

GARMIN[®]

GNX™ 20/21



Owner's Manual

All rights reserved. Under the copyright laws, this manual may not be copied, in whole or in part, without the written consent of Garmin. Garmin reserves the right to change or improve its products and to make changes in the content of this manual without obligation to notify any person or organization of such changes or improvements. Go to www.garmin.com for current updates and supplemental information concerning the use of this product.

Garmin®, the Garmin logo, and Nexus® are trademarks of Garmin Ltd. or its subsidiaries, registered in the USA and other countries. GNX™ and GND™ are trademarks of Garmin Ltd. or its subsidiaries. These trademarks may not be used without the express permission of Garmin.

NMEA®, NMEA 2000®, and the NMEA 2000 logo are registered trademarks of the National Marine Electronics Association.

Table of Contents

Introduction	1
Device Overview	1
Using the Race Timer	1
Profiles	1
Selecting a Profile	1
Restoring Profiles to their Default Settings	1
Instrument Pages	1
Cycling Through Instrument Pages	1
Configuring the Data Fields	1
Changing the Layout of Instrument Pages	2
Adding an Instrument Page	2
Removing an Instrument Page	2
Device Configuration	2
Resolving a Combined Network	2
System Settings	2
Display Settings	2
Viewing and Editing NMEA Settings	2
NMEA 0183 Data Type Information	3
Registering Your Device	3
Appendix	3
Data Fields	3
Index	4

Introduction

⚠ WARNING

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

Device Overview

NOTE: Certain functions are available only when the appropriate sensors are connected to the device.

The marine instrument allows you to view data sources from sensors through a NMEA® 0183 network.

The instrument can also receive data from Nexus® instruments and sensors using a GND™ 10 device (sold separately).



	Select to return to the previous menu or to the instrument page.
	Select to view the menu for an instrument page.
	Select to scroll through instrument pages and menus.
	Select to view the display settings. Select twice to view the backlight settings. Hold to view the power-off settings.

Using the Race Timer

You can use the race timer to count down to a race, and then measure the duration of the race. You can add the race timer as a data field on a page.

TIP: To quickly open the race timer screen, hold from a main page.

- 1 From a page with the race timer active, select > **CONFIGURE DATA FIELDS > RACE TIMER SETTINGS.**
- 2 Select an option:
 - When the device is in prerace mode and is stopped or running, select **RESET**, **START**, or **SETUP**.
 - When the device is in prerace mode and is running, sync the timer to the next minute up or the next minute down, or select **STOP**.
 - When the device is in race mode and the race timer is counting up, sync the timer back to 0:00, or select **STOP**.

Profiles

Profiles are collections of instrument pages that can be customized. Profiles can be made up of instrument pages that display similar data, such as GPS speed information and GPS course information.

During the initial setup, you can select a preset profile, or you can create a custom profile. You can select a different profile at any time.

POWERBOAT: This profile displays instruments useful when in a powerboat. Available default instruments include GPS speed information, GPS course information, depth, bearing to waypoint, distance to the next waypoint, and water temperature.

SAIL CRUISE: This profile displays instruments useful when cruising in a sailboat. Available default instruments include true wind speed, GPS speed information, GPS course information, bearing to waypoint, distance to the next waypoint, true wind angle, and depth.

SAIL RACE: This profile displays instruments useful when racing in a sailboat. Available default instruments include GPS speed information, true wind speed, true wind angle, heading, bearing to waypoint, and distance to the next waypoint.

CUSTOM: This profile allows you to customize the page to display instruments useful to your specific boating needs. The default page displays speed over ground information.

Selecting a Profile

- 1 Select > **SETUP > PROFILES.**
- 2 Select a profile.

Restoring Profiles to their Default Settings

You can restore profiles to their factory default settings.

- 1 Select > **SETUP > PROFILES > RESET DEFAULTS.**
- 2 Select **CURRENT PROFILE** or **ALL PROFILES.**

Instrument Pages

Cycling Through Instrument Pages

From the home page, select .

Using Auto Scroll

You can use auto scroll to move through all of the instrument pages automatically.

- 1 Select .
- 2 Select **SETUP > AUTO SCROLL.**
- 3 Select the length of time the device displays each instrument page.

NOTE: Setting the time to zero disables the auto scroll feature.

Configuring the Data Fields

Data provided on an instrument page can be shown in various ways depending upon the instrument page that is displayed.

