GARMIN®

TD 50

INSTALLATION INSTRUCTIONS

Important Safety Information

⚠ WARNING

Failure to follow these warnings, cautions, and notices could result in personal injury, damage to the vessel or device, or poor product performance.

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

⚠ 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.

NOTICE

For the best possible performance, the device must be installed according to these instructions.

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

Tools Needed

- Drill and drill bits
  - Preparing the surface for cutting:
    9 mm ($^{3}/_{8}$ in.) bit
  - Installs using wood screws:
    2.5 mm ($^{3}/_{32}$ in.) bit
  - Installs using the nut plate:
    3.5 mm ($^{9}/_{64}$ in.) bit
    4 mm ($^{5}/_{32}$ in.) bit
- #2 Phillips screwdriver
- Jigsaw or rotary tool
- File and sandpaper
- Marine sealant (recommended)

Mounting Considerations

NOTICE

This device should be mounted in a location that is not exposed to extreme temperatures or conditions. The temperature range for this device is listed in the product specifications. Extended exposure to temperatures exceeding the specified temperature range, in storage or operating conditions, may cause device failure. Extreme-temperature-induced damage and related consequences are not covered by the warranty.

The mounting surface must be flat to avoid damaging the device when it is mounted.

When selecting a mounting location, observe these considerations.

- The mounting location should be at or below eye level to provide optimal viewing as you operate your vessel.
- The mounting surface must be strong enough to support the weight of the device and protect it from excessive vibration or shock.
- To avoid interference with a magnetic compass, the device should not be installed closer to a compass than the compass-safe distance value listed in the product specifications.
- The area behind the mounting surface must allow room for the routing and connection of the cables.

The included template and hardware can be used to flush mount the device in your dashboard. There are two options for hardware based on the mounting surface material.

- You can drill pilot holes and use the included wood screws.
- You can drill holes and use the included nut plates and machine screws. The nut plates can add stability to a thinner surface.

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.

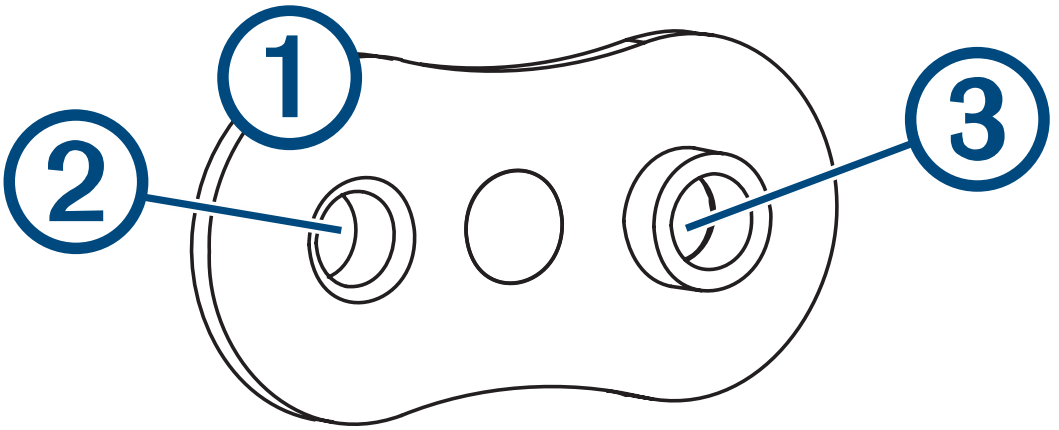
To avoid potential damage to the device, use only the included screws to mount it. Using screws other than the ones included will void your warranty.

The included template and hardware can be used to flush mount the device in your dashboard. There are two options for hardware based on the mounting surface material.

- You can drill pilot holes and use the included wood screws.
- You can drill holes and use the included nut plates and machine screws. The nut plates can add stability to a thinner surface.

1. Trim the template and make sure it fits in the location where you want to mount the device.
2. Secure the template to the selected location.
3. Using a 9 mm ($^{3}/_{8}$ 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.
4. Using a jigsaw or rotary tool, cut the mounting surface along the **inside** of the solid line indicated on the template.
5. Place the device in the cutout to test the fit.
6. If necessary, use a file and sandpaper to refine the size of the cutout.
7. After the device fits correctly in the cutout, ensure the mounting holes on the device line up with the holes on the template.
8. If the mounting holes on the device do not line up, mark the new hole locations.
9. Based on your mounting method, drill the outer holes on the template:
   - Drill 2.5 mm ($^{3}/_{32}$ in.) pilot holes for the included wood screws, and skip to step 18.
   - Drill 3.5 mm ($^{9}/_{64}$ in.) holes for the included nut plate and machine screws.

10 If using the nut plates, starting in one corner of the template, place a nut plate ① over the hole ② drilled in the previous step.



The other hole ③ on the nut plate should line up with the inner 4 mm ($^5/_{32}$ in.) hole on the template.

11 If the 4 mm ($^5/_{32}$ in.) hole on the nut plate does not line up with the inner hole on the template, mark the new location.

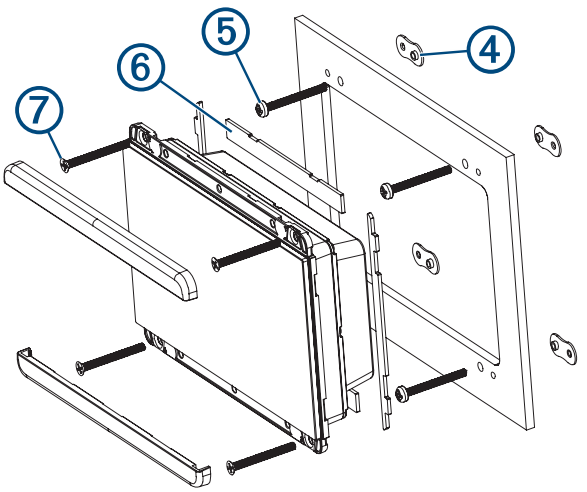
12 Repeat steps 10 and 11 for each nut plate.

