (50 kHz and 200 kHz) monochrome LCD echo sounder. Composed of a display unit and a transducer, the LS-4100 displays underwater conditions on a bright 5-inch monochrome LCD.

The main features of the LS-4100 are

- Bright 5-inch monochrome LCD gives excellent readability even in broad daylight.
- Automatic function permits unattended adjustment of range and gain. The range scale and gain automatically change to display the bottom in the darkest gray tone on the lower half of the screen.
- User-programmable nav data displays provide analog and digital nav data.
- Alarms: Bottom, Fish (bottom-lock and normal), Speed, Water Temperature and Arrival. (Speed and arrival alarms require appropriate sensor, water temperature alarm requires water temperature data.)
- White line feature helps discriminate fish lying near the bottom.
- Destination waypoint feature provides range, bearing, and time-to-go to destination waypoint. (up to 12 waypoints)
- Waterproof construction permits installation on open bridge.

# SYSTEM OVERVIEW

## System configuration



## Equipment lists

### Standard supply

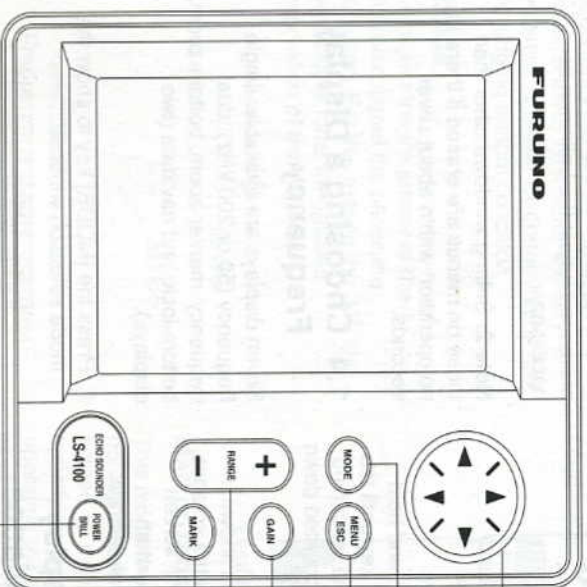
Name	Type	Code No.	Qty	Remarks
Display Unit	LS-4100	—	1	
Transducer	520-5P/SD	000-015-204	1	Thru-hull mount
	520-5M/SD	000-015-212		Thru-hull mount
	520-5P/WD	000-015-126		Transom mount
	525-5P/WD	000-146-966		Transom mount
	525ST-M/SD	000-015-263		Thru-hull mount
Transducer (transducer plus spd/temp sensor)	525ST-P/WD	000-015-281		Transom mount
Installation Materials (CP02-07401)	<ul style="list-style-type: none"> <li>• Tapping screw (4 pcs., 5 x 20 SUS304, 000-802-081)</li> <li>• Washer head screw B (4 pcs., M4 x 20 SUS304, 000-804-742)</li> <li>• Cable Assy. (1 pc., MJ-A7SPF0005-020, 000-139-384, for power and data)</li> </ul>			
	Fuse (2 pc., FGM B 1A 125V, Code No. 000-114-805)			
Spare Parts (SP02-04801)	C22-00301 (000-146-981, for flush mount), C22-00302 (000-146-982, for bulkhead)			
Template				

### Optional equipment

Name	Type	Code No.	Qty	Remarks
Conversion Cable	02S4147	000-141-082	1	For spd/temp sensor
Water Temperature & Speed Sensor	ST-02M/SB	000-137-986	Select one	Thru-hull type
	ST-02P/SB	000-137-987	one	
Inner Hull Kit S	22S0191	000-802-598	1	

# 1. OPERATION

## 1.1 Control Description



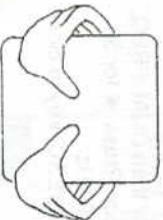
- Cursor Pad  
Selects menu items; shifts VRM.
- Selects display mode.
- Opens/closes menu; escapes from current operation.
- Adjusts gain.
- Selects basic display range. Outputs L/L position to external equipment; registers selected position as waypoint.

- Long press: Turns power on/off.
- Momentary press: Adjusts display contrast and brilliance.

Display unit

### How to remove the hard cover

Place your thumbs at the center of the cover, and then lift the cover while pressing it with your thumbs.