Select > **CONFIGURE DATA FIELDS.**

Configuring Graph Data Fields

Some instrument pages display graph data. You can configure the data that displays on the graphs.

- 1 From the instrument page, select > **CONFIGURE DATA FIELDS > GRAPH SETTINGS.**
- 2 Select an option:
 - To determine how long the graph data displays, select **GRAPH DURATION.**
 - To configure the scale of values displayed in the graph, select **GRAPH SCALE.**

Changing the Layout of Instrument Pages

NOTE: You can change the layout of an instrument page to display up to three fields of data from connected instruments.

- 1 From the instrument page you need to change, select  > **EDIT CURRENT PAGE > CHANGE LAYOUT.**
- 2 Select the number of fields to show on the instrument page.
- 3 Select the field to change.
- 4 Select a category.
- 5 Select the data to show in the field.
- 6 Repeat steps 3 through 5 for each additional field you need to change.
- 7 Select **DONE.**

Adding an Instrument Page

You can create a custom page. You can add up to three instruments from instrument collections to display on a custom page.

- 1 Select  > **ADD/REMOVE PAGE > ADD PAGE.**
- 2 Select **ONE FUNCTION, TWO FUNCTION, or THREE FUNCTION.**
- 3 Select an instrument page collection.
- 4 Select a number.
- 5 If necessary, select an empty function.
- 6 Select  or  to scroll through the instrument pages.
- 7 Select an instrument page to add.

Removing an Instrument Page

- 1 Select the instrument page to remove.
- 2 Select  > **ADD/REMOVE PAGE > REMOVE PAGE.**
- 3 Select **YES.**

Device Configuration

Resolving a Combined Network

When the device is turned on, it can detect when it has been synchronized with instruments on another network. This can happen if the device has previously been installed on another vessel and synchronized with instruments on the other vessel's network. If the settings are not restored to the factory default values (*Restoring Profiles to their Default Settings, page 1*), the device detects a conflict that must be resolved.

- 1 Select  > **SETUP > COMBINED NETWORKS DETECTED.**
- 2 Select an option:
 - To synchronize existing instruments on the network to the device, select **NO.**
 - To synchronize the device to existing instruments on the network, select **YES.**

System Settings

Select  > **SETUP > SYSTEM.**

UNITS: Sets the units of measure.

HEADING: Sets the reference and the variance used in calculating heading information.

BEEPER: Sets when audible sounds are used.

GPS POSITION: Sets the position format and the map datum. The map datum is dependent on the position format.

AUTO POWER: Enables the device to turn on automatically when the NMEA network turns on.

LANGUAGE: Sets the on-screen language.

TIME: Sets the time format, time zone, and daylight saving time for your location.

SYSTEM INFORMATION: Displays software information.

FACTORY DEFAULT: Resets the device settings to factory default values.

Selecting the Heading Type

- 1 Select  > **SETUP > SYSTEM > HEADING.**
- 2 Select **NORTH REFERENCE.**
- 3 Select an option:
 - To automatically set the magnetic declination for your GPS position, select **MAGNETIC.**
 - To set true north as the heading reference, select **TRUE.**
 - To set grid north as the heading reference (000°), select **GRID.**

Configuring the Beeper

You can configure the beeper to sound when the keys are pressed.

Select  > **SETUP > SYSTEM > BEEPER.**

Configuring the Position Format

NOTE: Do not change the position format or the map datum unless you are using a map or chart that specifies a different position format.

- 1 Select  > **SETUP > SYSTEM > GPS POSITION.**
- 2 Select an option:
 - To change the position format in which a reading appears, select **POSITION FORMAT.**
 - To change the coordinate system on which the map is structured, select **MAP DATUM.**

Configuring Data Sources

Instruments that are connected to your device and provide data, such as wind sensors or speed sensors, can be configured through your device. Refer to your instruments' owner's manuals for more information.

- 1 Select  > **SETUP > DATA SOURCES.**
- 2 Select a data source and configure it.
- 3 Select your instrument.
- 4 Select a source and configure.

Display Settings

Select  > **SETUP > DISPLAY.**

BACKLIGHT: Sets the backlight brightness.

COLOR: Sets the screen color.

NETWORK SHARING: Shares color and backlight settings with devices across the NMEA 2000® or NMEA 0183 networks.

Viewing and Editing NMEA Settings

You can view information about NMEA or NMEA 2000 device and change device-specific options.

