Raymarine

ALPHA

Operation Instructions

Document number: 81415 (Rev 4) | English (en-US) | Date: 09-2025 | Applicable software version: v3.2.5

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English (en-US)
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CONTENTS

CHAPTER 1: IMPORTANT INFORMATION

Safety warnings

Warning: Maintain a permanent watch

Always maintain a permanent watch, this will allow you to respond to situations as they develop. Failure to maintain a permanent watch puts yourself, your vessel and others at serious risk of harm.

Warning: Autopilot usage

Autopilots navigate a preset course and do NOT respond to hazards automatically. The operator must remain at the helm at all times and be ready to avoid hazards and warn passengers of course changes.

Warning: Day mode brightness warning

Switching from Night mode to Day mode instantly increases the display brightness to maximum. This will impact the operator's night vision, due to the relative brightness of Day mode in night time conditions.

Product warnings

Caution: Sun covers

- Sun covers are used to protect the display screen against the damaging effects of ultraviolet (UV) light. If your product is supplied with a sun cover always ensure it is fitted when the product is not in use.
- To avoid potential loss of the sun cover, ensure that the sun cover is removed when travelling at high speed, whether in the water or when the vessel is being towed.
- To avoid potential screen damage, ensure that the rear surface of the sun cover and the display screen are clean and free from debris before placing the sun cover on the screen.

Caution: Product cleaning

When cleaning products:

- Switch off power supply.
- Use a clean damp cloth to wipe clean.
- Do NOT use: abrasive, acidic, ammonia, solvent or other chemical-based cleaning products.
- Do NOT use a jet wash.

Regulatory notices

TFT Displays

The colors of the display may seem to vary when viewed against a colored background or in colored light. This is a perfectly normal effect that can be seen with all color Thin Film Transistor (TFT) displays.

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Declaration of Conformity

Raymarine UK Ltd declares that the products listed below are in conformity with the relevant sections of the listed designated standards and / or other normative documents:

- Alpha 7 performance display, part number: E70649
- Alpha 9 performance display, part number: E70650

Region	Standard	Mark
UK	EMC Regulations 2016	UKCA
EU	EMC Directive 2014/30/EU	CE

The original Declaration of Conformity certificates may be obtained via the documentation page at www.bit.ly/alpha-display-docs

PSTI Compliance

For products sold into the United Kingdom (UK), use the following link to obtain the product's Statement of Compliance with the *Product Security and Telecommunications Infrastructure* (PSTI) Regulations:

Visit the following web address and enter the product's model name or number (SKU) into the provided search field:

- www.bit.ly/rym-sec-com

Warranty policy and registration

Visit the Raymarine website to **read the latest warranty policy**, and **register** your product's warranty online: www.bit.ly/rym-warranty

It is important that you register your product to receive full warranty benefits. Your product package includes a barcode label indicating the serial number of the unit. This serial number is also provided on a label affixed to the product itself. You will need this serial number when registering your product online.

IMO and SOLAS

The equipment described within this document is intended for use on leisure marine boats and workboats NOT covered by International Maritime Organization (IMO) and Safety of Life at Sea (SOLAS) Carriage Regulations.

Technical accuracy

To the best of our knowledge, the information in this document was correct at the time it was produced. However, Raymarine cannot accept liability for any inaccuracies or omissions it may contain. In

addition, our policy of continuous product improvement may change specifications without notice. As a result, Raymarine cannot accept liability for any differences between the product and this document. Please check the Raymarine website (https://bit.ly/raymarine-home) to ensure you have the most up-to-date version(s) of the documentation for your product.

Publication copyright

CHAPTER 2: DOCUMENT INFORMATION

CHAPTER CONTENTS

2.1 Applicable products

This document is applicable to the following products:

- Alpha 7 performance display, part number: E70649
- Alpha 9 performance display, part number: E70650

2.2 Multifunction display (MFD) requirement

The Alpha Series performance display is not a standalone product. It MUST be connected to a Raymarine **Axiom-Series** or **Axiom 2-Series** Multifunction display (MFD) / chartplotter. All displays must be running the latest available software versions.

The Alpha Series is compatible with the following Raymarine Multifunction displays / chartplotters:

Compatible Raymarine MFDs	Required MFD software version
Axiom 2-Series: Axiom 2 Pro, Axiom 2 XL	LightHouse 4, v4.7.172 or later
Axiom-Series: Axiom, Axiom+, Axiom Pro, Axiom XL	LightHouse 4, v4.7.172 or later

Alpha software download link
www.bit.ly/rym-alpha-download

LightHouse 4 software download link
www.bit.ly/LH4-download

2.3 Document conventions

The following conventions are used throughout this document:

Formatting of user interface menus and settings.

References to menus and setting options are formatted using square brackets [].
Examples:

- The *[Pages]* screen provides a horizontally-scrollable live view of the data pages that currently exist on your unit.
- You can also delete unwanted data pages using the available *[Delete]* option.

Procedures for navigating menu hierarchies.

Menu hierarchies are used in this document to provide a quick summary on how to access a particular function or menu option.
Examples:

- To add a new data page, navigate to: *[Data page view > Overlay menu > Pages > + Add page]*.
- To automatically lock your device, navigate to: *[Data page view > Overlay menu > Settings > Auto-lock]*

Commonly used terminology

The terminology listed below is commonly used throughout this document.
Examples:

- **Overlay menu** — refers to the menu that is displayed by swiping *[DOWN]* from the top of your screen when viewing a data page.
- **Data item** — denotes a specific data parameter, which is transmitted to the performance display either directly from your Axiom multifunction display / chartplotter, or from a compatible device that is connected to the same network.
- **Widget** — refers to the graphical on-screen object displaying data values (e.g. as digits, gauge, graph, etc), and user interface options for each data item.
- **Data page** — refers to the fullscreen page view which displays widgets, and also enables you to customize them.
- **Data category** — refers to the groups which data items are sorted into.

2.4 Document illustrations

Your product and if applicable, its user interface may differ slightly from that shown in the illustrations in this document, depending on product variant and date of manufacture.

All images are provided for illustration purposes only.

2.5 Product documentation

The following documentation is applicable to your product:

Applicable documents

Documentation number	Description
87457	Alpha Series Performance Display Installation Instructions
81415	Alpha Series Performance Display Operation Instructions (this document)
87427	Alpha 7 Performance Display Mounting Template
87428	Alpha 9 Performance Display Mounting Template
88130	Alpha Series Performance Display Mast Bracket Accessory Sheet

These documents are available to download from the following location:

Alpha documents download link
www.bit.ly/alpha-display-docs

2.6 Printed (hardcopy) product manuals

All applicable user documentation for your product is available on our website to view or download free-of-charge. If you would prefer a **printed** (hardcopy) product manual, a Print Shop service is available, enabling you to purchase a high-quality, professionally-printed manual for your product, delivered directly to your door.

Printed manuals are ideal for keeping onboard your vessel, as a useful source of reference whenever you need assistance with your product.

Printed manuals are provided by a third-party (**Lulu Press**).

To order a printed manual, use the Lulu Press website link provided below. The manual will then be printed and delivered to the address you specify. Once an order is placed, it typically takes Lulu Press approximately 5 to 10 working days to print and deliver a printed manual.

Supplier	How to purchase
lulu	1. Click the following link. 2. In the displayed search field, enter the required document number, e.g. *81406* www.bit.ly/rym_printshop

Note:

- Accepted methods of payment for printed manuals are credit cards and PayPal.
- Printed manuals can be shipped worldwide.

2.7 Applicable software version

Product software is updated regularly to add new features and improve existing functionality.

This document has been updated to reflect the following Alpha software version:

Applicable software version:
v3.2.5

Check the website for the latest software:

Alpha software download link
www.bit.ly/rym-alpha-download

2.8 New software features

The following new features have been added to the latest Alpha software.

New software version:
v3.2.5

This list includes *new features* only. It does NOT include software maintenance items, such as bug fixes or performance improvements.

To download the software, and view the complete list of all software updates, including new features, bug fixes, and performance improvements, visit:

Alpha software download link
www.bit.ly/rym-alpha-download

New feature	More information
Support for the display of *Cautions* and *Notices* on an Alpha display from compatible Suzuki engines, when using the Suzuki app on an MFD / chartplotter connected to a compatible Suzuki-supplied gateway or SMG4 display.	Refer to the *Engine Integration* chapter of the LightHouse 4 Operation Instructions document (81406).

CHAPTER 3: NEW FEATURES

CHAPTER CONTENTS

3.1 New features introduction

This chapter details the new features and improvements that have been included in the latest release of the Alpha-Series performance display software.

The contents of this chapter also appears inline with the relevant chapters of this document. You may need to refer to these chapters to get the full context of the feature.

3.2 New software features

The following new features have been added to the latest Alpha software.

New software version:
v3.2.5

This list includes *new features* only. It does NOT include software maintenance items, such as bug fixes or performance improvements.
To download the software, and view the complete list of all software updates, including new features, bug fixes, and performance improvements, visit:

Alpha software download link
www.bit.ly/rym-alpha-download

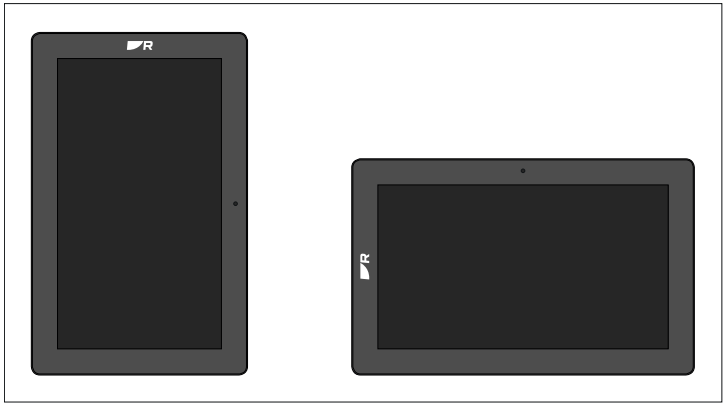
New feature	More information
Support for the display of *Cautions* and *Notices* on an Alpha display from compatible Suzuki engines, when using the Suzuki app on an MFD / chartplotter connected to a compatible Suzuki-supplied gateway or SMG4 display.	Refer to the *Engine Integration* chapter of the LightHouse 4 Operation Instructions document (81406).

