



GDL® 40 Installation Instructions

About the GDL 40

The GDL 40 antenna provides GSM weather data to compatible Garmin chartplotters on your NMEA 2000® network. The GDL 40 communicates with nearby cellular towers to receive weather data, purchased directly from a Garmin chartplotter on a day-to-day basis, as needed.

Contacting Garmin Product Support

Contact Garmin Product Support if you have any questions about this product.

- Go to www.garmin.com/support.
- Call (913) 397.8200 or (800) 800.1020.

Registering and Activating the GDL 40

Before installing the GDL 40 on your boat, you must activate it online. During the activation process, you must provide a credit card that will be charged each time you purchase a day-pass directly from the chartplotter.

1. Record the unit ID and the serial number (S/N) from your GDL 40 below.

The numbers are located on a sticker on the antenna and on the outside of the package.

Unit ID

S/N

2. Go to <http://my.garmin.com>.
3. Complete an action:
 - Sign in to your myGarmin account.
 - If you do not have an existing myGarmin account, create an account.
4. Click the link to register your product.
5. Follow the on-screen instructions.

After you successfully register and activate the antenna, you then purchase a day-pass directly from the chartplotter as needed.

Installing the GDL 40

CAUTION

Always wear safety goggles, ear protection, and a dust mask when drilling, cutting, or sanding. When drilling or cutting, always check what is on the opposite side of the surface.

Parts Included

Before installing your device, confirm that your package includes the following items. If any parts are missing, contact your Garmin dealer immediately.

- GDL 40 antenna
- Surface-mount bracket
- Pole-mount bracket
- Under-deck-mount bracket
- Three M4 self-tapping screws
- M3 set screw
- NMEA 2000 T-connector
- NMEA 2000 drop cable
- Installation instructions, surface-mount template, and registration sheet

Tools Needed

- Drill and drill bits
- Countersink bit—when mounting on fiberglass
- Jigsaw—surface-mount hole
- Screwdriver—surface mount screws

Optional Equipment

- Marine sealant
- M4 self-tapping screws, shorter than 1 in. (25 mm)—dependent on the thickness of the surface in some under-deck-mounting situations ([page 4](#))
- Additional NMEA 2000 network components ([page 5](#))
- External cellular antenna, antenna cable, and connector converter ([page 5](#))

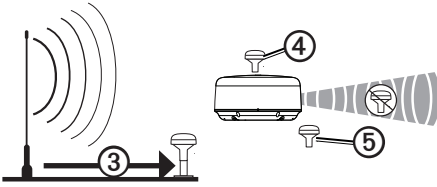
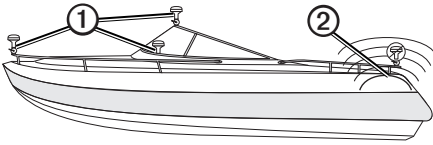
Mounting the Antenna

You can surface mount the GDL 40 antenna (page 2), attach it to a standard marine pole mount (page 3), or install the antenna under fiberglass (page 4).

Mounting Location Considerations

To ensure the best reception, keep these considerations in mind while selecting a mounting location.

- Mount the antenna in a location that has a clear, unobstructed view of the sky in all directions.
- Mount the antenna where it is not covered by the superstructure of the boat, a radar device, or a mast ①.
- Higher mounting locations provide better reception.



- Do not install the antenna near sources of electromagnetic interference (EMI) ②, such as the motor or other large marine electronics.
- Install the antenna at least 3 ft. (1 m) away from the path of a radar beam or VHF radio antenna ③.
 - It is best to install the antenna above the path of the radar beam ④.
 - It is acceptable to install the antenna under the path of the radar beam ⑤.
- Install the antenna at least 5.9 in. (15 cm) from a magnetic compass to avoid interfering with the compass.

Verifying a Mounting Location

1. Select a mounting location (page 2).
2. Temporarily secure the antenna in the selected location.
3. Test the antenna for correct operation on the chartplotter.
4. If you experience interference with other electronics, try a different location.
5. Repeat steps 3 and 4 until you find a mounting location where the antenna operates correctly.

After you verify correct operation at the mounting location, permanently mount the antenna.