- 1 Select .
- 2 Select **SETUP.**
- 3 Select **NMEA 0183 or NMEA 2000 DEVICES.**
- 4 If necessary, select an option:
 - To view information about the device, such as the software version and the serial number, select **DEVICE LIST.**
 - To change the label of a device, select **LABEL DEVICES.**

NMEA 0183 Data Type Information

Each NMEA certified sensor provides unique information to the NMEA certified display device, such as the GNX 20/21. The data you can view on your display depends on the sensors you have installed and configured. See the General NMEA Data Type Requirements topic in the *Technical Reference for Garmin® NMEA Products* manual at www.garmin.com/support.

Registering Your Device

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.

Appendix

Data Fields

ABS: Absolute, relative to another data field. For example, absolute humidity.

AIR: The air temperature.

AVG: The average amount.

AWA: The wind angle measured relative to the bow of the vessel.

AWS: The measured speed of the wind.

BAR: The calibrated current pressure.

BAT: The battery voltage.

BSP: The speed of the boat relative to the water.

BTW: The direction from your current location to a destination. You must be navigating for this data to appear.

COG: The actual direction of travel, regardless of the course steered and temporary variations in heading.

CTS: The direction in which you must steer to return to the course set at the start of navigation.

DIS: The distance traveled for the current track or activity.

DPT: The depth of the water. Your device must be connected to a NMEA 0183 or NMEA 2000 device capable of acquiring the water depth.

DRF: The speed of the current.

DTW: The distance to the waypoint.

ELV: The altitude of your current location above or below sea level.

ERR: The precision of the current position, when used with GPS.

GWD: The direction of the wind relative to the ground, referenced from the north.

GWS: The speed of the wind relative to the ground.

HDG: The direction the boat is pointing.

HUM: The level of humidity.

MAX: The maximum in relation to another data field. For example, maximum speed.

MIN: The minimum in relation to another data field. For example, minimum speed.

ODO: A running tally of distance traveled for all trips. This total does not clear when resetting the trip data.

OTH: The opposite tack direction of the vessel based on the current tack direction.

POS: The vessel's current position.

RACE: The timer for vessel racing.

REF: A steer pilot reference.

REL: Relative to another data field. For example, relative humidity.

RUD: The rudder relative to another data field. For example, rudder angle.

SEA: The temperature of the water.

SOG: The actual speed of travel, regardless of the course steered and temporary variations in heading.

STR: The steer pilot.

TRP: A running tally of the distance traveled since the last reset.

TWA: The angle of the wind relative to the water, referenced from the bow of the boat with a port or starboard angle up to 180 degrees.

TWD: The true direction of the wind relative to north.

TWS: The true speed of the wind relative to the vessel.

UTC: The Coordinated Universal Time.

VMG: The speed at which you are closing on a destination along a route. You must be navigating for this data to appear.

WND: The velocity made good upwind.

XTE: A cross track error.

Index

A

automatic scrolling [1](#)

B

beeper [2](#)

D

data [2](#)

data fields [3](#)

device, registration [3](#)

display settings [2](#)

H

heading, type [2](#)

I

instruments [2](#)

 adding pages [2](#)

 configuration [1](#)

 removing pages [2](#)

N

NMEA 0183 [3](#)

NMEA 2000 [2](#)

P

pages [1](#)

position format [2](#)

product registration [3](#)

profiles [1](#)

 restoring [1](#)

 selecting [1](#)

R

race timer [1](#)

registering the device [3](#)

S

settings [2](#)

system information [2](#)

T

timer [1](#)

troubleshooting [2](#)

www.garmin.com/support



1800 235 822



+43 (0) 820 220230



+ 32 2 672 52 54



0800 770 4960



1-866-429-9296



+385 1 5508 272
+385 1 5508 271



+420 221 985466
+420 221 985465



+ 45 4810 5050



+ 358 9 6937 9758



+ 331 55 69 33 99



+ 39 02 36 699699



(+52) 001-855-792-7671



0800 427 652



0800 0233937



+47 815 69 555



00800 4412 454
+44 2380 662 915



+35 1214 447 460



+386 4 27 92 500



0861 GARMIN (427 646)
+27 (0)11 251 9800



+34 93 275 44 97



+ 46 7744 52020



+886 2 2642-9199 ext 2



0808 238 0000
+44 870 850 1242



+49 (0) 89 858364880
zum Ortstarif - Mobilfunk
kann abweichen



913-397-8200
1-800-800-1020

