

GARMIN®



APK™ 10 AUTOPILOT KEYPAD 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
 - Needed for flush mounting:
 - 2 mm ($\frac{5}{64}$ in.) bit
 - 11.2 mm ($\frac{7}{16}$ in.)
 - Needed for surface mounting:
 - 2 mm ($\frac{5}{64}$ in.) bit
 - 20 mm ($\frac{13}{16}$ in.) bit
- #2 Phillips screwdriver
- Jigsaw or rotary tool (for flush mounting)
- File and sandpaper
- Marine sealant (recommended)

Software Update

After you install this device, you must update the software for all autopilot components, connected Garmin® chartplotters, and other connected devices. For instructions on updating the software, see the owner's manual for your chartplotter or helm control device at garmin.com/manuals.

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 (*Specifications, page 7*). 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 surface must be strong enough to support pressing the buttons on the device and to protect it from excessive vibration or shock.
- 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.
- The area behind the mounting surface must allow room for the routing and connection of the cables.

The included template and hardware should be used to mount the device in or on your dashboard. There are two mounting options:

- Flush mount: You can cut an opening in the surface and drill pilot holes so the device is secured closer to the surface.
- Surface mount: Instead of cutting an opening in the surface, you can use the included spacer to install the device on top of the surface. For this option, you will drill a cable-passthrough hole and pilot holes.

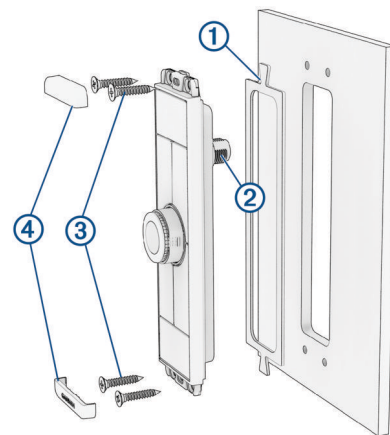
Flush Mounting the Device

You can cut a hole in the mounting surface and install the device closer to the surface for a more flush appearance.

NOTE: The image used in this procedure shows a vertical version of the device. The same steps apply for the horizontal version.

- 1 Trim the included template and make sure it fits in the location where you want to mount the device.
- 2 Secure the template to the mounting location.
- 3 Using a 11.2 mm ($\frac{7}{16}$ 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 rotary cutting tool or jigsaw, cut the mounting surface along the inside of the solid line indicated on the template.
- 5 Place the device into the cutout to test the fit.
- 6 If necessary, use a file and sandpaper to refine the size of the hole.
- 7 Ensure the mounting holes on the device line up with the pilot holes on the template.
- 8 If the mounting holes on the device do not line up with the pilot holes on the template, mark the new pilot-hole locations on your template.
- 9 Remove the device and template from the mounting surface.
- 10 Using a 2 mm ($\frac{5}{64}$ in.) drill bit, drill the pilot holes.

- 11 Place the rubber gasket ① on the back of the device.
 - 12 If you will not have access to the back of the device after you mount it, route the NMEA 2000 drop cable through the hole, and connect it to the port on the device ②.
 - 13 Place the device into the cutout.
 - 14 Secure the device to the mounting surface using the included self-tapping, countersunk wood screws ③.
- NOTE:** Two lengths of screws are included in the product package. You should use the shorter set of screws when flush mounting the device.
- 15 Snap the trim caps ④ into place.



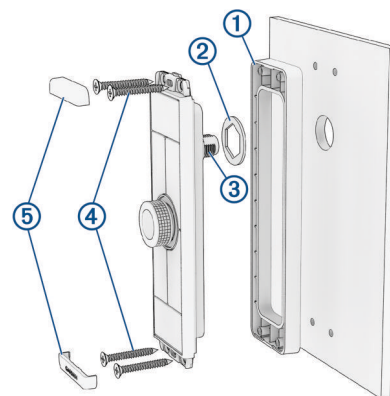
Surface Mounting the Device

You can mount the device on the surface using only a passthrough hole for the cable if you do not want to cut a larger hole to flush mount it.

NOTE: The image used in this procedure shows a vertical version of the device. The same steps apply for the horizontal version.