CHAPTER 4: GETTING STARTED

CHAPTER CONTENTS

4.1 Product overview

Alpha is a high brightness and high contrast sunlight-viewable touchscreen performance display, optimized for sailing applications.



Available in 2 different screen sizes, the Alpha Series displays can be mounted in portrait or landscape configurations, and in conjunction with Raymarine® Axiom™ multifunction displays / chartplotters and compatible sensors, show key environmental, navigational and vessel data in a fully-customizable format.

With the ability to be daisy-chained in groups of up to 4 displays for simplified mast and deck cabling, Alpha displays are ideal for providing vital performance data at the optimum locations on your vessel.

The performance display has the following key features:

- 7" (*Alpha 7 performance display*) (E70649) or 9" (*Alpha 9 performance display*) (E70650) polarized sunglasses-friendly high brightness and high contrast anti-glare IPS display, with wide viewing angles and accurate touch controls.
- Hydrotough™ display technology with nano-coated, impact-resistant glass repels water, oil, and smudges.
- Ambient light sensor for automatic display brightness adjustment.
- Maximum installation flexibility with flush, surface, or mast mounting options in portrait or landscape orientation. Single or dual display mast brackets available as optional accessories.
- Retro-fit mounting option — fits the mounting hole of an existing Raymarine® instrument, such as ST60, ST60+, i50, i60, i70, or i70s.
- Simplified cabling — a robust single waterproof cable carries both power and data (available separately, in a range of lengths).
- Up to 4 Alpha displays can be connected together in a "daisy chain", for expanded systems.
- Fully customizable data pages and widgets for the following categories: *Battery*, *Boat*, *Depth*, *Distance*, *Engine*, *Environment*, *Fuel*, *GPS*, *Generators*, *Heading*, *Inside environments*, *Navigation*, *Pilot*, *Speed*, *Time*, *Water tanks* and *Wind*.
- Lockable touchscreen display, with remotely-controllable brightness and data page selection via a connected (and required) Raymarine® Axiom™ multifunction display / chartplotter.
- Waterproof to IPx6 and IPx7 (suitable for above or below decks installation).
- 12 / 24 V dc operation.
- Low power consumption:
  - (Alpha 7 performance display) — 10.10 W (maximum) @ 12 V dc / 12.34 W (maximum) @ 24 V dc
  - (Alpha 9 performance display) — 12.27 W (maximum) @ 12 V dc / 12.51 W (maximum) @ 24 V dc

4.2 Multifunction display (MFD) requirement

The Alpha Series performance display is not a standalone product. It MUST be connected to a Raymarine **Axiom-Series** or **Axiom 2-Series** Multifunction display (MFD) / chartplotter. All displays must be running the latest available software versions.

The Alpha Series is compatible with the following Raymarine Multifunction displays / chartplotters:

Compatible Raymarine MFDs	Required MFD software version
Axiom 2-Series: Axiom 2 Pro, Axiom 2 XL	LightHouse 4, v4.7.172 or later
Axiom-Series: Axiom, Axiom+, Axiom Pro, Axiom XL	LightHouse 4, v4.7.172 or later

Alpha software download link
www.bit.ly/rym-alpha-download

LightHouse 4 software download link
www.bit.ly/LH4-download

4.3 Powering on the unit

Once the power cable has been connected and adequate power is being supplied, the performance display will power on.

The performance display will remain on until power is no longer being supplied to the unit. If your display appears to be turned off, *[Power-save mode]* may be active. For more information, refer to: **p.23 — Enabling power-save mode**

4.4 Language selection

When your performance display is switched on for the first time, or, if a factory reset has just occurred, a language selection screen will appear if no multifunction display / chartplotter is detected by your performance display:

To select a language:

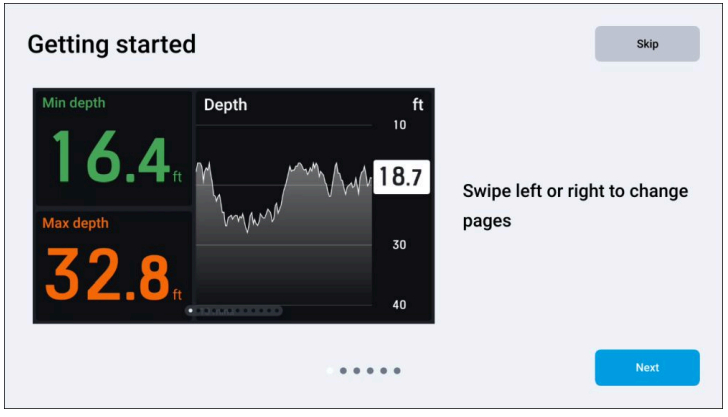
1. (If required) scroll to find the language that you wish to use, tap the language to select it, and then select *[OK]* to continue.

Once *[OK]* has been selected, a series of tutorial pages will appear.

For a list of supported languages, refer to: **p.92 — Language settings**

4.5 Tutorial pages

When your performance display is switched on for the first time, or, if a factory reset has just occurred, a series of tutorial pages will appear:



To complete the tutorial:

1. Proceed with the tutorial by selecting the *[Next]* button located at the bottom right of your screen, until you reach the end of the tutorial.
    a. Optionally, you may skip the tutorial by selecting the *[Skip]* button now, or at any point once the tutorial has been started.
    b. If you want to return to the previous step, select the *[Back]* button located at the bottom left of your screen.
2. Select the *[Done]* button to finish the tutorial.

Once complete, a series of default data pages is displayed.

4.6 Default data pages

The default data pages created on your performance display will reflect the boating activity type which has been selected on your connected multifunction display / chartplotter.

The following default data will be loaded for each of the following multifunction display / chartplotter activities:

Activity	Data pages
[Sailing]	• *[Zoomed wind (landscape only)]* • *[Wind gauge plus data]* • *[Race pre-start]* • *[SailPoint steering guidance]* • *[3D compass]* • *[Single engine]* • *[True wind graph]*
[General], *[Cruising]*, *[First responder]*	• *[3D compass]* • *[Basic navigation]* • *[Power navigation]* • *[Dual engine]*
[Fishing]	• *[Basic navigation]* • *[Multi-data (fish preset category)]* • *[Compass & data (fish preset category)]* • *[Power navigation]* • *[3D compass]* • *[Single engine]*

Note:
Default data pages can be further edited or removed to suit your preference. For more information, refer to the following sections:

- **p.28 — Deleting pages**
- **p.38 — Widget creation and customization**

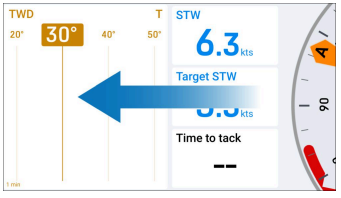
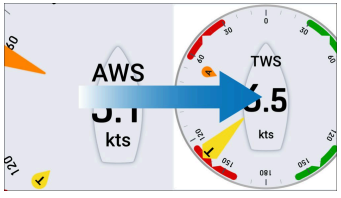
Note:
For more information on the default pages that are configured on your performance display, refer to the following section:
p.31 — Page presets

4.7 Basic controls

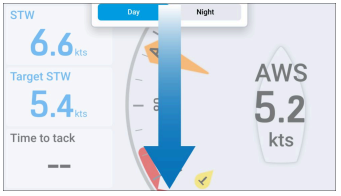
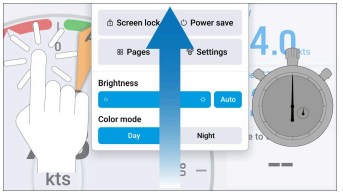
You can switch between data pages by either swiping to the left or right.

Data pages will loop if you reach either the start or end and continue to swipe left or right.

Once your last data page has been reached, swiping to the left or right again will cause the selected page to loop back to the start.

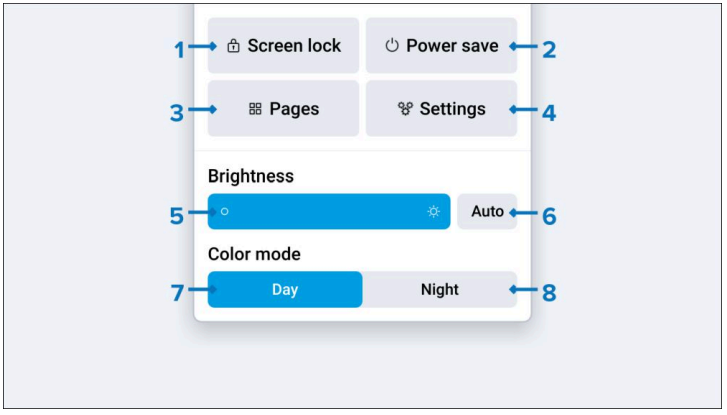
Swipe left (change page)	Swipe right (change page)
	

Each of the display's default pages, user preferences and settings can be customized by selecting one of the options available via the *[Overlay menu]*, which appears when swiping downward from the top edge of your screen. The *[Overlay]* menu and other pop-ups can be dismissed by either swiping upward from the bottom edge of your screen (*[Overlay menu]* only), by tapping outside of the window, or by waiting for an automatic time-out to occur.

Swipe down (open overlay)	Swipe up / tap off / automatic time-out (dismiss overlay)
	

4.8 Overlay options

The following options are available via the *[Overlay menu]*.