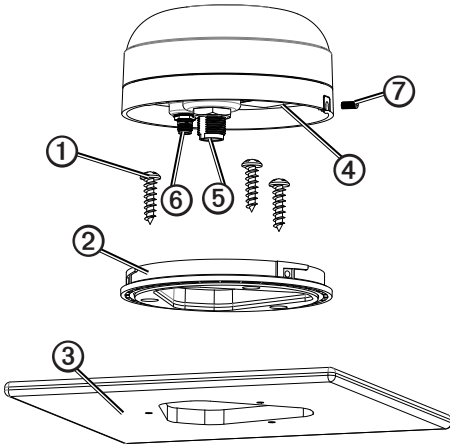
Mounting the Antenna on a Surface

1. Select a mounting location for the antenna, and verify correct operation at the mounting location (page 2).
2. Trim the surface-mount template, and make sure the antenna fits in the mounting location you selected (page 2).
3. Remove the protective liner on the back of the template, and apply the template to the mounting location.
4. Use a 1/8 in. (3.2 mm) bit to drill the three pilot holes indicated on the template.

NOTE: If you are mounting the antenna on fiberglass, it is recommended to use a countersink bit to drill a clearance counterbore through the top gelcoat layer (but no deeper). This helps to avoid cracking in the gelcoat layer when the screws are tightened.

5. Use a 3/8 in. (10 mm) bit to drill a starter hole for the jigsaw blade, as indicated on the template.
6. Use a jigsaw to cut the center hole as indicated on the template.

- Use the three M4 screws ① to secure the surface-mount bracket ② to the mounting surface ③.



- Make sure the large gasket is in place on the bottom of the antenna ④.
- Route a NMEA 2000 drop cable through the center hole, and connect it to the antenna ⑤.
- If you are using an external cellular antenna (page 5), route the antenna cable through the center hole, and connect it to the GDL 40 antenna ⑥.
- Place the antenna on the surface-mount bracket, and twist it clockwise to lock it in place.
- Secure the antenna to the mounting bracket with the M3 set screw ⑦.
- Route the NMEA 2000 drop cable away from sources of electronic interference.
- Connect the antenna to your NMEA 2000 network (page 5).

Mounting the Antenna on a Pole

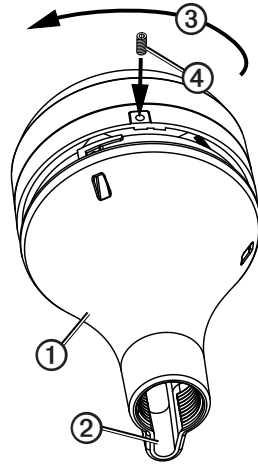
Using the pole-mount bracket, you can install the antenna on a standard marine pole mount (not included). A standard threaded marine pole mount has the following characteristics:

- An outer diameter (OD) of 1 inch
- Threads that measure 14 threads per inch

NOTE: An external cellular antenna is not compatible with the pole-mount bracket (page 5).

Mounting the Antenna with the Cable Routed Outside of the Pole

- Select a mounting location for the antenna, and verify correct operation at the mounting location (page 2).
- Route a NMEA 2000 drop cable through the pole-mount bracket ①.

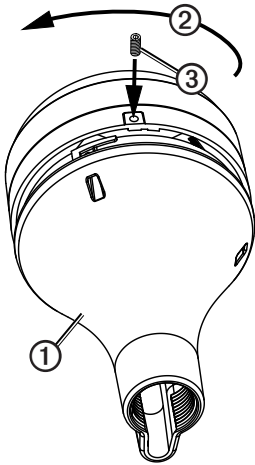


- Place the cable in the vertical slot ② along the base of the pole-mount bracket.
- Thread the pole-mount bracket onto a standard marine pole mount (not included). Do not overtighten the bracket.
- Connect the NMEA 2000 drop cable to the antenna.
- Place the antenna on the pole-mount bracket, and twist it ③ to lock it in place.
- Secure the antenna to the bracket with the M3 set screw ④.
- Fasten the marine pole mount to the boat if it is not already attached.
- Route the NMEA 2000 drop cable away from sources of electronic interference.
- Connect the antenna to your NMEA 2000 network (page 5).
- After the antenna has been installed on the pole mount, fill the remaining gap in the vertical cable slot with a marine sealant (optional).

Mounting the Antenna with the Cable Routed through the Pole

1. Select a mounting location for the antenna, and verify correct operation at the mounting location (page 2).
2. Temporarily position a standard marine pole mount (not included) in the mounting location you selected (page 2).
3. Mark the approximate center of the pole.
4. At the marked location, use a $\frac{3}{4}$ in. (19 mm) bit to drill a hole for the cable to pass through.
5. Fasten the marine pole mount to the boat (hardware not included).
6. Thread the pole-mount bracket ① onto the marine pole mount.