- 1 Trim the included template and make sure it fits in the location where you want to mount the device.
 - 2 Secure the template to the mounting location.
 - 3 Using a 20 mm ($13/16$ in.) drill bit, drill the cable passthrough hole indicated on the template.
 - 4 Place the included spacer ① on the back of the device.
 - 5 Place the included ring gasket ② around the connector on the back of the device.
 - 6 Place the device against the surface test the fit of the cable connector.

TIP: If you first route the NMEA 2000 drop cable through the passthrough hole and connect it to the back of the device, you can more-accurately test the fit.
 - 7 If necessary, use a file or sandpaper to refine the size of the hole.
 - 8 Ensure the mounting holes on the device line up with the pilot holes on the template.
 - 9 If the mounting holes on the device do not line up with the pilot holes on the template, mark the new pilot-hole locations on your template.
 - 10 Remove the device and template from the mounting surface.
 - 11 Using a 2 mm ($5/64$ in.) drill bit, drill the pilot holes.
 - 12 If you will not have access to the back of the device after you mount it, route the NMEA 2000 drop cable through the hole, and connect it to the port on the device ③.
 - 13 Place the device and spacer against the surface, aligning the pilot holes.
 - 14 Secure the device to the mounting surface using the included self-tapping, countersunk wood screws ④.
- NOTE:** Two lengths of screws are included in the product package. You should use the longer set of screws when surface mounting the device.
- 15 Snap the trim caps ⑤ into place.



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.

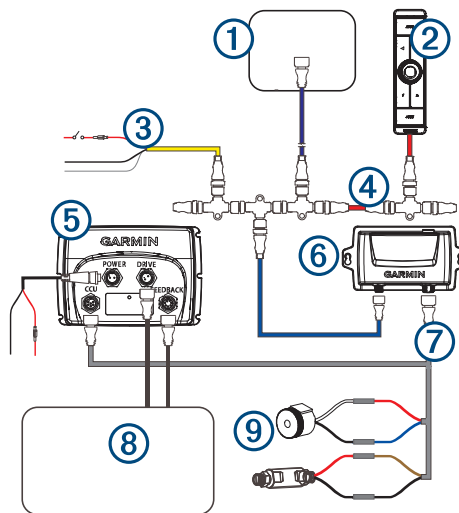
If you are installing a NMEA 2000 power cable, you must connect it to the boat ignition switch or through another in-line switch. NMEA 2000 devices will drain your battery if the NMEA 2000 power cable is connected to the battery directly.

The autopilot keypad must connect to the same NMEA 2000 network as the other autopilot components in order to control the autopilot system. The NMEA 2000 network provides power to the autopilot keypad and allows for communication with the other autopilot components.

This device is powered by the NMEA 2000 network, and a separate power connection is not required.


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 garmin.com/manuals/nmea_2000.

See the installation instructions for your autopilot system for detailed connection information specific to the type of autopilot needed for your boat. This connection diagram shows only the general connection needs of the autopilot keypad.



①	Compatible Garmin helm control or chartplotter (required for all autopilot systems)
②	APK 10
③	NMEA 2000 power cable You should install this cable only if you are building a NMEA 2000 network. Do not install this cable if there is an existing NMEA 2000 network on your boat. You must connect the NMEA 2000 power cable to a 9 to 24 Vdc power source.
④	NMEA 2000 network You must connect the autopilot keypad to the same NMEA 2000 network as the other autopilot components using the included T-connector and drop cable. If there is not an existing NMEA 2000 network on the boat, you can build one using the cables and connectors supplied in the core autopilot package. See the installation instructions provided with your autopilot system for more information.
⑤	Autopilot ECU or SmartPump (hydraulic, mechanical, and SmartPump models) Steering controller CAN bus (steer-by-wire models)
⑥	Autopilot CCU
⑦	Autopilot CCU cable
⑧	Autopilot pump or drive unit (hydraulic and mechanical models)
⑨	Autopilot Alarm Shadow Drive™ sensor (hydraulic and SmartPump models)

Keys

Key	Description
Heading adjustment dial	Turn to adjust the heading or wind angle in small steps. Press to cycle the dial and keys backlight between minimum, maximum, and automatic. NOTE: The LED ring around the dial indicates the status of the autopilot and keypad (Status LED, page 6).
AUTO	Engages the autopilot system.
STBY	Puts the autopilot system into standby.
	Adjusts the heading in steps.
1 and 2	Performs an assigned function: <ul style="list-style-type: none"> The default assigned functions depend on the vessel type (Function Key Default Actions, page 6). You can configure these keys as needed (Configuring the Function Keys, page 6).

