



GARMIN ECHOMAP ULTRA 2 Chartplotters Installation Guide

[Home](#) » [Garmin](#) » GARMIN ECHOMAP ULTRA 2 Chartplotters Installation Guide 

GARMIN®

ECHOMAP™ ULTRA 2
INSTALLATION INSTRUCTIONS



Contents

- 1 Important Safety Information
- 2 Mounting Considerations
- 3 Bail Mounting the Device
- 4 Flush Mounting the Device
- 5 Connection Considerations
- 6 Connecting the Device to a Transducer
- 7 NMEA 2000 Considerations
- 8 Installing Locking Rings on the Cables
- 9 Installing the Device in the Cradle
- 10 Specifications
- 11 Documents / Resources

Important Safety Information



WARNING

See the Important Safety and Product Information guide in the product box for product warnings and other important information.

When connecting the power cable, do not remove the in-line fuse holder. To prevent the possibility of injury or product damage caused by fire or overheating, the appropriate fuse must be in place as indicated in the product specifications. Connecting the power cable without the appropriate fuse in place voids the product warranty.

Failure to install this device according to these instructions could result in personal injury, damage to the vessel or device, or poor product performance.



CAUTION

To avoid possible personal injury, always wear safety goggles, ear protection, and a dust mask when drilling, cutting, or sanding.

To avoid possible personal injury or damage to the device and vessel, disconnect the vessel's power supply before beginning to install the device.

To avoid possible personal injury or damage to the device or vessel, before applying power to the device, make sure that it has been properly grounded, following the instructions in the guide.

To avoid possible personal injury or damage to this device and vessel, only install this device when the vessel is on land, or when properly secured and docked in calm water conditions.

NOTICE

When drilling or cutting, always check what is on the opposite side of the surface to avoid damaging the vessel.

Read all installation instructions before proceeding with the installation. If you experience difficulty during the installation, contact Garmin® Product Support.

Tools Needed

- Drill
- Drill bits
 - Bail mount: drill bits and screws appropriate for the surface and hardware
 - Flush mount: 3.2 mm (1/8 in.) and 9.5 mm (3/8 in.) drill bits
- #2 Phillips screwdriver
- Jigsaw or rotary tool
- File and sandpaper
- Marine sealant (optional)

Mounting Considerations

You can flush mount the device in the dashboard or bail mount the device on the dashboard. When selecting a mounting location, observe these considerations.

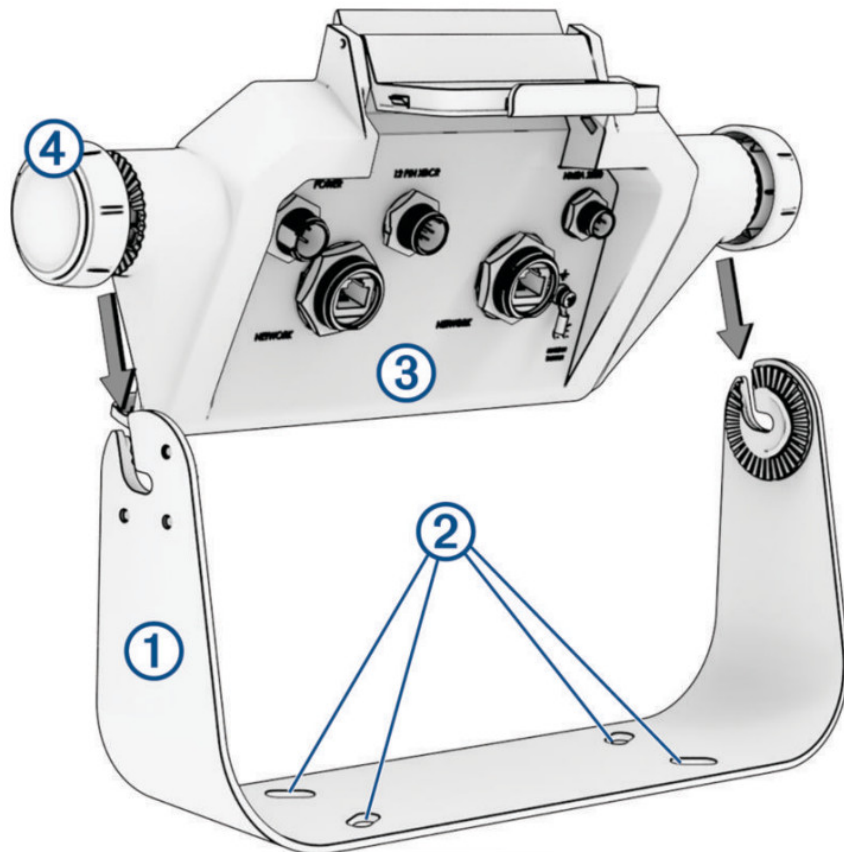
- The mounting location must provide a clear view of the screen and access to the keys on the device.
- The mounting location must be sturdy enough to support the device and the mount.
- The cables must be long enough to connect the components to each other and to power.
- To avoid interference with a magnetic compass, do not install the device closer to a compass than the compass-safe distance value listed in the product specifications.