Do not overtighten the bracket.



7. Route a NMEA 2000 drop cable through the pole-mount bracket and the pole, and connect the cable to the antenna.
8. Place the antenna on the pole-mount bracket, and twist it ② to lock it in place.
9. Secure the antenna to the bracket with the included M3 set screw ③.
10. Route the NMEA 2000 drop cable away from sources of electronic interference.
11. Connect the antenna to your NMEA 2000 network (page 5).
12. After the antenna is installed on the pole mount, fill the vertical cable slot with a marine sealant (optional).

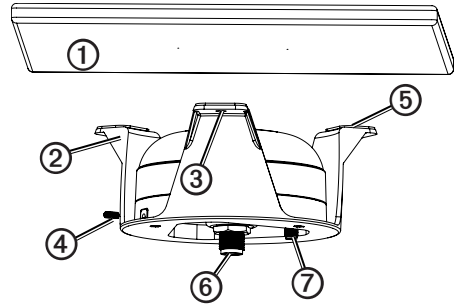
Mounting the Antenna under a Surface

NOTICE

When choosing a location to install the under-deck-mounting bracket, make sure the included screws are not too long for the surface thickness. If the screws are not appropriate for the surface, you must supply the correct length of M4 screws to avoid damage to the top of the mounting surface.

The antenna can be mounted under a fiberglass surface. Because the antenna has difficulty acquiring cellular signals through metal, it is recommended that you use the under-deck mount under a fiberglass surface.

1. Identify the mounting location on the fiberglass surface ①, and verify correct operation at the mounting location (page 2).



2. Using the under-deck-mounting bracket ② as a template, mark three pilot-hole locations ③ on the surface.
3. Use a $\frac{1}{8}$ in. (3.2 mm) bit to drill the three marked pilot holes.
4. Place the antenna in the bracket, and twist it clockwise to lock it in place.
5. Secure the antenna to the bracket with the included M3 set screw ④.
6. Remove the backing from the adhesive pads ⑤ on the under-deck mounting bracket.
7. Make sure that the bracket aligns with the pilot holes, and adhere the under-deck mounting bracket to the surface.
8. Using screws of the appropriate length, fasten the bracket to the surface.
9. Connect a NMEA 2000 drop cable to the antenna ⑥.
10. If you are using an external cellular antenna (page 5), connect it to the GDL 40 antenna ⑦.

11. Route the NMEA 2000 drop cable away from sources of electronic interference.
12. Connect the antenna to your NMEA 2000 network ([page 5](#)).

Connecting the GDL 40 Antenna to a NMEA 2000 Network

If you are unfamiliar with NMEA 2000, see the “NMEA 2000 Network Fundamentals” chapter of the *Technical Reference for Garmin NMEA 2000 Products* for more information. Go to www.garmin.com/garmin/cms/us/onthewater/nmea2000, and click **Manuals**.

1. Create a NMEA 2000 network on your boat, if you do not have one.
You can purchase required cables and connectors from www.garmin.com/marine or your local marine dealer.
2. Connect the antenna to your NMEA 2000 network using the NMEA 2000 drop cable and a T-connector.

If the included 19.5 ft. (6 m) drop cable is not long enough, add an extension to your NMEA 2000 backbone, based on the NMEA 2000 guidelines.

NOTE: If you have not already registered your GDL 40 ([page 1](#)), you must power-cycle the NMEA 2000 network after you complete the registration process.

Installing an External Cellular Antenna

In some instances, you can increase the reception range of your GDL 40 antenna by connecting a certified external cellular antenna (sold separately).

NOTE: An external cellular antenna is not compatible with the pole-mount bracket ([page 3](#)).

Certified Cellular Antennas

- Digital Antenna 295-PW (18" white multiband antenna)
- Digital Antenna 861-CW (30" white multiband antenna)
- Digital Antenna 861-CB (30" black multiband antenna)

Certified Cables and Connectors

- Digital Antenna PowerMax™ cable, part number DA240-30NM
- SubMiniature version A (SMA) male to Mini UHF female RF connector adapter
 - Bomar Interconnect part number 9316505
 - Amphenol® Connex part number 242116

Connecting an External Cellular Antenna to the GDL 40

1. Mount the cellular antenna according to the manufacturer’s instructions.
2. Connect the antenna cable to the cellular antenna using the male Type N connector.
3. Connect the SMA to Mini UHF adapter to the Mini-UHF connector on the antenna cable.
4. Connect the antenna cable (with the adapter installed) to the SMA connector on the bottom of the GDL 40.