1. *[Screen lock]*
2. *[Power save]*
3. *[Pages]*
4. *[Settings]*
5. *[Brightness bar]*
6. *[Auto brightness]*
7. *[Color mode (Day)]*
8. *[Color mode (Night)]*

Note:
While your autopilot is engage and an *[Autopilot control]* preset page exists on your performance display, the *[Screen lock]* and *[Power save]* options will be replaced by a *[Disengage pilot]* option. For more information, refer to: **p.78 — Disengaging the autopilot**

Activating screen lock

The *[Screen lock]* setting may need to be activated in the unlikely event that erroneous touches are detected in severe weather conditions.

To enable the *[Screen lock]* setting:

1. Swipe down from the top edge of the screen when viewing a data page to display the *[Overlay menu]*.
2. Select *[Screen lock]*.

   Once locked, a *[Screen locked]* pop-up will appear.
3. When you wish to re-enable the touchscreen, swipe upward from the bottom of the screen to unlock the device.

   Once unlocked, a *[Screen unlocked]* pop-up will appear.

Note:
This setting will be temporarily disabled in the instance where the *[Autopilot control]* preset page has been created and your autopilot is engaged.

Activating power-save mode

The total amount of power consumed by the performance display can be reduced when it is not in use by activating the *[Power-save]* setting.

To enable *[Power-save]* mode:

1. Swipe down from the top edge of the screen when viewing a data page to display the *[Overlay menu]*.
2. Select *[Power save]*.

   While entering *[Power-save]* mode, a *[Power-save mode activated]* pop-up will appear.
3. After 2 seconds, your performance display will enter *[Power-save]* mode.

To exit *[Power-save]* mode, either tap the screen or attempt to remotely control the performance display via a connected multifunction display / chartplotter.

Note:
If your performance display is set to be part of a shared display group, the *[Power-save]* mode can be simultaneously activated for each compatible device which is assigned to the same group. For more information on how to configure your performance display's display group settings, refer to: **p.84 — Display group settings**

Managing pages

The performance display's data pages can be managed by using the *[Pages]* option, which can be found under: *[Data page view > Overlay menu > Pages]* or by using a pinching-in gesture on the touchscreen when viewing a data page.

For comprehensive page management and creation information, refer to the following section: **p.26 — Page management and creation**

Managing settings

The performance display's system settings can be configured by using the *[Settings]* option, which can be found under: *[Data page view > Overlay menu > Settings]*.

For comprehensive setting configuration information, refer to the following section: **p.83 — Settings**

Display orientation settings

Following a factory reset, your screen orientation will automatically change to *[Landscape]* or *[Portrait]*, based on your installation orientation.

Note:
Your performance display has a separate selection of pages that are available in each screen orientation (i.e. portrait or landscape):

- Any data pages which you have created will be specific to the screen orientation which they were created on.
- When switching between screen orientations, your previous setup will be saved in case you wish to revert back to your original orientation.

To change your screen orientation:

1. Navigate to: *[Data page view > Overlay menu > Settings > Display orientation]*.

2. Select between *[Landscape]* and *[Portrait]*.

Note:
This setting will be temporarily disabled in the instance where the *[Autopilot control]* preset page has been created and your autopilot is engaged.

Adjusting the display's brightness

The performance display's brightness level can be adjusted using the *[Brightness bar]* and *[Auto brightness]* settings.

The *[Brightness bar]* manually adjusts the performance display's brightness level.

The *[Auto brightness]* setting adjusts the performance display's brightness level automatically, based on the surrounding ambient light level. When using the *[Auto brightness]* setting, adjusting the *[Brightness bar]* will add an offset value to the current brightness.

Note:
If your performance display is configured to be part of a shared display group, the *[Brightness bar]* and *[Auto brightness]* setting can be used to simultaneously adjust the brightness level of each compatible device assigned to the same group. For more information on how to configure your performance display's display group settings, refer to: **p.84 — Display group settings**

To change the brightness:

1. When viewing a data page, swipe down from the top edge of the screen to display the *[Overlay menu]*.
2. Manually adjust the screen brightness via the *[Brightness bar]*, or select *[Auto]* if you want the performance display's brightness level to be adjusted automatically, based on the surrounding ambient light level.

Changing color modes

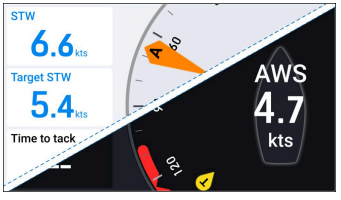
In addition to the default *[Color mode (Day)]* configuration, the performance display can also be configured for night time use via the available *[Color mode (Night)]* setting.

Important:
If you are using the *[Color mode (Night)]* setting at night, be aware that your vision may be compromised when reverting back to either the *[Color mode (Day)]* setting or a display screen with a higher level of brightness.

Note:
The *[Color mode (Day)]* and *[Color mode (Night)]* settings are applied globally to all compatible devices in the system, and will therefore automatically synchronize with any networked multifunction displays / chartplotters and daisy-chained performance displays.

To switch between color modes:

1. When viewing a data page, swipe down from the top edge of the screen to display the *[Overlay menu]*.
2. Select between *[Color mode (Day)]* or *[Color mode (Night)]*.

Color mode (Day)	Color mode (Night)
	

[Color mode (Day)] — the default color mode, which uses standard light (default) or dark colors (intended for day use).
[Color mode (Night)] — uses red text and icons on a darkened background (intended for night use).

Note:
For information on how to configure your *[Color mode (Day)]* color scheme, refer to: **p.84 — Daytime color settings**

4.9 Software updates

Raymarine regularly issues software updates for its products, which provide new and enhanced features and improved performance and usability. It's important to ensure that you have the latest software for your products by regularly checking the Raymarine website for new software releases.

To check for the latest software updates and the software update procedure for your specific product(s), refer to: www.bit.ly/rym-software

Unless otherwise stated, software updates for Raymarine products are performed using a Raymarine MFD / chartplotter.

- Where applicable, you should always backup your user data and settings before performing a software update.
- To update SeaTalk NG products, you must use the datamaster MFD / chartplotter which is physically connected to the SeaTalk NG backbone.
- Ethernet (RayNet) products can be updated from any MFD / chartplotter on the same network as the product to be updated.
- In order to perform a software update, any connected Autopilot or Radar must be switched to Standby.
- The MFD / chartplotter "Check online" feature is only available when connected to the Internet.

Note:
If in doubt as to the correct procedure for updating your product software, refer to your dealer or Raymarine technical support.

Caution: Installing software updates

- The software update process is carried out at your own risk. Before initiating the update process ensure you have backed up any important files.
- Ensure that the product(s) has a reliable power supply and that the update process is not interrupted.
- Damage caused by an incomplete update is not covered by Raymarine warranty.
- By downloading the software update package, you agree to these terms.

CHAPTER 5: PAGE MANAGEMENT AND CREATION

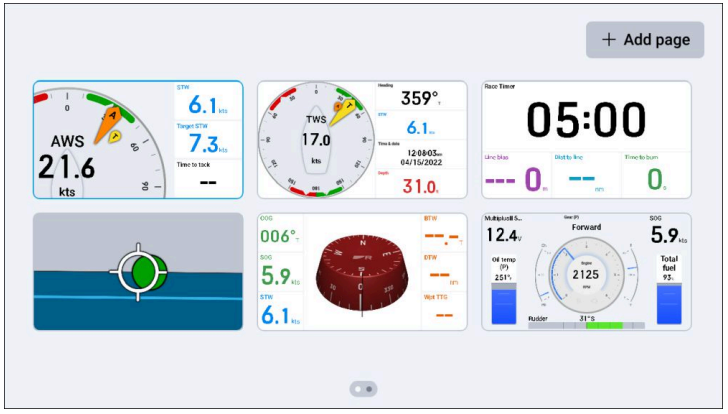
CHAPTER CONTENTS

5.1 Page management overview

The *[Pages]* screen provides a horizontally-scrollable live view of the currently configured data pages.

Data pages can be added, reordered, duplicated, deleted, selected and configured to auto-select via the *[Pages]* screen.

The *[Pages]* screen can be accessed via the *[Overlay menu]* or when you use a pinch-in gesture with the touchscreen, when viewing a data page.



Note:
A live view of the following page preset(s) / widget(s) is not available when viewing the *[Pages]* screen:

- *[Camera]* widgets.
- *[Autopilot control]* page preset.

In the aforementioned instances, the live view is replaced with a corresponding icon and description.

Selecting a data page to view

The *[Pages]* screen shows an overview of all your data pages, allowing you to select a page to view.

To select and display a specific data page:

1. Navigate to: *[Data page view > Overlay menu > Pages]*, or pinch-in when viewing a data page to display the *[Pages]* screen.
2. (If applicable) scroll left and right to find the data page that you wish to view.
3. Select the data page to view it.

Your chosen data page is displayed.

Re-ordering data pages

You can use the *[Pages]* screen to change the order in which your data pages appear.

Note:
The data page layout shown on your *[Pages]* screen is ordered from the top left to the top right, then from the bottom left to the bottom right.

To re-order your data pages:

1. Navigate to: *[Data page view > Overlay menu > Pages]* to display the *[Pages]* screen, or use a pinch-in gesture when viewing a data page.
2. (If applicable) scroll left and right to find the data page that you wish to move in your page sequence.
3. Tap and hold the data page that you wish to move, until it is highlighted.
4. (If applicable) to scroll between pages, drag the data page to the left or right edge of your screen.
5. Drag and drop the data page to your chosen location.

Repeat steps 1-5 if you wish to change the order of multiple data pages.

5.2 Page options

When viewing the *[Pages]* screen, you can tap and hold on a data page to display additional *[Page options]*.

The following options are available:

1. *[Duplicate]*.
2. *[Delete]*.
3. *[Auto-select]*.

Duplicating data pages

You can make a copy of an existing page by using the *[Duplicate]* option.

