GBT™ 10 Installation and Configuration Instructions

Use the Garmin® GBT 10 Bennett Trim Tab Adapter to adapt analog information provided by a Bennett Trim Tab Position Indicator (Bennett TPI), or by the Bennett trim tab sensors on your boat, to your NMEA 2000® network. Your GBT 10 adapter allows you to observe trim tab information on the compatible Garmin display devices connected to your NMEA 2000 network. For a list of compatible Garmin chartplotters and devices, visit www.garmin.com.

Compare the contents of this package with the packing list on the box. If any pieces are missing, contact your Garmin dealer immediately.

Product Registration

Help us better support you by completing our online registration today. Go to http://my.garmin.com. Keep the original sales receipt, or a photocopy, in a safe place.

Contact Garmin

Contact Garmin Product Support if you have any questions while using your GBT 10 adapter. In the USA, go to www.garmin.com/support, or contact Garmin USA by phone at (913) 397.8200 or (800) 800.1020.

In the UK, contact Garmin (Europe) Ltd. by phone at 0808 2380000.

In Europe, go to www.garmin.com/support and click **Contact Support** for in-country support information, or contact Garmin (Europe) Ltd. by phone at +44 (0) 870.8501241.

See the *Important Safety and Product Information* guide in the compatible Garmin display device 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 the opposite side of the drilling or cutting surface.

Needed Tools and Supplies

- Heat-shrink tubing and a heat gun
- Cable ties
- Additional NMEA 2000 cabling and connectors (optional)

Determining an Installation Location

When you are selecting a location to install the GBT 10 adapter, consider the following:

- During installation, you connect the GBT 10 adapter to the Bennett TPI (or directly to the Bennett trim tab sensors), and to the NMEA 2000 network. Therefore:
  - Choose a location that is within 173 in. (4.4 m) of the Bennett TPI (or the Bennett trim tab sensors) to avoid splicing bare wires.
  - Choose a location between the NMEA 2000 backbone and the Bennett TPI (or the Bennett trim tab sensors).
  - If you cannot connect the adapter directly to the NMEA 2000 network, add a drop cable. See page 3 for more information.
- The adapter is IEC 60529 IPX7 waterproof, and can be submerged up to 30 minutes at 1 meter. Do not install the adapter in a location where it will be submerged regularly, though the location can be subject to wash-down.
- You can use cable ties (not included) to secure the adapter to an existing structure on your boat.
- You can use mounted-head cable ties (not included) and screws (not included) to secure the adapter to a bulkhead or other suitable surface on your boat.
- Install the adapter at least 2 in. (5 cm) from a magnetic compass to prevent electromagnetic interference, which can cause inaccurate compass readings.

Wiring the GBT 10 Adapter

Connect the GBT 10 adapter either to the Bennett TPI or to the Bennett trim tab sensors directly using the bare wires on the wiring harness.

Wiring the GBT 10 Adapter to the Bennett Trim Tab Display

You can wire the GBT 10 adapter directly to the Bennett TPI. Do not remove any wires from the back of the Bennett TPI, and wire the GBT 10 adapter to the TPI according to the following table. Use only the wires listed for the GBT 10 adapter. Cut and tape any unused wires.

Bennett TPI Connector Label	GBT 10 Adapter Wire Color
+	None
–	None
BRG	None
RED	None*
RED	Blue
SHLD	Black
GRN	Yellow
GRN	None*

*When wiring the GBT 10 adapter to the Bennett TPI, it is important that you do not connect wires to the RED and GRN connections farthest from the SHLD connection. Connecting the GBT 10 adapter wires to the connections farthest from the SHLD connection will interfere with the operation of the Bennett TPI.

Wiring the GBT 10 Adapter Directly to the Sensors on the Trim Tabs

You can wire the adapter directly to the Bennett trim tab sensors where the trim tabs are installed. Wire the GBT 10 adapter to the sensors according to the following table.