Bail Mounting the Device

NOTICE

If you are mounting the bracket on fiberglass with screws, it is recommended to use a countersink bit to drill a clearance counterbore through only the top gel-coat layer. This will help to avoid cracking in the gel-coat layer when the screws are tightened.

1. Select the mounting hardware appropriate for your mounting surface and for the bail-mount bracket.
2. Using the bail-mount bracket as a template, mark the pilot holes².



3. Using a drill bit appropriate for the mounting hardware, drill the four pilot holes.
4. Using the selected mounting hardware, secure the bail-mount bracket to the mounting surface.
5. Place the cradle **3** into the bail-mount bracket, and tighten the bail-mount knobs **4**.
6. Connect all necessary cables to the cradle (Connector View, page 4), and spin the locking rings clockwise to lock the cables to the cradle.

NOTICE

To prevent corrosion of the metal contacts, cover unused connectors with the attached weather caps.

Flush Mounting the Device

NOTICE

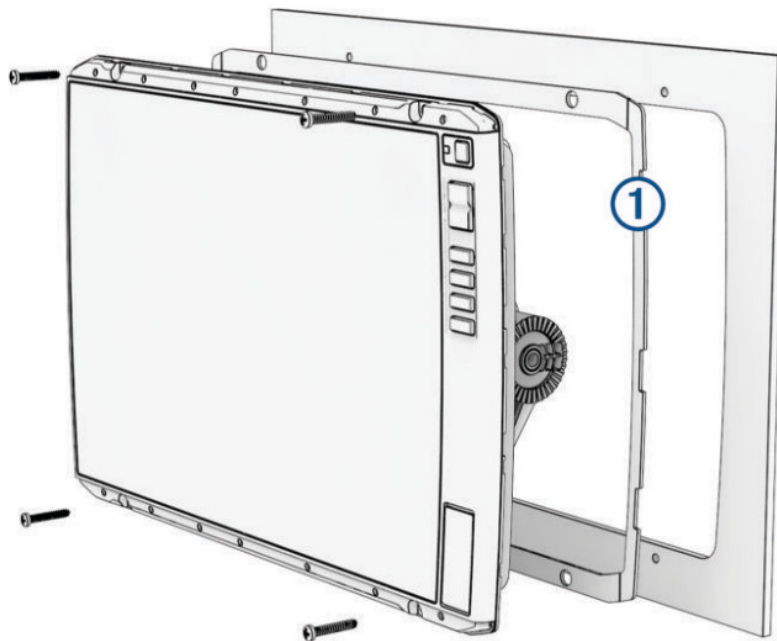
Be careful when cutting the hole to flush mount the device. There is only a small amount of clearance between the case and the mounting holes, and cutting the hole too large could compromise the stability of the device after it is mounted.

