GARMIN

TD 50
INSTALLATION INSTRUCTIONS

Important Safety Information

⚠ WARNING

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

⚠ CAUTION

Always wear safety goggles, ear protection, and a dust mask when drilling, cutting, or sanding.

NOTICE

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

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.

Using the included hardware and template, you can flush mount the device in the dashboard. If you want to mount the device using an alternative method where it appears flat with the front of the dashboard, you must purchase a flat-mount kit (professional installation recommended) from your Garmin® dealer.

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.

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 powder coating, use only the included screws to mount the device. 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 three 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.
- You can punch holes, tap them to M3, and use the included machine screws.

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 3.6 mm ($^{9}/_{64}$ 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 larger 7.2 mm ($^{9}/_{32}$ in.) 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 surface, drill or punch and tap the larger holes:
   - Drill 3.2 mm ($^{1}/_{8}$ in.) pilot holes for the included wood screws, and skip to step 18.
   - Drill 7.2 mm ($^{9}/_{32}$ in.) holes for the included nut plate and machine screws.
   - Punch and tap M4 holes for the included machine screws, and skip to step 18.
10. If using the nut plates, starting in one corner of the template, place a nut plate ① over the larger hole ② drilled in step 9.

    The smaller hole ③ on the nut plate should line up with the smaller hole on the template.
11. If the smaller 3.6 mm ($^{9}/_{64}$ in.) hole on the nut plate does not line up with the smaller hole on the template, mark the new location.
12. Repeat steps 10 and 11 for each nut plate.
13. Using a 3.6 mm ($^{9}/_{64}$ in.) drill bit, drill the smaller 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 large and small holes.

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

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16 Secure the nut plate to the mounting surface by fastening an included M3 screw ⑤ through the smaller 3.6 mm ($^{9}/_{64}$ in.) hole.

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

18 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.

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

19 Place the device into the cutout.

20 Secure the device to the mounting surface using the included M3 screws ⑥ or wood screws, depending on the mounting method.

21 Snap the trim caps into place.

Connection Considerations

The marine instrument connects to power and to data sources through a NMEA 2000® network.

Although the instrument cannot directly receive NMEA® 0183 data, it can display NMEA 0183 data from sources connected to a GNX™ 20 or GNX 21 device (sold separately) on the same NMEA 2000 network.

The instrument can also receive data from Nexus® instruments and sensors using a device (sold separately).

NMEA 2000 Connection Considerations

NOTICE

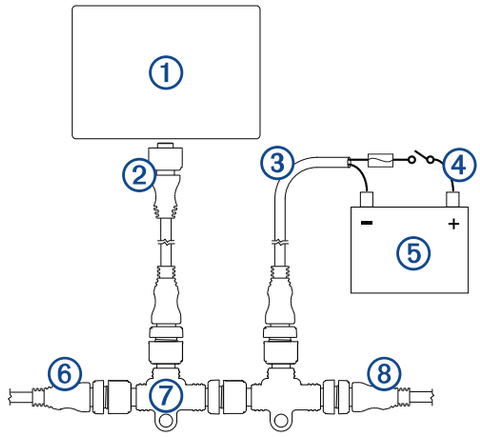
If you are connecting to an **existing** NMEA 2000 network, identify the NMEA 2000 power cable. Only one NMEA 2000 power cable is required for the NMEA 2000 network to operate properly.

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 www.garmin.com/manuals/TD50/.



Item	Description
①	Wind sensor
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

Specification	Measurement
Dimensions without sun cover (H×W×D)	110 x 115 x 30 mm (4.33 x 4.53 x 1.18 in.)
Dimensions with sun cover (H×W×D)	115 x 120 x 35.5 mm (4.53 x 4.72 x 1.40 in.)
Weight without sun cover	247 g (8.71 oz.)
Weight with sun cover	283 g (9.98 oz.)
Temperature range	From 5° to 158°F (from -15° to 70°C)
Compass-safe distance	209 mm (8.25 in.)
Material	Case: fully-gasketed polycarbonate, waterproof to IEC 60529 IPX7 standards Lens: glass with an anti-glare finish
Brightness	1200 cd/m^2 (NIT)
Power usage	3 W max
Unit max. voltage	32 Vdc
NMEA 2000 input voltage	9 to 16 Vdc
NMEA 2000 load equivalency number (LEN)	7 (350 mA at 9 Vdc)

NMEA 2000 PGN Information

Type	PGN	Description
Transmit and receive	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	126464	Transmit PGN list group function
Receive	126992	System time
	127245	Rudder

Type	PGN	Description
	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
	130313	Humidity
	130314	Actual pressure