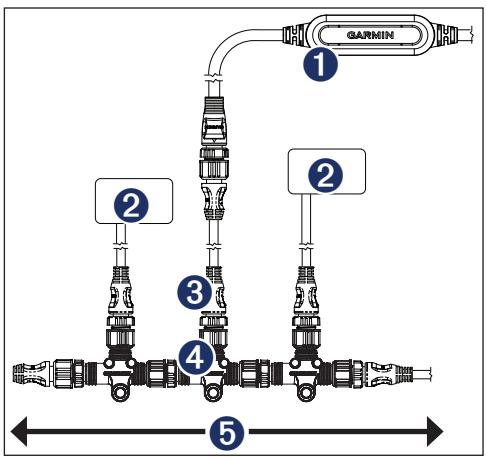
GBT 10 Adapter Wire	Bennett Trim Tab Sensors
Blue	Port sensor wire 1**
White	Port sensor wire 2**
Yellow	Starboard sensor wire 1**
Drain	Sensor drain wires
Red	Starboard sensor wire 2**

**When wiring the GBT 10 adapter directly to the trim tab sensors, the connection order of the GBT 10 adapter port wires (blue/white) and the GBT 10 adapter starboard wires (yellow/red) to the two wires on the respective trim tab sensor is not important.

NOTICE: After connecting the adapter to the Bennett TPI or to the Bennett trim tab sensors, cover any exposed wires with heat-shrink tubing.

Connecting the GBT 10 Adapter to a NMEA 2000 Network

After you have connected the GBT 10 adapter to the Bennett TPI or to the Bennett trim tab sensors, connect it to the existing NMEA 2000 network on your boat. If you do not have a NMEA 2000 network on your boat, you must build one. For more information on NMEA 2000 and to purchase additional connectors and cables, go to www.garmin.com.



1. *GBT 10 adapter*
2. *NMEA 2000 device (not included)*
3. *Drop cable (optional - not included)*
4. *T-connector (one included)*
5. *Existing NMEA 2000 network*

Connecting the GBT 10 Adapter to an Existing NMEA 2000 Network

To connect the GBT 10 adapter to your existing NMEA 2000 network:

1. Determine where to connect the GBT 10 adapter to your existing NMEA 2000 backbone.
2. Disconnect one side of a NMEA 2000 T-connector from the backbone. To extend the NMEA 2000 backbone, connect a NMEA 2000 backbone extension cable to the side of the disconnected T-connector.
3. Add the included T-connector for the GBT 10 adapter to the NMEA 2000 backbone by connecting it to the side of the disconnected T-connector.
4. Connect the NMEA 2000 connector on the GBT 10 adapter to the T-connector added in step 3.

5. (Optional) If the GBT 10 adapter cannot connect directly to the NMEA 2000 backbone, route a NMEA 2000 drop cable (not included) to the bottom of the T-connector added in step 3. Use a drop cable with a length up to 20 ft. (6 m). Connect the drop cable to the T-connector and to the NMEA 2000 connector on the adapter.

NOTICE: If you have an existing NMEA 2000 network on your boat, it should already be connected to power. Do not connect an additional NMEA 2000 power cable to an existing NMEA 2000 network, because only one power source should be connected to a NMEA 2000 network.

Configuring the GBT 10 Adapter

NOTE: This section provides specific configuration information for the GBT 10 adapter using your compatible Garmin display device. To access the NMEA 2000 configuration menu on your display device, consult the documentation provided with your display device.

Calibrating the Trim Tab Position

To use the GBT 10 adapter, you must calibrate the position of the trim tabs the adapter is associated with.

NOTE: If you only adjust your trim tabs within a limited range of motion on a regular basis, calibrate the GBT 10 adapter using your normal range instead of the full range. Only the calibrated range will be displayed on your chartplotter or marine instrument.

1. From the NMEA 2000 Devices list, select the GBT 10 device.
2. Select an option:
   - For most Garmin chartplotters, select **Review** > **Trim Tab Calibration**.
   - For other Garmin marine devices, select **Config** > **Trim Tab Calibration**.
3. Follow the on-screen instructions to calibrate the trim tab position.