Using a metal pry tool such as a screwdriver can damage the trim caps and the device. Use a plastic pry tool when possible.

You can mount the device in your dashboard using the flush-mount template and appropriate hardware.

1. Secure the template to the mounting location.
2. Using a 13 mm (1/2 in.) drill bit, drill one or more of the holes inside the corners of the solid line on the template to prepare the mounting surface for cutting. 1 3 Using a jigsaw or rotary cutting tool, cut the mounting surface along the inside of the solid line indicated on the template.
3. Place the device into the cutout to test the fit.
4. Use a pry tool, such as a flat piece of plastic or a screwdriver, to carefully pry up the corners of the trim caps, and remove the trim caps.
5. Place the device in the cutout, and ensure the mounting holes on the device line up with the pilot holes on the template.
6. If the mounting holes on the device do not line up with the pilot holes on the template, mark the new hole locations.
7. Using a 3.2 mm (1/8 in.) drill bit, drill the pilot holes.
8. Remove the template from the mounting surface.
9. Place the device in the cradle (Installing the Device in the Cradle, page 8).
10. Install the rubber gasket **1** on the back of the device.

The rubber gasket has adhesive on the back. Make sure you remove the protective liner before installing it on the device.



11. Connect all necessary cables (Connector View, page 4), and spin the locking rings clockwise to secure the cables to the cradle before placing it into the cutout.

NOTICE

To prevent corrosion of the metal contacts, cover unused connectors with weather caps.

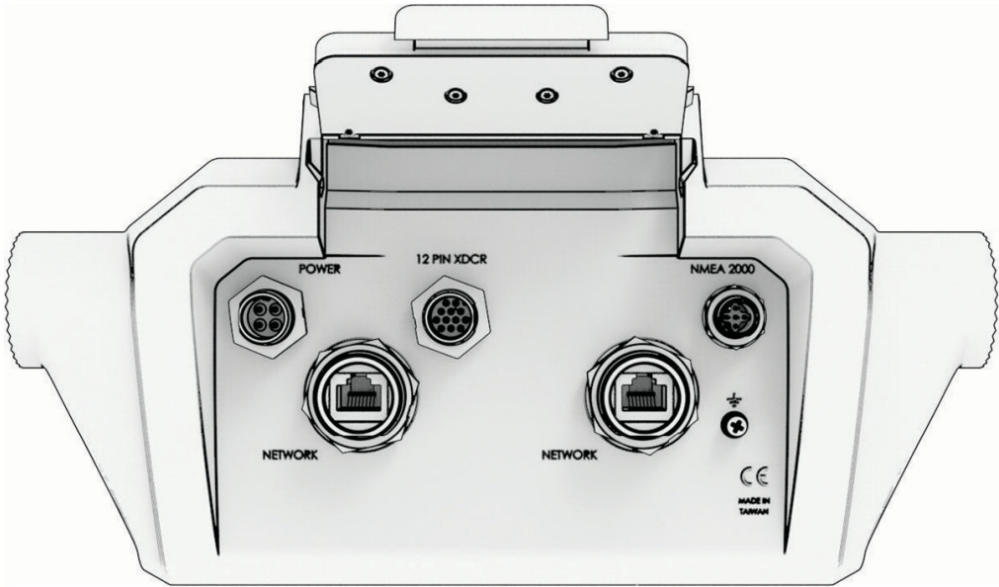
12. Place the device into the cutout.


13. Secure the device to the mounting surface using the included screws.
14. Install the trim caps by snapping them in place around the edges of the device.

Connection Considerations

After connecting the cables to the cradle, tighten the locking rings to secure each cable.