Function Key Default Actions

The two function keys are programmed with default actions based on the vessel type.

Vessel Type	Function Key 1	Function Key 2
Power Planing Hull and Power Displacement Hull	Circle (pattern)	Route Follow
Sailing and Sailing Catamaran	Tack/Gybe	Wind Hold

Configuring the Function Keys

The two keys labeled 1 and 2 on the keypad can be configured using a compatible chartplotter or a GHC™ 50 helm control connected to the autopilot system.

- 1 From the autopilot screen, select **Options > Autopilot Setup > Autopilot Keypad > Autopilot Keypad Configuration**
- 2 Select an option:
 - To configure the key labeled **1**, select **Key 1**.
 - To configure the key labeled **2**, select **Key 2**.
- 3 Select the function you want to assign to the key.
- 4 Repeat this procedure for the other key, if needed.

Status LED

The LED ring around the heading adjustment dial provides status and troubleshooting information based on the color and behavior of the lights in the ring.

Color	State	Status
Green	Solid	The autopilot is engaged.
White	Solid	The autopilot is in standby mode.
Yellow	Solid	The autopilot is using Shadow Drive technology.
	Flashing	Device software is missing. Perform a software update to restore functionality.
Blue	Spinning	A network update is being performed. Other devices on the network are in the process of being updated, but the APK 10 software is not presently being updated. NOTICE Do not remove power while a network update is in progress. Removing power in the middle of the update may result in an error that requires a recovery process.
	Flashing	The APK 10 device software is being updated. NOTICE Do not remove power while the software is being updated. Removing power in the middle of the update may result in an error that requires a recovery process.
Red	Solid	No autopilot CCU is detected. A software update may be required, especially after adding the APK 10 to an existing autopilot installation.
	Flashing	There is an error with the autopilot system. Update the software. Check all component connections and installations. If the error cannot be resolved, contact Garmin product support.

Specifications

Flush mount dimensions (W x L x D)	Horizontal model: 139.7 x 57.4 x 7 mm (5 1/2 x 2 17/64 x 9/32 in.) Vertical model: 40.1 x 157 x 7 mm (1 37/64 x 6 3/16 x 9/32 in.)
Surface mount dimensions (W x L x D)	Horizontal model: 140.7 x 58.4 x 16.4 mm (5 35/64 x 2 19/64 x 41/64 in.) Vertical model: 41.1 x 158 x 16.4 mm (1 39/64 x 6 7/32 x 41/64 in.)
Weight	Horizontal model: 116 g (4.09 oz.) Vertical model: 100 g (3.53 oz.)
Power input source	From 9 to 32 Vdc, unregulated
Input current	Typical: 180 mA @ 12 Vdc Max: 300 mA @ 9 Vdc
NMEA 2000 LEN @ 9 Vdc	6
NMEA 2000 power draw	Typical: 2 W Max.: 2.5 W
Temperature range	From -15 to 70°C (from 5 to 158°F)
Water rating	IEC 60529 IPX7 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 .
Compass-safe distance	17 cm (16.5 in.)

物質宣言

部件名称	有毒有害物质或元素									
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚	邻苯二甲酸二(2-乙基己)酯	邻苯二甲酸丁苄酯	邻苯二甲酸二丁酯	邻苯二甲酸二异丁酯
印刷电路板组件	✗	○	○	○	○	○	○	○	○	○
金属零件	✗	○	○	○	○	○	○	○	○	○
电缆 电缆组件 连接器	✗	○	○	○	○	○	○	○	○	○
塑料和橡胶零件	○	○	○	○	○	○	○	○	○	○

本表格依据 SJ/T11364 的规定编制。

○: 代表此种部件的所有均质材料中所含的该种有害物质均低于 (GB/T26572) 规定的限量

✗: 代表此种部件所用的均质材料中, 至少有一类材料其所含的有害物质高于 (GB/T26572) 规定的限量

* 该产品说明书应提供在环保使用期限和特殊标记的部分详细讲解产品的担保使用条件。



产品

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