To *[Duplicate]* a data page:

1. Navigate to: *[Data page view > Overlay menu > Pages]* to display the *[Pages]* screen, or use a pinch-in gesture when viewing a data page.
2. (If applicable) scroll left and right to find the data page that you wish to duplicate.
3. Tap and hold on your data page, until it is highlighted.
4. Once highlighted, release your data page to display the *[Page options]* menu.
5. Select *[Duplicate]* to duplicate your highlighted data page.

Your duplicated data page will appear next to the original data page.

Deleting pages

You can also delete unwanted data pages using the *[Delete]* option.

To *[Delete]* a data page:

1. Navigate to: *[Data page view > Overlay menu > Pages]* to display the *[Pages]* screen, or use a pinch-in gesture when viewing a data page.
2. (If applicable) scroll left and right to find the data page that you wish to delete.
3. Tap and hold on your data page, until it is highlighted.
4. Once highlighted, release your data page to display the *[Page options]* menu.
5. Select *[Delete]* to delete your highlighted data page.

   A confirmation pop-up will appear:

   - Select *[Yes]* to confirm your choice.
   - Select *[No]* to return to the *[Pages]* screen.

Once confirmed, your selected data page will be deleted.

Note:
The *[Autopilot control]* page preset cannot be deleted while your autopilot is engaged.

Auto-selecting pages

You can configure your data pages to be automatically selected once one of the following conditions has been met:

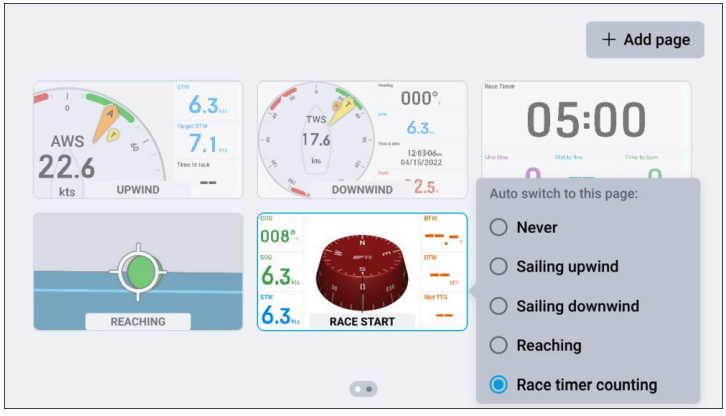
- Never (default).
- Sailing upwind.
- Sailing downwind.
- Reaching.
- Race timer counting.

Note:
In order for the *[Auto select]* page option to appear, your boat activity must be set to *[Sailing]* during your connected MFD's initial startup wizard.

To *[Auto select]* your data page(s):

1. Navigate to: *[Data page view > Overlay menu > Pages]* to display the *[Pages]* screen, or use a pinch-in gesture when viewing a data page.
2. (If applicable) scroll left and right to find the data page that you wish to configure.
3. Tap and hold on your data page, until it is highlighted.
4. Once highlighted, release your data page to display the *[Page options]* menu.
5. Select *[Auto select]*.
6. Select one of the conditions that has to be met in order for your data page to automatically appear onscreen:

Once selected, a blue circle indicator will appear to the left of your chosen condition, and a label will be shown at the bottom of your data page on the *[Pages]* screen.



Note:
Each *[Auto select]* condition can only be assigned to one data page at a time. If you are duplicating a page which has been assigned an *[Auto select]* condition, the condition will not be copied across to the duplicated page.

Note:
This setting will be temporarily disabled while your autopilot is engaged AND the *[Autopilot control]* preset page is shown onscreen as your current data page.

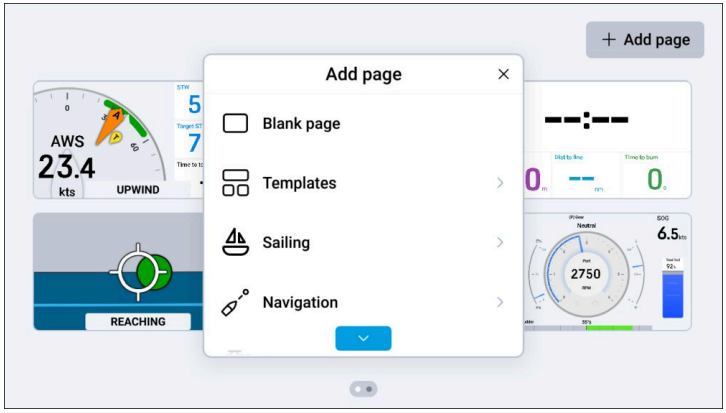
5.3 Page creation

When viewing the *[Pages]* screen, you can view additional page creation options by selecting the *[+ Add page]* button located at the top right corner of the screen.

Creating new pages

The *[+ Add page]* option allows you to create new data pages, based on a series of page presets which can be further customized to suit your preference.

Note:
A maximum of 18 data pages can exist at any one time on a performance display. If your performance display already contains 18 data pages, the *[+ Add page]* option will be disabled.



The following page preset options are available:

- *[Blank page]* — A blank data page with no widgets.
- *[Templates]* — A range of selectable preset data pages which are populated with blank widget cells that vary in number, shape and size.
- *[Navigation]* — A range of selectable preset data pages which are populated with navigation-related widgets.
- *[Sailing]* — A range of selectable preset data pages which are populated with sailing-related widgets.

Note:
In order for the *[Sailing]* page preset option to appear, your boat activity must first be set to either *[General]* or *[Sailing]*, using your connected MFD's initial startup wizard.

- *[Fishing]* — A range of selectable preset data pages which are populated with fishing-related widgets.

Note:
In order for the *[Fishing]* page preset option to appear, your boat activity must first be set to either *[General]*, *[Saltwater fishing]* or *[Freshwater fishing]*, using your connected MFD's initial startup wizard.

- *[Autopilot control]* — A preset data page which is populated with autopilot control related widgets and 3 separate autopilot control modes that can be engaged and disengaged.

Note:
In order for the *[Autopilot control]* page preset option to appear, the *[Control pilot from chartplotter(s)]* toggle must first be enabled on your multifunction display / chartplotter network, by navigating to: *[Homescreen > Settings > Autopilot > Control pilot from chartplotter(s)]*.

- *[Engines]* — A range of selectable preset data pages which are populated with engine-related widgets.

To add a new data page:

1. Navigate to: *[Data page view > Overlay menu > Pages > + Add page]*.
2. (If applicable) vertically scroll up and down to find your chosen preset.
3. Select the page preset that you wish to create.
   i. (If applicable) select a sub-page preset.

Your chosen preset will now be created as a new data page.
For further information on each of the available page presets, refer to: **p.31 — Page presets**

CHAPTER 6: PAGE PRESETS

CHAPTER CONTENTS

6.1 Page presets overview

Page presets are pages pre-configured with a group of widgets displaying useful information and performance data specific to a particular activity. The following section provides a summary for each of the available page preset options, the typical use cases for each preset, and the widgets that are available for each preset.

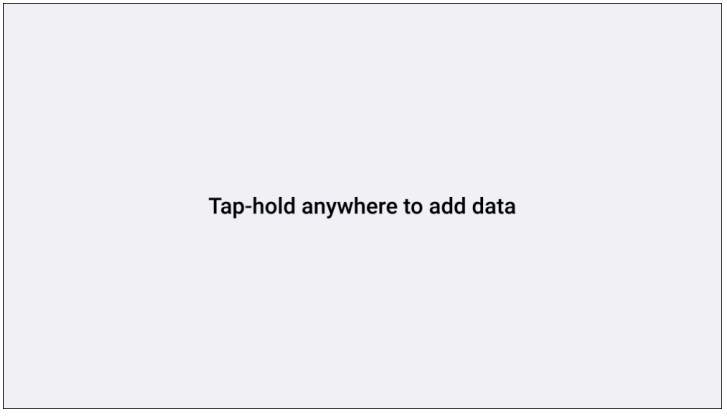
Widget types		
p.32 — Blank page preset	p.33 — Template page presets	p.35 — Navigation page presets
p.34 — Sailing page presets	p.35 — Fishing page presets	p.36 — Autopilot control page preset
p.36 — Engine page presets	p.36 — Motor page presets	

Note:

- For information on how to create pages, refer to the following section: p.29 — Creating new pages
- For information on how to add a widget, refer to the following section: p.39 — Adding widgets

6.2 Blank page preset

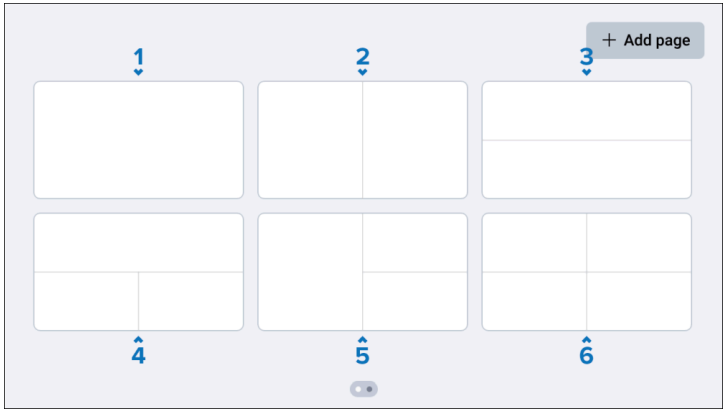
The *[Blank page]* preset is not populated with any widgets and can be fully customized to suit your preference.



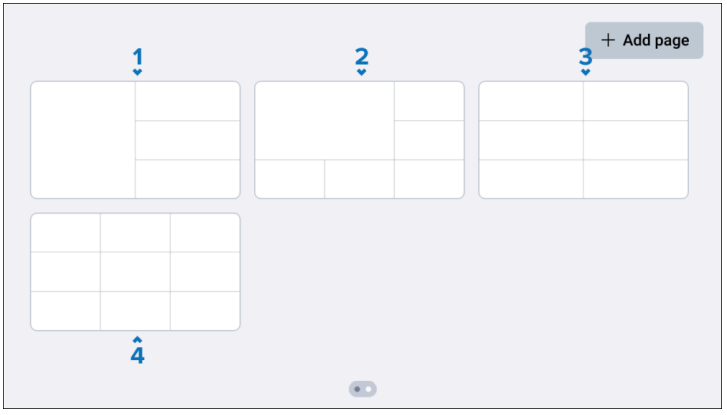
6.3 Template page presets

The *[Template]* page presets are populated with template cells which you can populate with data widgets. This enables you to quickly create a customized data page without having to manually resize and align each of your widgets.