13 Using a 4 mm ($^5/_{32}$ in.) drill bit, drill the inner holes.

14 Remove the template from the mounting surface.

15 Starting in one corner of the mounting location, place a nut plate ④ on the back of the mounting surface, lining up the inner and outer holes.

The raised portion of the nut plate should fit into the inner hole.



16 Secure the nut plate to the mounting surface by fastening an included M3 pan-head screw ⑤ through the inner 4 mm ($^5/_{32}$ in.) hole.

17 Repeat steps 15 and 16 for each of the nut plates along the top and bottom of the device.

18 Install the gasket pieces ⑥ on the back of the device.

The pieces of the rubber gasket have adhesive on the back. Make sure you remove the protective liner before installing them on the device.

19 If you will not have access to the back of the device after you mount it, connect all necessary cables to the device before placing it into the cutout.

20 Place the device into the cutout.

21 Secure the device to the mounting surface using the included M3 flat-head screws or wood screws ⑦, depending on the mounting method.

22 Snap the trim caps into place over the screws.

Connection Considerations

This device connects to power and to some data sources through a NMEA 2000® network.

You must connect this device to Garmin® Marine Network devices using a nine-pin Garmin Marine Network cable (sold separately). You must use an adapter to connect to Garmin network devices that have a larger connector (sold separately).

NOTE: This device must be connected to the Garmin Marine Network with one or more compatible Garmin chartplotters also connected. This device will not function as a stand-alone device.

NMEA 2000 Connection Considerations

NOTICE

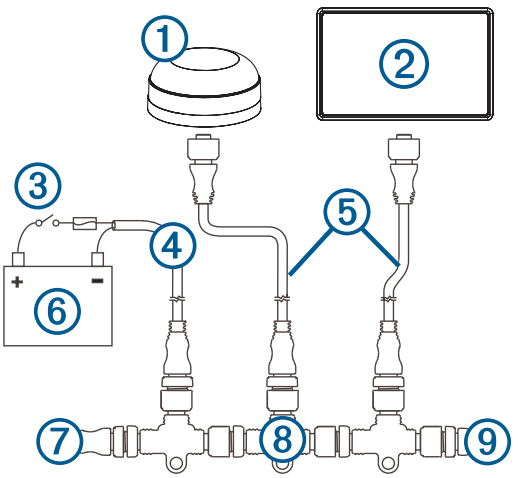
If you are connecting to an **existing** NMEA 2000 network, identify the NMEA 2000 power cable. Only one NMEA 2000 power cable is required for the NMEA 2000 network to operate properly.

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.

The marine instrument connects to a NMEA 2000 network on your boat. The NMEA 2000 network provides power to the marine instrument and data from NMEA 2000 devices such as a wind sensor. The included NMEA 2000 cables and connectors allow you to either connect the device to your existing NMEA 2000 network or create a basic NMEA 2000 network if needed.

If you are unfamiliar with NMEA 2000, you should read the “NMEA 2000 Network Fundamentals” chapter of the *Technical Reference for NMEA 2000 Products*. To download the reference, go to dealers.garmin.com.



①	NMEA 2000 antenna
②	Marine instrument
③	Ignition or in-line switch
④	NMEA 2000 power cable
⑤	NMEA 2000 drop cable
⑥	12 Vdc power source
⑦	NMEA 2000 terminator or backbone cable
⑧	NMEA 2000 T-connector
⑨	NMEA 2000 terminator or backbone cable

Specifications

Dimensions without sun cover (H × W × D)	105 x 140 x 51 mm (4.13 x 5.51 x 2.01 in.)
Dimensions with sun cover (H × W × D)	113 x 144 x 56 mm (4.45 x 5.67 x 2.20 in.)
Weight without sun cover	328 g (11.57 oz.)
Weight with sun cover	375 g (13.23 oz.)
Temperature range	From 5° to 131°F (from -15° to 55°C)
Compass-safe distance	20 cm (7.87 in.)
Case material	Fully-gasketed polycarbonate
Lens material	Glass with an anti-glare and anti-fingerprint finish
Water rating	IEC 60529 IPX7[1]
Brightness	1200 cd/m^2 (NIT)
Power usage	5.85 W max
NMEA 2000 input voltage	9 to 16 Vdc
NMEA 2000 LEN @ 9 Vdc	13 (650 mA)

[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.

NMEA 2000 PGN Information

Transmit and Receive

PGN	Description
059392	ISO acknowledgment
059904	ISO request
060928	ISO address claim
61184	Product information
126208	NMEA®: Command, request, and acknowledge group function
126996	Product information

Transmit

PGN	Description
126464	Transmit PGN list group function

Receive

PGN	Description
126992	System time
127245	Rudder
127250	Vessel heading
127488	Engine parameters: Rapid update
127489	Engine parameters: Dynamic
127508	Battery status
128259	Speed: Water referenced
128267	Water depth
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
129539	GNSS dilution of precision (DOP)
130306	Wind data
130310	Environmental parameters
130311	Environmental parameters
130312	Temperature

PGN	Description
130313	Humidity
130314	Actual pressure