Connector View



Label	Description
POWER	Power cable port
12 PIN XDCR	12-pin transducer
NMEA 2000	NMEA 2000® network
NETWORK	Garmin Marine Network cable port for connection to compatible Panoptix™ , GC V™ , and ECHOMAP devices NOTE: This device is not compatible with some Garmin Marine Network devices such as GPSMAP® , GSD ™ , and radar devices.
	Ground screw

NOTICE

To prevent corrosion of the metal contacts, cover unused connectors with weather caps.
For best performance and to prevent corrosion, insert the cable connector fully into the port and turn the locking ring clockwise to tighten it. If the split-collar locking ring is not installed, you must install it.

Connecting to Power

WARNING

When connecting the power cable, do not remove the in-line fuse holder. To prevent the possibility of injury or product damage caused by fire or overheating, the appropriate fuse must be in place as indicated in the product specifications. Connecting the power cable without the appropriate fuse in place voids the product warranty.
You should connect the red wire to the power source through the ignition or another manual switch to turn the device on and off.

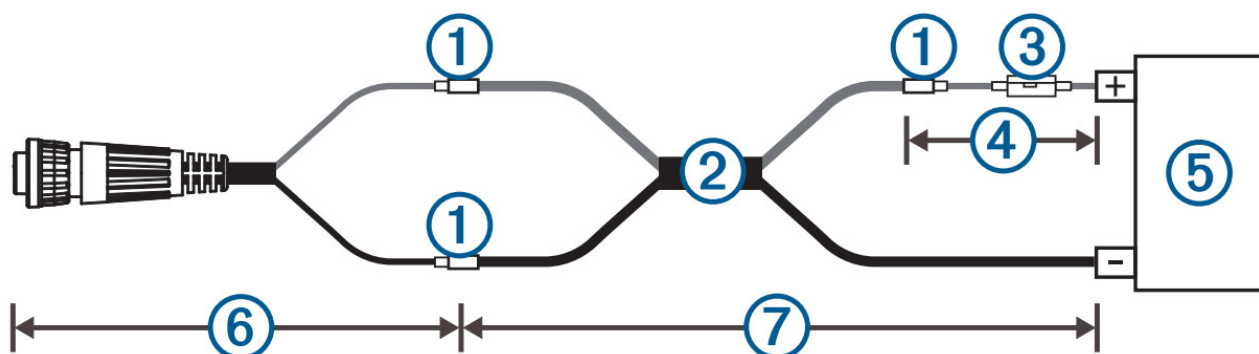
The brown and blue wires on the power cable are not used by this device and should not be connected. You can cut and tape the ends of these wires for a clean install, if preferred.

1. Route the power cable between the power source and the device.
2. Connect the red power wire to the ignition or another manual switch, and connect the switch to the positive (+) battery terminal, if necessary.
3. Connect the black wire to the negative (-) battery terminal or to ground.
4. Connect the power cable to the device, and turn the locking ring clockwise to tighten it.

Power Cable Extensions

If necessary, the power cable can be extended using the appropriate wire gauge for the length of the extension.

NOTE: The power wires on this cable are red (+) and black (-). The brown and blue wires are not used by this device and should not be connected. You can cut and tape the ends of these wires for a clean install, if preferred.



1	Splice
2	<ul style="list-style-type: none"> • Up to 3 m (10 ft.): 16 AWG (1.5 mm) extension wire • Up to 6.1 m (20 ft.): 14 AWG (2.5 mm 2 2) extension wire
3	Fuse (8 A)
4	23 cm (9 in.)
5	Battery
6	1.8 m (6 ft.)
7	6 m (20 ft.) maximum extension

Connecting the Device to a Transducer

Go to garmin.com/transducers or contact your local Garmin dealer to determine the appropriate type of transducer for your needs.

NOTE: If you use an existing transducer and the transducer cable pin connector does not match the device port, you may be able to use a transducer cable adapter to connect your existing transducer to this device. Go to garmin.com for more information about transducer accessories.

1. Follow the instructions provided with your transducer to correctly install it on your boat.
2. Route the transducer cable to the back of your device, away from sources of electrical interference.
3. Connect the transducer cable to the appropriate port on the cradle.