### 1.2 Power On/Off

Press the [POWER/BRILL] key more than one second to turn on the power. The unit beeps, the startup screen appears, and then the equipment checks the ROM and RAM for proper operation and displays program number. (If "NG" (No Good) appears, try to press any key except the [POWER/BRILL] key to start operation. However, the equipment may not work properly. Contact your dealer.) You may press any key after the completion of the equipment check to start operation sooner.



\*\* Program version no.

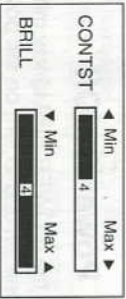
#### Start-up screen

To turn off the power, press and hold down the [POWER/BRILL] key until the screen goes blank. The time remaining until power is turned off is counted down on the screen.

**Note:** The example screens shown in this manual may not match the screens you see on your display. The screen you see depends on your system configuration and equipment settings.

### 1.3 Adjusting Display Contrast, Brilliance

1. Press the [POWER/BRILL] key momentarily to show the brilliance/contrast adjustment window.



#### Brilliance/contrast adjustment window

2. For contrast, press the [POWER/BRILL] key to adjust contrast cyclically. (You may also use ◀ or ▶ on the Cursor Pad to adjust contrast.) (Adjustable range: 0 to 9)
3. To adjust brilliance, use ▲ or ▼. (Adjustable range: 0 to 4)
4. Press the [MENU/ESC] key to close the brilliance/contrast adjustment window.

**Note 1:** When the power is reapplied after turning off the equipment with minimum brilliance, minimum brilliance will be set after the equipment goes through its initial start up. (The start up screen appears with the maximum brilliance.) Adjust the brilliance as necessary.

**Note 2:** Setting windows other than those on menus are erased if there is no operation within about seven seconds.

### 1.4 Choosing a Display, Frequency

Seven displays are available: single frequency (50 or 200 kHz), dual frequency, marker-zoom, bottom-zoom, bottom-lock, and nav data (two displays).

1. Press the [MODE] key to show the mode selection window.



#### Mode selection window

2. Press the [MODE] key again within seven seconds to choose a mode. You may also choose a mode with ▲ or ▼.
3. For modes other than DUAL FREQ., choose frequency. Press ◀ for 50 kHz or ▶ for 200 kHz.
4. Press the [MENU/ESC] key to close the window.

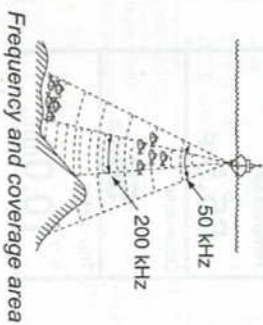
#### Single frequency display

##### 50 KHZ

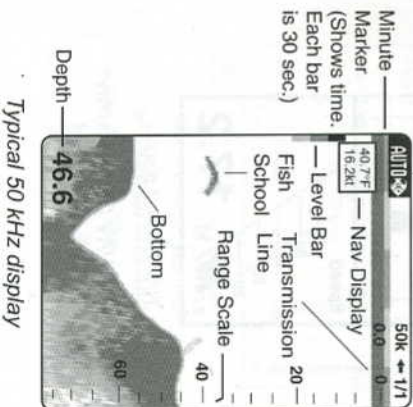
The sounder uses ultrasonic signals to detect bottom conditions. The lower the frequency of the signal, the wider the detection area. Therefore, the 50 KHZ frequency is useful for general detection and judging bottom condition.

##### 200 KHZ

The higher the frequency of the ultrasonic signal the better the resolution. For this reason the 200 KHZ frequency is ideal for detailed observation of fish schools.

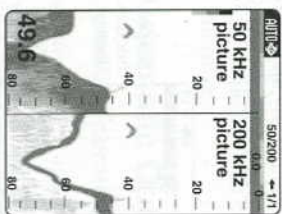


Picture Advance Speed  
(AUTO or MANUAL)  
Mode  
Frequency



#### Dual frequency display

The 50 KHZ picture appears on the left; the 200 KHZ picture on the right. This display is useful for comparing the same picture with two different transmitting frequencies.



Dual frequency display

#### Marker-zoom display

This mode expands chosen area of the normal picture to full vertical size of the screen on the left-half window. You may specify the portion to expand by operating the VRM (Variable Range Marker), which you can shift with ▲ or ▼. The area between the VRM and zoom range marker is expanded.