The following *[Template]* preset pages are available:



1. *[Fullscreen]*.
2. *[Vertical split]*.
3. *[Horizontal split]*.
4. *[Horizontal and double-split]*.
5. *[Vertical and double-split]*.
6. *[Quad-split]*.



1. *[Vertical and tri-split]*.
2. *[Corner-split]*.
3. *[2 x 3 split]*.
4. *[3 x 3 split]*.

Once a *[Template]* page preset has been created, you can tap an individual cell to display additional *[Add data]* and *[Delete cell]* options.

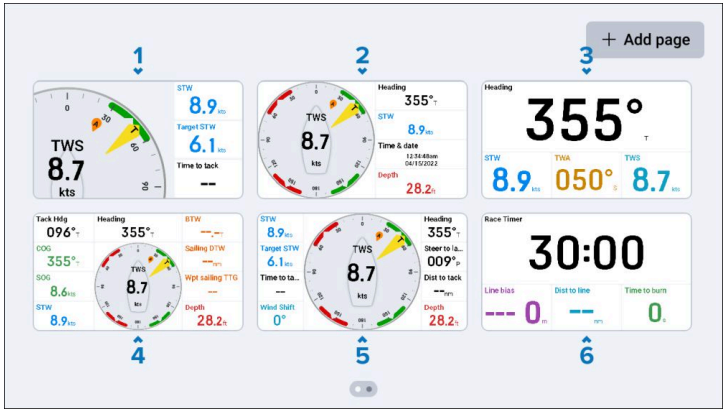
Note:
If a widget cannot fit within the defined space that you have chosen, a *[Can not add widget]* pop-up will appear.

6.4 Sailing page presets

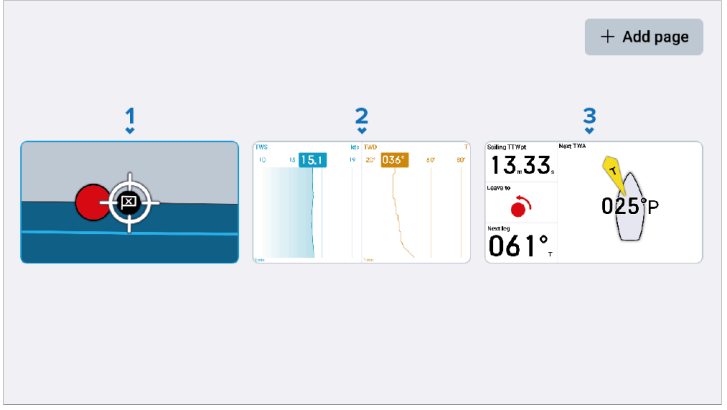
Page presets are pages pre-configured with a group of widgets displaying useful information and performance data specific to a particular activity. The *[Sailing]* page presets are populated with widgets that combine to provide assistance when sailing.

Note:
In order for the *[Sailing]* page preset option to appear, your boat activity must first be set to either *[General]* or *[Sailing]*, using your connected MFD's initial startup wizard.

The following *[Sailing]* page presets are available:



1. *[Zoomed wind gauge (landscape only)]* — Includes 3 sailing related widgets and a *[Dynamic zoomed gauge]* variant of the *[Wind performance gauge]* widget, which moves automatically, focusing on the current wind angle in one of five positions (upwind port, upwind starboard, reaching port, reaching starboard, and downwind). You can tap-hold on the *[Dynamic zoomed gauge]* variant to change it between *[Apparent Wind]* and *[True Wind]*. The *[Dynamic zoomed gauge]* variant widget cannot be edited or deleted. This preset page is only available when your performance display's *[Display orientation]* is set to *[Landscape]*.
2. *[Wind gauge plus data]* — Includes 4 sailing related widgets and an enlarged *[Standard gauge]* variant of the *[Wind performance gauge]* widget.
3. *[Heading plus data]* — Includes 3 sailing related widgets and an enlarged *[Heading]* digits widget.
4. *[Sailing navigation]* — Includes 9 sailing related widgets and a centered *[Standard gauge]* variant of the *[Wind performance gauge]* widget.
5. *[Performance sailing]* — Includes 8 sailing related widgets and a center-enlarged *[Standard gauge]* variant of the *[Wind performance gauge]* widget.
6. *[Race pre-start]* — Includes 3 sailing race start-line related widgets and an enlarged *[Race timer]* digits widget.



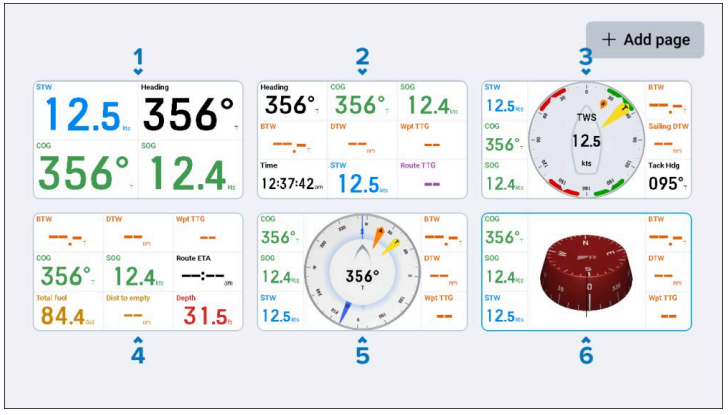
1. *[SailPoint steering guidance]* — Includes 4 sailing related widgets (*[Display orientation (portrait)]* only) and a center-enlarged *[SailPoint]* widget.
2. *[True wind graph]* — Includes an enlarged view of the *[TWS (True Wind Speed)]* graph widget and the *[TWD (True Wind Direction)]* graph widget (*[Display orientation (portrait)]* only).
3. *[Next leg information]* — Includes 3 waypoint and route sailing related widgets and an enlarged *[Next TWA]* widget.

Note:
For more information on the different widget types, refer to the following section: **p.40 — Widget types overview**

6.5 Navigation page presets

Page presets are pages pre-configured with a group of widgets displaying useful information and performance data specific to a particular activity. The *[Navigation]* page presets are populated with widgets that combine to provide assistance when navigating your boat.

The following *[Navigation]* preset pages are available:



1. *[Basic navigation]* — Includes 4 navigation related widgets, which combine to provide a basic level of navigational assistance.
2. *[Advanced navigation]* — Includes 9 navigation related widgets, which combine to provide an advanced level of navigational assistance.
3. *[Wind navigation]* — Includes 6 navigation related widgets and a center-enlarged *[Standard gauge]* variant of the *[Wind performance gauge]* widget.
4. *[Power navigation]* — Includes 9 fuel and navigation related widgets.
5. *[Compass & data]* — Includes 6 navigation related widgets and a center-enlarged *[Standard compass]* widget.
6. *[3D compass]* — Includes 6 navigation related widgets and a center-enlarged *[3D compass]* widget.

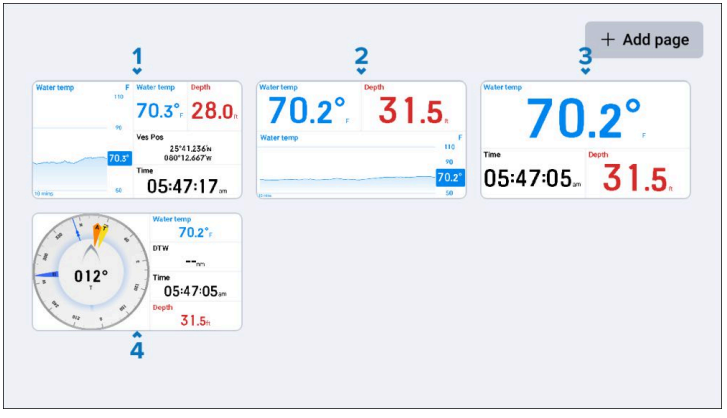
Note:
For more information on the different widget types, refer to the following section: **p.40 — Widget types overview**

6.6 Fishing page presets

Page presets are pages pre-configured with a group of widgets displaying useful information and performance data specific to a particular activity. The *[Fishing]* page presets are populated with widgets that combine to provide assistance when fishing.

Note:
In order for the *[Fishing]* page preset option to appear, your boat activity must first be set to either *[General]*, *[Saltwater fishing]* or *[Freshwater fishing]*, using your connected MFD's initial startup wizard.

The following *[Fishing]* page presets are available:



1. *[Multi-data]* — Includes 4 fishing related widgets and an enlarged *[Water temp]* graph widget.
2. *[Water temperature graph & depth]* — Includes 3 fishing related widgets and an enlarged *[Water temp]* graph widget.
3. *[Water temperature, time & depth]* — Includes 3 fishing related widgets and an enlarged *[Water temp]* digits widget.

4. *[Compass & data]* — Includes 4 fishing related widgets and an enlarged *[Standard compass]* widget.

Note:
For more information on the different widget types, refer to the following section: **p.40 — Widget types overview**

6.7 Autopilot control page preset

Page presets are pages pre-configured with a group of widgets displaying useful information and performance data specific to a particular activity. The *[Autopilot control]* page preset is populated with widgets and functions that combine to provide seamless autopilot integration with your performance display.

Note:
In order for the *[Autopilot control]* page preset option to appear, the *[Control pilot from chartplotter(s)]* toggle must first be enabled on your multifunction display / chartplotter network, by navigating to: *[Homescreen > Settings > Autopilot > Control pilot from chartplotter(s)]*.