If the device behaves erratically, the cable connector may not be fully seated. Disconnect the cable connector from the port, check the pin alignment, and firmly push the connector into the port.

NMEA 2000 Considerations

NOTICE

If you are connecting to an existing NMEA 2000 network, identify the NMEA 2000 power cable. Only one NMEA 2000 power cable is required for the NMEA 2000 network to operate properly.

A NMEA 2000 Power Isolator (010-11580-00) should be used in installations where the existing NMEA 2000 network manufacturer is unknown.

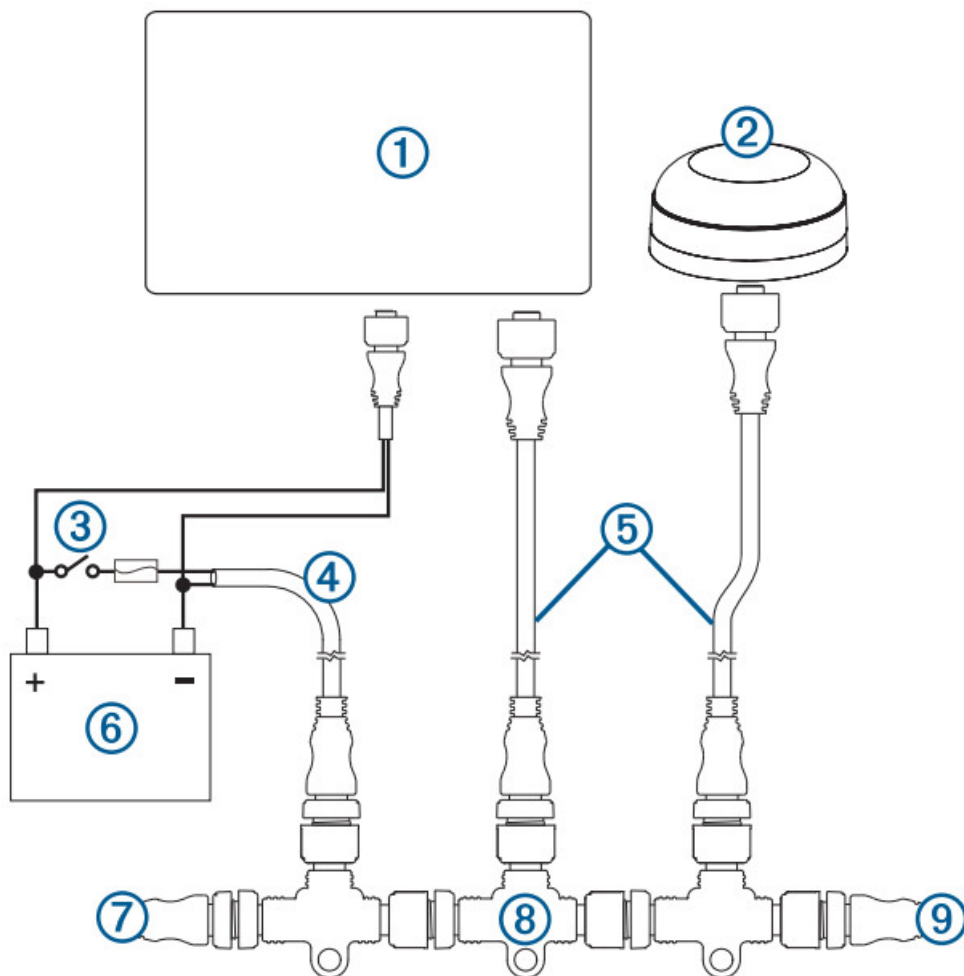
If you are installing a NMEA 2000 power cable, you must connect it to the boat ignition switch or through another in-line switch. NMEA 2000 devices will drain your battery if the NMEA 2000 power cable is connected to the battery directly.