Configuring the GDL 40 for Use with an External Cellular Antenna

If you connect an external cellular antenna to the GDL 40, you must specify that you want to use the external antenna instead of the internal antenna on the GDL 40.

1. On a chartplotter connected to the NMEA 2000 network, select **Configure > Communications > NMEA2000 Setup > Device List > GDL 40 > Configure > GSM Antenna**.
2. Select **External**.

Updating the Chartplotter Software

After installing the GDL 40 antenna, upgrade your Garmin chartplotter with the latest software.

1. Go to www.garmin.com/support/software/marine.html.
2. Select the update package that applies to your network setup.
3. Follow the on-screen instructions.

Specifications

Physical Specifications

Specification	Measurement
Size	Diameter × Height: 3 19/32 × 1 15/16 in. (91.6 × 49.5 mm)
Case	Fully gasketed, high-impact plastic alloy, waterproof to IEC 529 IPX7 standards
Temp. Range	From 5°F to 158°F (from -15°C to 70°C)
Compass Safe Distance	5.9 in. (15 cm)

Power Specifications

Specification	Measurement
Power input source	9–16 Vdc
Power usage	2.25 W maximum
NMEA 2000 Load Equivalency Number (LEN)	3 (150 mA)

NMEA 2000 PGN Information

Transmit	
059392	ISO Acknowledgment
060928	ISO Address Claim
126208	NMEA - Command/Request/Acknowledge Group Function
126464	Transmit/Receive PGN List Group Function
126992	System Time and Date
126996	Product Information

Receive	
059392	ISO Acknowledgment
059904	ISO Request
060928	ISO Address Claim
126208	NMEA - Command/Request/Acknowledge Group Function

Weather Broadcast Information

The GDL 40 receives the following weather features and provides them for display on compatible Garmin chartplotters. The weather features are broadcast in set intervals, listed in the table.

Weather Data	Broadcast Interval
City Forecasts	Every 15 minutes
Satellite IR (Cloud Tops)	Every 30 minutes
County Warnings	Every 15 minutes
Hurricane Warnings	Every 15 minutes
Lightning	Every 15 minutes
Marine Warnings	Every 15 minutes
Offshore Warnings	Every 15 minutes
METARs	Every 15 minutes
Weather Radar (NEXRAD)	Every 15 minutes
Sea Surface	Every 30 minutes
Weather Buoys	Every 15 minutes
Winds	Every 30 minutes

Important Safety and Product Information

WARNING

This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This Notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our Web site at www.garmin.com/prop65.

NOTICE

The NMEA 2000 BUS that powers this device must be protected by a 3A fuse to avoid damage to the device.

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This product does not contain any user-serviceable parts. Repairs should only be made by an authorized service center. Unauthorized repairs or modifications could result in permanent damage to the equipment, and void your warranty and your authority to operate this device under Part 15 regulations.

Industry Canada Compliance

Category I radiocommunication devices comply with Industry Canada Standard RSS-210. Category II radiocommunication devices comply with Industry Canada Standard RSS-310.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage,

et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiofrequency Radiation Exposure Information

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 7.9 in. (20 cm) between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Declaration of Conformity

Hereby, Garmin, declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. To view the full Declaration of Conformity, go to www.garmin.com/compliance.



End User License Agreement

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Within this period, Garmin will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not apply to: (i) cosmetic damage, such as scratches, nicks and dents; (ii) consumable parts, such as batteries, unless product damage has occurred due to a defect in materials or workmanship; (iii) damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes; (iv) damage caused by service performed by anyone who is not an authorized service provider of Garmin; or (v) damage to a product that has been modified or altered without the written permission of Garmin. In addition, Garmin reserves the right to refuse warranty claims against products or services that are obtained and/or used in contravention of the laws of any country.

This product is intended to be used only as a travel aid and must not be used for any

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To obtain warranty service, contact your local Garmin authorized dealer or call Garmin Product Support for shipping instructions and an RMA tracking number. Securely pack the device and a copy of the original sales receipt, which is required as the proof of purchase for warranty repairs. Write the tracking number clearly on the outside of the package. Send the device, freight charges prepaid, to any Garmin warranty service station.

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from Garmin warranty coverage. Online auction confirmations are not accepted for warranty verification. To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. Garmin will not replace missing components from any package purchased through an online auction.

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