Configuring the GBT 10 Adapter if the Trim Tab Calibration Selection Is Not Displayed

Depending on the version of software loaded on your Garmin marine instrument, the specific configuration options may not be displayed on the configuration screens.

To calibrate the trim tab position if the menu option is not displayed:

To use the GBT 10 adapter, you must calibrate the position of the trim tabs that the adapter is associated with. You can enter a minimum of two, and a maximum of sixteen, trim tab positions. For greater accuracy, enter more trim tab positions.

1. While viewing the NMEA 2000 configuration menu, select the GBT 10 device.
2. Select **Config** > **Generic Configuration**.
3. Enter the following command: "**CALIBRATION=1**"
4. Move both trim tabs to the highest position. When the trim tabs are in the highest position, they should be at or near 0% of their full range of motion.
5. Enter the following command: "**TRIMTABPOS=**"
6. After the command, enter the percentage of the highest trim tab position as a whole number between 0 and 100, and select Done. For example, **TRIMTABPOS=0Done**.
7. Move both trim tabs to the lowest position. When the trim tabs are in the lowest position, they should be at or near 100% of their full range of motion.
8. Enter the following command: **"TRIMTABPOS=**"
9. After the command, enter the percentage of the lowest trim tab position as a whole number between 0 and 100, and select Done. For example, **TRIMTABPOS=100Done**.

10. To enter an additional, optional trim tab position, move both trim tabs to a new position, and observe the trim tab position as a percentage of the full range of motion of the trim tab.
11. Enter the following command: "**TRIMTABPOS=**"
12. After the command, enter the percentage of the trim tab position as a whole number between 0 and 100, and select Done. For example, **TRIMTABPOS=50Done**.
13. Repeat steps 10 through 12 to enter additional, optional trim tab positions.

Restoring Factory Default Settings

You will lose all custom configuration settings when you restore factory default settings.

1. From the NMEA 2000 Devices list, select the GBT 10 device.
2. Select an option:
   - For most Garmin chartplotters, select **Review** > **Factory Defaults**.
   - For other Garmin marine devices, select **Config** > **Factory Defaults**.
3. Select **Yes**.

Specifications

Physical

Weight: 12.85 oz. (365 g)

Size: (W × H × L) $^{31}/_{32}$ × $^{43}/_{64}$ × 3 $^{3}/_{32}$ in. (24.7 × 17.0 × 78.6 mm)

Total Cable Length: 16 ft. (4.9 m)

Case Material: Thermoplastic rubber (PCB overmold); PVC jacket (cable); PVC overmold (connectors/strain reliefs). Waterproof to IEC 529 IPX7 standards.

Temperature Range: From 5°F to 158°F (from -15°C to 70°C)

Compass Safe Distance: 2 in. (5 cm)

Electrical

Power Input Source: 9–16 Vdc from the NMEA 2000 bus

NMEA 2000 Power Usage: 0.9 W max

NMEA 2000 Load Equivalency Number (LEN): 1 (50 mA)

Communications

Use this table to determine the approved NMEA 2000 PGN information that is transmitted and received the GBT 10 adapter during communication with a NMEA 2000-compliant device.

Transmit		Receive	
059392	ISO Acknowledgment	059392	ISO Acknowledgment
060928	ISO Address Claim	059904	ISO Request
126208	NMEA - Command/Request/ Acknowledge Group Function	060928	ISO Address Claim
126464	Transmit/Receive PGN List Group Function	126208	NMEA - Command/Request/ Acknowledge Group Function
126996	Product Information		
130576	Small Craft Status		

The GBT 10 is NMEA 2000 certified

For the latest free software updates (excluding map data) throughout the life of your Garmin products, visit the Garmin Web site at www.garmin.com.

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July 2009 Part Number 190-01081-04 Rev.A Printed in Taiwan