You can connect your device to a NMEA 2000 network on your boat to share data from NMEA 2000 compatible devices such as a GPS antenna or a VHF radio. The necessary NMEA 2000 cables and connectors are sold separately.

This device is not powered through the NMEA 2000 network. You must connect the device to a power source (Connecting to Power, page 4).

If you are unfamiliar with NMEA 2000, you should read the Technical Reference for NMEA 2000 Products at garmin.com/manuals/nmea_2000.

The port labeled NMEA 2000 on the cradle is used to connect it to a standard NMEA 2000 network

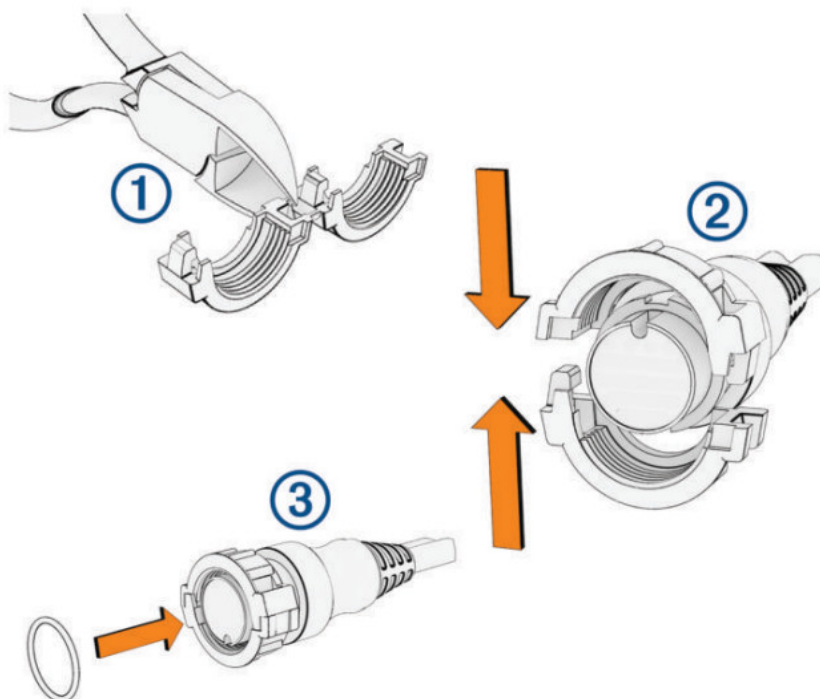


Item	Description
1	ECHOMAP Ultra 2 device
2	GPS antenna or other NMEA 2000 device
3	Ignition or in-line switch
4	NMEA 2000 power cable
5	NMEA 2000 drop cable
6	12 Vdc power source
7	NMEA 2000 female terminator or backbone extension cable
8	NMEA 2000 T-connector
9	NMEA 2000 male terminator or backbone extension cable

Installing Locking Rings on the Cables

To help make the cable-routing process easier, some locking rings are packaged separately from the cables. When installing a cable that does not have a locking ring installed at the factory, you must install the split-collar locking ring on the cable to ensure a tight connection.