For more autopilot integration information, refer to the following section: **p.66 —** Autopilot control overview

6.8 Engine page presets

Page presets are pages pre-configured with a group of widgets displaying useful information and performance data specific to a particular activity. The *[Engine]* page presets are populated with widgets that combine to provide information related to your vessel's engine status.

The following *[Engine]* preset pages are available:

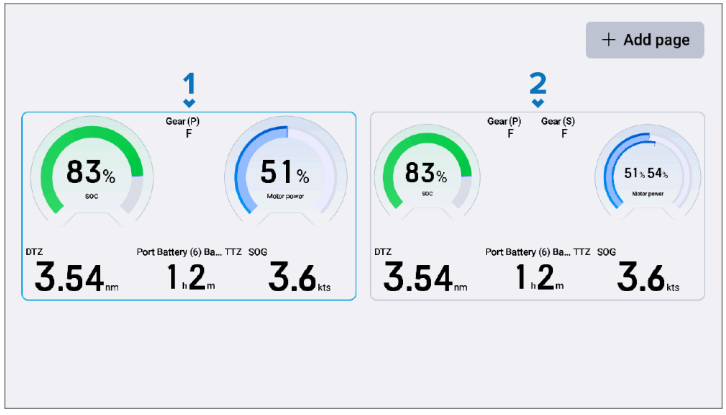
1. *[Single engine]* — Includes 6 engine related widgets and a center-enlarged *[Engine combo gauge]* widget.
2. *[Dual engine]* — Includes 10 engine related widgets and 2 center-enlarged *[Engine combo gauge]* widgets.

Note:
For more information on the different widget types, refer to the following section: **p.40 — Widget types overview**

6.9 Motor page presets

Page presets are pages pre-configured with a group of widgets displaying useful information and performance data specific to a particular activity. The *[Motor]* page presets are populated with widgets that combine to provide information related to your vessel's motor status.

The following *[Motor]* preset pages are available:



1. *[Single motor]* — Includes 6 motor related widgets which combine to provide information on a single motor.
2. *[Dual motor]* — Includes 6 motor related widgets which combine to provide information on multiple motors.

Note:
For more information on the different widget types, refer to the following section: **p.40 — Widget types overview**

CHAPTER 7: WIDGET CREATION AND CUSTOMIZATION

CHAPTER CONTENTS

7.1 Adding widgets

Depending on the space available, you may be able to add one or more widgets to your page.

Note:
For information on how to create a new data page, refer to:
p.29 — Page creation

Note:
Before adding a widget to your page, ensure that there is sufficient space available. If a widget cannot fit into the defined space that you have selected then it will be greyed out.

To add a widget:

1. Either:
   - Tap-hold in the space available and select *[Add data]* when prompted.
   - Alternatively, if you are viewing a *[Template]* page preset, tap one of the widget template cells that are available onscreen, and select *[Add data]*.

   A *[Select data category]* menu will appear.
2. Then, **either**:
   - Select the *[Search bar]* located at the top of the *[Select data category]* menu in order to directly search for a specific data item. Once pressed, an onscreen keyboard appears.
     – Enter the name of the data item that you wish to create a widget for and select from the list of results available.
     – Select the type of widget that you wish to create.

Note:
If two or more data items exist with the same name but they apply to different data categories (e.g. the *[Oil temperature]* data item name is found within both the *[Engine]* and *[Generator]* data categories), then the applicable data category will also appear alongside each name instance.

   - Alternatively, browse the *[Select data category]* menu and select a category to view the full range of related data items that are available.
     – (If required) select the battery, engine, fuel tank, generator or water tank that you wish to create a widget for.
     – Browse the data item list and select the type of data that you wish to create a widget for.
     – Select the type of widget that you wish to create.

Your widget will now appear onscreen in the space that you previously selected.

Note:

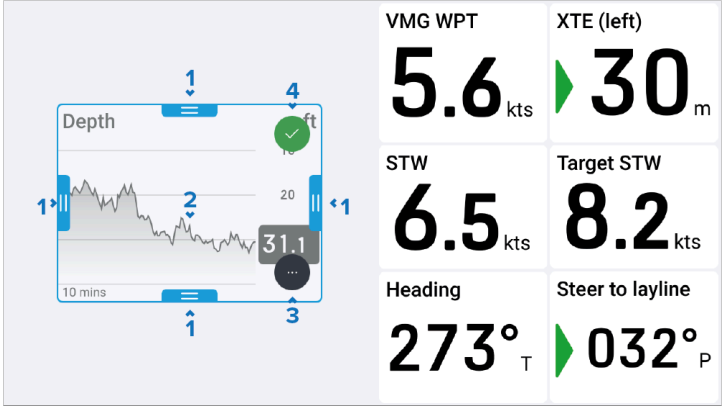
• The unit of measurement shown on each widget is dependent on the *[Units]* settings that have been configured on your connected multifunction display / chartplotter. For more information, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).

• For information on which data items and widgets are available, refer to: **p.52 — Data item and widget overview**

7.2 Widget customization

Each of your widgets can be independently moved and resized to suit your preference.

The following customization options will appear when performing a tap-hold gesture on a widget:



1. *[Scale handle]* — Tap, hold and drag inward or outward to either increase or decrease the size of your widget in the direction of the selected handle.
2. *[Move widget]* — Tap and hold inside your widget, then drag the widget to a new location.
3. *[More options]* — Tap to show more options related to the widget type that you have selected. For more information on each of the widget type options, refer to: **p.40 — Widget types overview**
4. *[Accept]* — Tap to confirm your changes.

Note:

• If the selected widget is scaled within close proximity to another widget, it will automatically snap into alignment.

• Any information displayed in a widget will automatically scale to match any dimension changes.

7.3 Widget types overview

The following section will outline which types of widgets are available on your performance display:

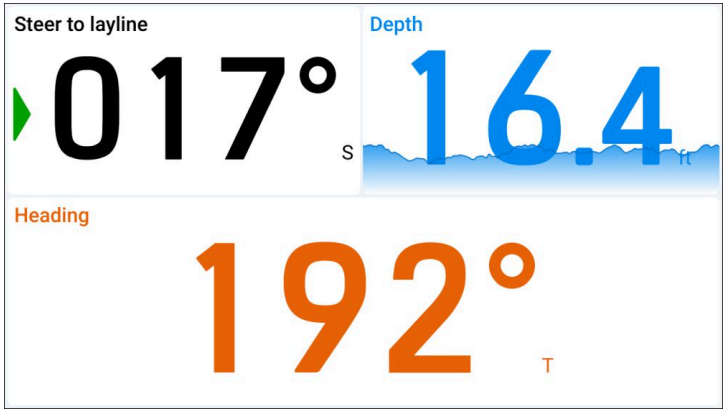
Widget types		
p.41 — Digital data widgets	**p.42 — Gauge widgets**	**p.43 — Graph widgets**
p.44 — Level widgets	**p.44 — Trim tabs widget**	**p.45 — Camera widget**
p.45 — Bar widget	**p.46 — Engine combo gauge**	**p.46 — Standard compass**
p.47 — 3D compass widget	**p.48 — Waypoint rounding (leave to) widget**	**p.48 — Wind performance gauge (Standard gauge)**
p.49 — Wind performance gauge (Dynamic zoomed gauge)	**p.50 — SailPoint**	**p.51 — Next Leg TWA widget**

Note:
For information on which widgets are supported for each of the data items available, refer to the following section:
p.52 — Data item and widget overview

Digital data widgets

The *[Digits]* widget option provides a clear, and easy to understand numerical view of the data item that you have selected, which can be further customized to suit your preference.

Example: Digit widgets



Digit widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Text colour]* — opens a menu with selectable color palettes, which can be used to change the selected widget's color. The same color can be applied to other versions of the same data item widget type by using the *[Apply to all widget data]* tick box located underneath the color palettes.
- *[Title text]* — opens a menu with selectable widget title size options, which can be used to change the selected widget's title size between: *[Large]*, *[Medium]* and *[Small]*.
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.
- *[Show mini-graph (toggle)]* — displays a miniature graph at the bottom of the selected widget, which shows the value's trend over time for select data items.

Note:
A maximum of 10 *[Show mini-graph]* options can be toggled *[On]* per performance display.

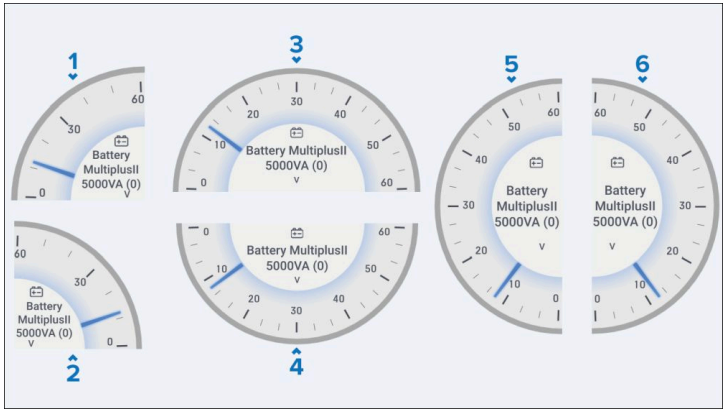
- *[Mini-graph scale]* — changes the *[Mini-graph]* time scale for the selected widget between: *[1 min]*, *[10 mins]*, *[1 hour]*, *[12 hours]*, *[24 hours]*.
- *[Show steering arrows (toggle)]* — displays steering guidance arrows for the following widgets, which indicate:
  - For *[XTE (Cross track error)]*, the arrow indicates the direction you must steer to return the boat to the route line.
  - For *[Steer to layline]*, the arrow indicates the direction you must steer in order to match the wind angle with the closest target wind angle (as defined by the *[Sail performance]* setting enabled on your multifunction display).
  - For *[Course to steer]*, the arrow indicates the direction you must steer in order to match the boat's heading to the target waypoint *[CTS (Course to Steer)]*.