1. Separate the two halves of the locking ring **1**.

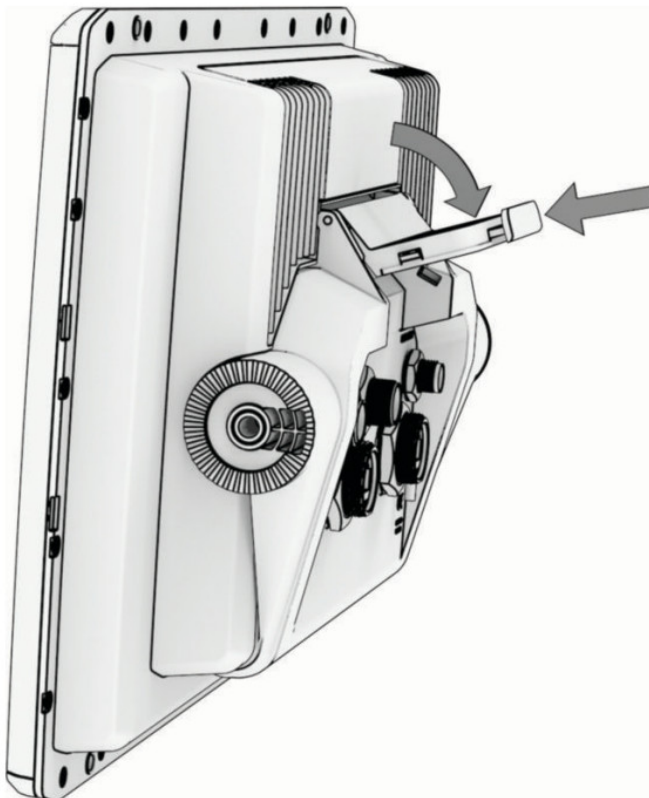


2. Align the two halves **2** of the locking ring over the cable and snap them together.
3. Insert the O-ring into **3** the end of the connector.
4. After connecting the cable to the port, turn the locking ring clockwise to tighten it.

Installing the Device in the Cradle

After the cables are connected to the cradle, you can quickly place the device in the cradle.

1. Press the button on the release lever and lift the lever to unlock it.
2. Place the base of the device in the bottom of the cradle.
3. Lift the lever.
4. Tilt the top of the device toward the cradle.



5. Press the button on the lever, and push the lever down until the device clicks in place.

Removing the Device from the Cradle

1. Press the button on the release lever on the cradle, and pull the lever up.
2. Tilt the device forward, and lift the device out of the cradle.

Specifications

All Models

Material	Polycarbonate plastic
Water rating	IEC 60529 IPX7 ¹
Temperature range	From -15° to 55°C (from 5° to 131°F)
Clearance to nearest obstruction behind chartplotter	150 mm (5 7/8 in.)
Input voltage	From 9 to 18 Vdc
Fuse	8 A, fast-blow (included)
Display resolution (W x H)	1280 x 800 pixels
Display type	WXGA
Memory card	2 microSD® card slots; 32 GB max. card size
Wireless frequency	2.4 GHz @ 16.6 dBm maximum
Sonar frequencies ²	Traditional L, M, H CHIRP: 50/77/83/200 kHz Garmin ClearVü CHIRP: 260/455/800/1000/1200 kHz Garmin SideVü™ CHIRP: 260/455/800/1000/1200 kHz
Sonar transmit power (RMS) ³	CHIRP: 600 W Garmin ClearVü and Garmin SideVü CHIRP: 600 W
Sonar depth ⁴	701 m (2,300 ft.) at 77 kHz
100 Series Models	
Dimensions, device only (W x H x D)	294 x 191 x 80 mm (11 5/16 x 7 1/2 x 3/16 in.)
Dimensions, in bail mount with sun cover (W x H x D)	314 x 211 x 114 mm (12 3/8 x 8 1/16 x 4 1/2 in.)
Display size (W x H)	218 x 137 mm (8 9/16 x 5 3/16 x 5/8 in.) 257 mm (10 in.) diagonal
Weight	1.75 kg (3 lb. 14 oz.)
Max. power draw	34 W
Typical current draw at 12 Vdc (RMS)	2.3 A
Max. current draw at 12 Vdc (peak)	5 A
Compass-safe distance	10 cm (3.9 in.)

1. The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to www.garmin.com/waterrating.
2. Dependent upon the transducer.
3. Dependent upon the transducer rating and depth.
4. Dependent upon the transducer, water salinity, bottom type, and other water conditions.