Note:
For more information on how to edit your widgets, refer to the following section: **p.39 — Widget customization**

Gauge widgets

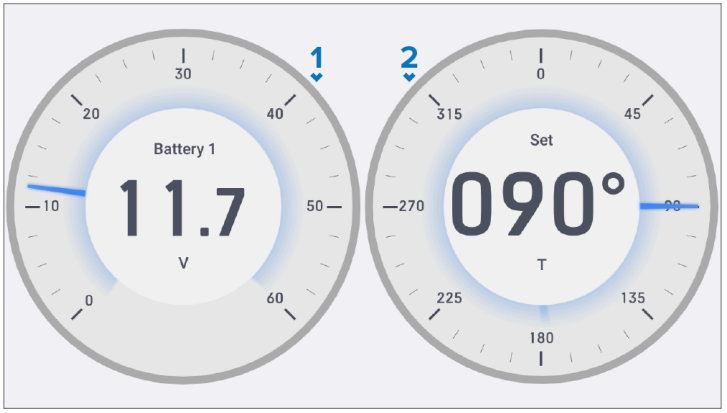
The *[Gauge]* widget options provide a selection of graphical 90° (left / right), 180° (up / down / left / right), 270° and 360° data item indicator views, which can be further moved and resized to suit your preference.

Example: Gauge widgets 1



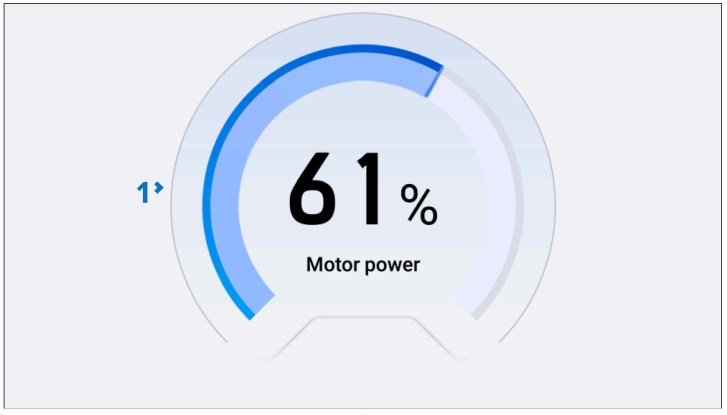
1. *[90° Gauge left]*
2. *[90° Gauge right]*
3. *[180° Gauge up]*
4. *[180° Gauge down]*
5. *[180° Gauge left]*
6. *[180° Gauge right]*

Example: Gauge widgets 2



1. *[270° Gauge]*
2. *[360° Gauge]*

Example: Gauge widgets 3



1. (1) *[270° Gauge]*

Note:
(1) This *[Gauge]* widget visual appearance is only available for select data items found under the *[Motor]* data category. For more information, refer to: **p.59 — Motor data**

Gauge widget options

You can tap-hold a widget and select *[...]* to display additional widget options which are specific to the selected widget type.

The following widget options are available:

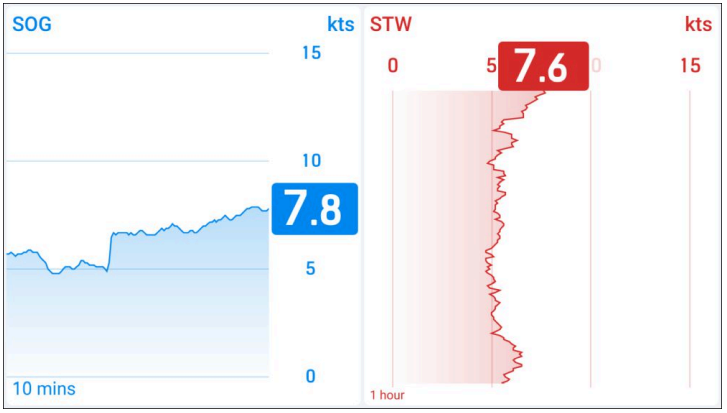
- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to the following section: **p.39 — Widget customization**

Graph widgets

The *[Graph (horizontal)]* and *[Graph (vertical)]* widget options provide two graphical views which automatically update to show the changing values and trends over time for the widget that you have selected. Both the *[Graph (horizontal)]* and *[Graph (vertical]* widgets can be further customized to suit your preference.

Example: Graph widgets (horizontal and vertical)



Graph widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

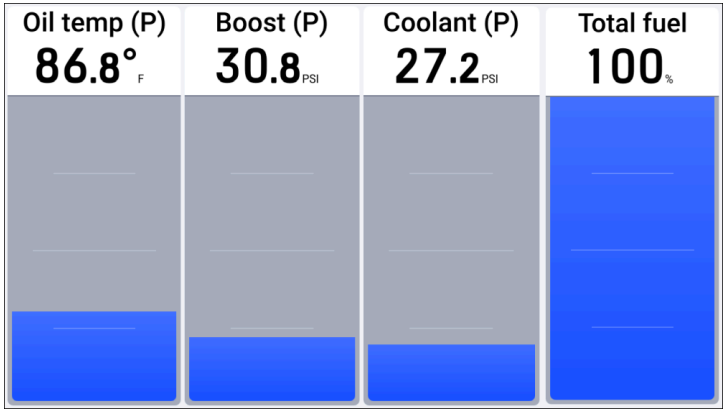
- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Graph colour]* — opens a menu with selectable color palettes, which can be used to change the selected widget's color. The same color can be applied to duplicate versions of the same widget, by using the *[Apply to all widget graphs]* tick box located underneath the color palettes.
- *[Time scale]* — changes the selected widget's time scale between: *[1 min]*, *[10 mins]*, *[1 hour]*, *[12 hours]*, *[24 hours]*.
- *[Title text]* — opens a menu with widget title size options, which can be used to change the selected widget's title size between: *[Large]*, *[Medium]* and *[Small]*.
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to: **p.39 — Widget customization**

Level widgets

The *[Level]* widget option provides a vertical bar indicator which raises or lowers to reflect the live state of the data item that you have selected. The *[Level]* widget can be further moved and resized to suit your preference.

Example: Level widgets



Level widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

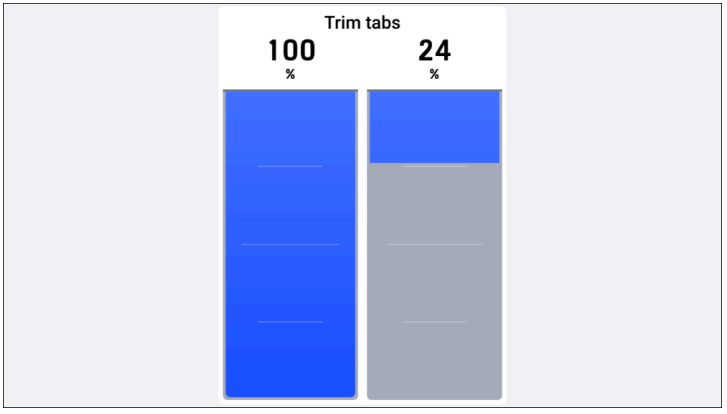
- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

Trim tabs widget

The *[Trim tabs]* graphical widget option provides a dual vertical *[level]* widget view of your boat's trim tab positions: port (indicated by the left column) and starboard (indicated by the right column) .

Example: Trim tabs widget



Note:
In order to display the graphical *[Trim tabs]* widget, compatible hardware must be connected to your multifunction display network.

Trim tabs widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

Camera widget

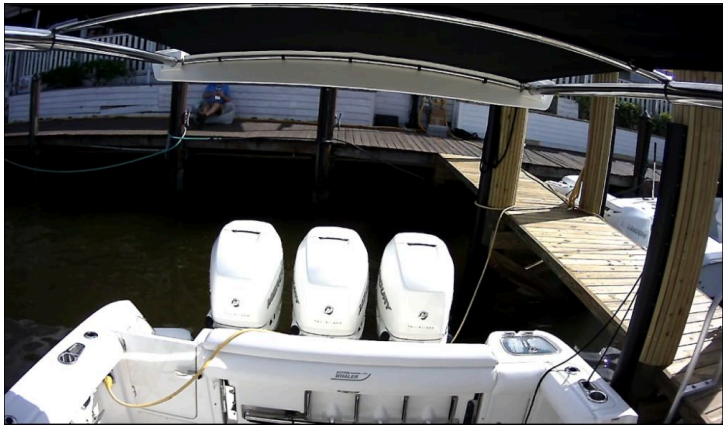
The *[Camera]* widget option provides a live camera feed from a compatible IP camera connected to your multifunction display / chartplotter network. The *[Camera]* widget can be further customized to suit your preference.

Note:

• A maximum of 4 *[Camera]* widgets can be created per data page.

• Pan and tilt camera controls cannot be used via the *[Camera]* widget on your performance display. In order to pan or tilt your camera, a compatible multifunction display / chartplotter or Joystick Control Unit (JCU) must be used.

Example: Camera widget (fullscreen)



Camera widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

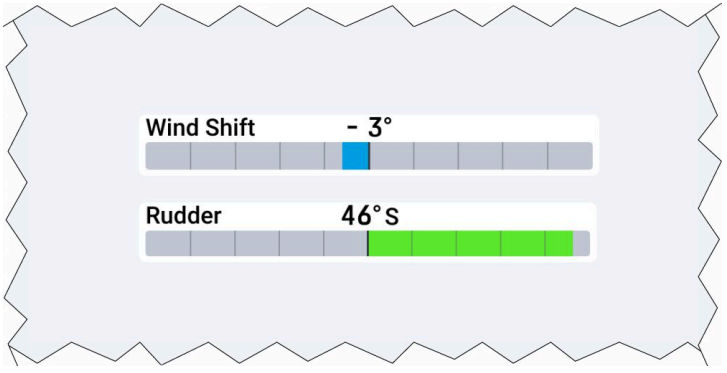
- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Camera feed]* — changes the selected camera feed between *[Visible light]* and *[Thermal]*. The *[Camera feed]* option is only available if both feed types are supported by your camera.
- *[Mirror image]* — toggles the selected camera image either *[On]* (so that the image is mirrored) or *[Off]* (so that the image is not mirrored). The *[Mirror image]* option applies to all instances of the same camera image on your display.
- *[Delete]* — deletes the selected widget.
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

Bar widget

The *[Bar]* widget option provides a horizontal bar indicator which moves left (port) or right (starboard) to reflect the live state of the data item that you have selected. The *[Bar]* widget can be further moved and resized to suit your preference.