120 Series Models

Dimensions, device only (W x H x D)	341 x 202 x 80 mm (13 7 15 /16 x 7 3 /16 x 3 /16 in.)
Dimensions, in bail mount with sun cover (W x H x D)	352 x 235 x 114 mm (13 7 1 1 /8 x 9 /4 x 4 /2 in.)
Display size (W x H)	262 x 164 mm (10 5 15 /16 x 6 /32 in.) 309 mm (12 in.) diagonal
Weight	2.46 kg (5 lb. 7 oz.)
Max. power draw	36 W
Typical current draw at 12 Vdc (RMS)	2.5 A
Max. current draw at 12 Vdc (peak)	5 A
Compass-safe distance	9 cm (3.5 in.)

NMEA 2000 PGN Information Transmit and Receive

PGN	Description
59392	ISO acknowledgment
59904	ISO request
60160	ISO transport protocol, data transfer
60416	ISO transport protocol, connection management – RTS group function
60928	ISO address claim
126208	NMEA ® : Command, request, and acknowledge group function
126993	Heartbeat
126996	Product information
126998	Configuration information
127250	Vessel heading
128259	Speed: Water referenced
128267	Water depth
129539	GNSS DOPs
129540	GNSS satellites in view
129799	Radio frequency, mode, and power
130060	Label
130306	Wind data
130310	Environmental parameters
130312	Temperature

Transmit

PGN	Description
126464	Transmit and receive PGN list group function
126984	Alert response
127258	Magnetic variance
127502	Switch bank control
129025	Position: Rapid update
129026	COG and SOG: Rapid update
129029	GNSS position data
129283	Cross track error
129284	Navigation data
129285	Navigation route and waypoint info

Receive

PGN	Description
65240	ISO commanded address
126983	Alert
126985	Alert text
126987	Alert threshold
126988	Alert value
126992	System time
127237	Heading/tack control
127245	Rudder
127250	Vessel heading
127251	Rate of turn
127252	Heave
127257	Attitude
127488	Engine parameters: Rapid update
127489	Engine parameters: Dynamic
127493	Transmission parameters: Dynamic
127498	Engine parameters: Static
127501	Switch bank status

127503	AC input status
127504	AC output status
127505	Fluid level
127506	DC detailed status
127507	Charger status
127508	Battery status
127509	Inverter status
128000	Nautical leeway angle
128275	Distance log
128780	Linear actuator control and status
129025	Position, rapid update
129026	COG and SOG, rapid update
129029	GNSS position data
129038	AIS class A position report
129039	AIS class B position report
129040	AIS class B extended position report
129041	AIS Aids to Navigation (AtoN) report
129283	Cross track error
129284	Navigation data
129285	Navigation: Route and waypoint information
129794	AIS class A static and voyage related data
129798	AIS SAR aircraft position report
129799	Radio frequency, mode, and power
129802	AIS safety-related broadcast message
129808	DSC call information
129809	AIS static data report, part A
129810	AIS static data report, part B
130067	Route and waypoint service: Route and waypoint name and position
130310	Environmental parameters
130311	Environmental parameters (obsolete)
130313	Humidity
130314	Actual pressure
130316	Temperature: extended range

130576	Trim tab status
130578	Vessel speed components

© 2023 Garmin Ltd. or its subsidiaries
Garmin® and the Garmin logo are trademarks of Garmin Ltd. or its subsidiaries, registered in the USA and other countries. ECHOMAP™ is a trademark of Garmin Ltd. or its subsidiaries. These trademarks may not be used without the express permission of Garmin.
NMEA® , NMEA 2000® , and the NMEA® logo are registered trademarks of the National Marine Electronics Association. microSD® and the microSD logo are trademarks of SD-3C, LLC.
M/N: A04797 / B04797
IC: 1792A-04797



© 2023 Garmin Ltd. or its subsidiaries
support.garmin.com



Documents / Resources

	<p>GARMIN ECHOMAP ULTRA 2 Chartplotters [pdf] Installation Guide ECHOMAP ULTRA 2, ECHOMAP ULTRA 2 Chartplotters, Chartplotters</p>
--	--