Example: Bar widgets



Bar widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

Engine combo gauge

The *[Engine combo gauge]* widget combines a dynamic graphical RPM 270° gauge with oil pressure, engine temperature and other status indicators.

Example: Engine combo gauge

1. **Oil pressure indicator** — Current engine oil pressure indication.
2. **RPM indicator** — Graphical representation of engine RPM.
3. **Engine name** — As defined on multifunction display / chartplotter.
4. **RPM** — Digital RPM value.
5. **Maintenance indicator** — Illuminates when engine maintenance is required.
6. **Engine check** — Illuminates when an engine fault is detected.
7. **Coolant temperature** — Current engine coolant temperature indication.

Engine combo gauge widget options

You can tap-hold a widget and select *[...]* to display additional widget options which are specific to the selected widget type.

The following widget options are available:

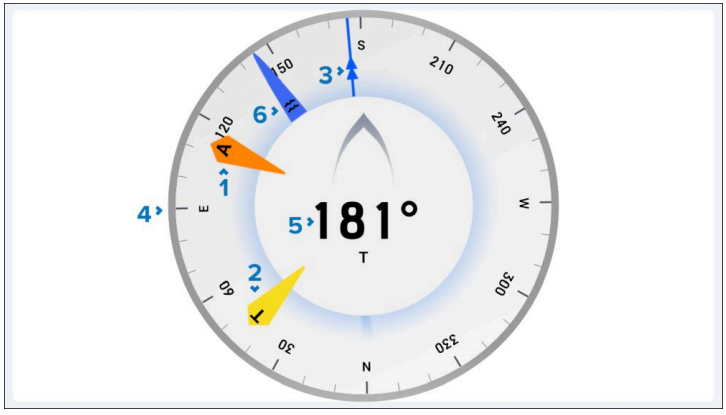
- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to the following section: **p.39 — Widget customization**

Standard compass

The *[Standard compass]* widget combines a dynamic graphical vessel heading gauge with tide direction, AWD, TWD and COG indicators.

Example: Standard compass



1. **AWD indicator** — Apparent Wind Direction.
2. **TWD indicator** — True Wind Direction.
3. **COG indicator** — Course Over Ground.
4. **Compass dial** — The compass dial will rotate to provide indication of heading.
5. **Heading** — Vessel heading.
6. **Tide indicator** — Tide direction.

Standard compass widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

3D compass widget

The *[3D compass]* widget option provides a digital view of a wet compass which responds dynamically to your boat's magnetic heading and movement. The *[3D compass]* widget can be further customized to suit your preference.

Note:
A maximum of 2 *[3D compass]* widgets can be created per performance display. If a third *[3D compass]* widget is created, a *[Limit reached]* pop-up will appear.

Example: 3D compass widget

3D compass widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.

- *[Compass colour]* — opens a menu with selectable color palettes, which can be used to change the selected widget's color between red, blue, or black / white, depending on your performance display's *[Daytime colour]* settings. For more *[Daytime colour]* setting information, refer to the following section: **p.84 — Daytime color settings**
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

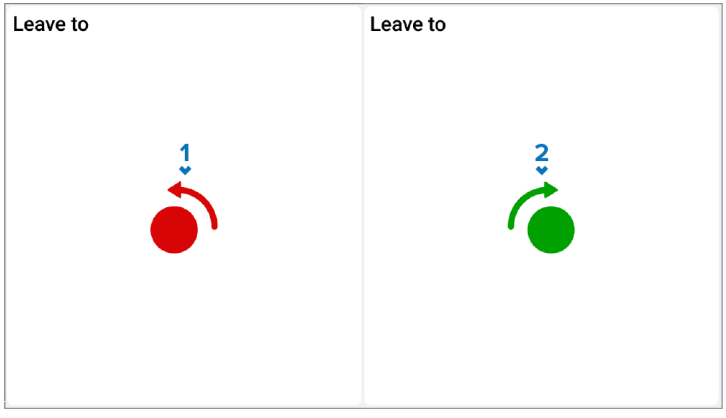
Note:
For more information on how to edit your widgets, refer to the following section: **p.39 — Widget customization**

Waypoint rounding (leave to) widget

The *[Waypoint rounding (leave to)]* graphical widget option provides a visual indicator for the rounding direction that has been assigned to your current waypoint via your multifunction display / chartplotter.

A rounding direction can be assigned to each of your multifunction display / chartplotter waypoints by navigating to: *[Homescreen > My data > Routes > Select a route > View route plan > Waypoint > Rounding direction]*.

Example: Waypoint rounding (leave to)



1. **Waypoint rounding indicator (port)** — Indicates that the boat must leave the mark to port.
2. **Waypoint rounding indicator (starboard)** — Indicates that the boat must leave the mark to starboard.

Waypoint rounding (leave to) widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to: **p.39 — Widget customization**

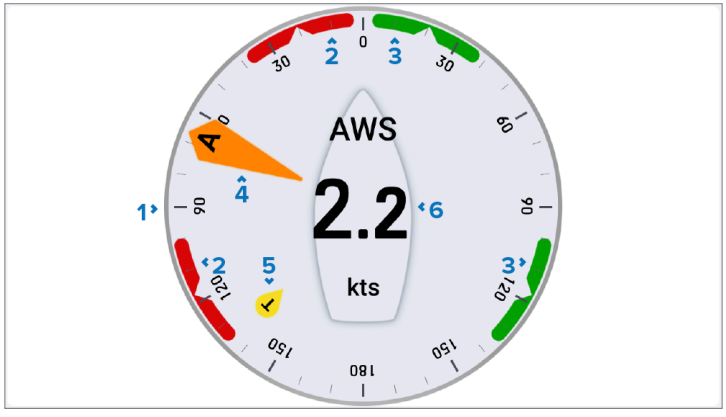
Wind performance gauge (Standard gauge)

The *[Standard gauge]* variant of the *[Wind performance gauge]* widget shows both measured and target wind angles, with a central wind speed value.

Note:
Target wind angles shown on the *[Wind performance gauge]* widget are derived from your multifunction display's *[Sail performance]* setting. The *[Sail performance]* setting can be configured from the *[Boat details]* menu: *[Homescreen > Boat details > Sail performance]*. For more information on the available *[Polar]* and *[Fixed angles]* options, refer to: LightHouse™ 4 Advanced Operation Instructions (**81406**).

Note:
This widget is only available when the boating activity is first set to *[Sailing]*, using your connected multifunction display / chartplotter's initial startup wizard.

Example: Wind performance gauge (Standard gauge) — AWS view



1. **Angle gauge** — The rotation of the angle gauge remains fixed and the indicators move around the gauge to indicate changes to direction / angle.
2. **Port wind angle target** — Align the larger wind indicator (AWA or TWA) with the notch to optimize Velocity Made Good (VMG) when sailing upwind or downwind.
3. **Starboard wind angle target** — Align the larger wind indicator (AWA or TWA) with the notch to optimize Velocty Made Good (VMG) when sailing upwind or downwind.
4. **AWA indicator** — Apparent Wind Angle.
5. **TWA indicator** — True Wind Angle.
6. **Apparent wind speed** / **True wind speed** — this changes based on the selected widget function.

Wind performance gauge (Standard gauge) widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Show background]* — toggles the selected widget's background either *[On]* (to display a shaded background) or *[Off]* (to display no shaded background).
- *[Wind]* — changes the selected widget's view between *[Apparent Wind]* and *[True Wind]*.
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

Wind performance gauge (Dynamic zoomed gauge)

The *[Dynamic zoomed gauge]* variant of the *[Wind performance gauge]* widget dynamically adjusts to one of five different positions as the wind angle changes.

The *[Dynamic zoomed gauge]* variant will adjust to show one of the following positions:

1. Upwind Port (currently shown).
2. Upwind Starboard.
3. Reaching Port.
4. Reaching Starboard.
5. Downwind Port.
6. Downwind Starboard.

Note:
Target wind angles shown on the *[Wind performance gauge]* widget are derived from your multifunction display's *[Sail performance]* setting. The *[Sail performance]* setting can be configured from the *[Boat details]* menu: *[Homescreen > Boat details > Sail performance]*. For more information on the available *[Polar]* and *[Fixed angles]* options, refer to: LightHouse™ 4 Advanced Operation Instructions (**81406**).

Note:
This widget is only available when the boating activity is first set to *[Sailing]*, using your connected multifunction display / chartplotter's initial startup wizard.

Example: Wind performance gauge (Dynamic zoomed gauge) — AWS view

1. **Angle gauge** — The rotation of the angle gauge remains fixed and the indicators move around the gauge to indicate changes to direction / angle.
2. **Port wind angle target** — Align the larger wind indicator (AWA or TWA) with the notch to optimize Velocity Made Good (VMG) when sailing upwind (currently shown) or downwind.
3. **Starboard wind angle target** — Align the larger wind indicator (AWA or TWA) with the notch to optimize Velocity Made Good (VMG) when sailing upwind or downwind.
4. **AWA indicator** — Apparent Wind Angle.
5. **TWA indicator** — True Wind Angle.
6. **Apparent wind speed** / **True wind speed** — this changes based on the selected widget function.

Wind performance gauge (Dynamic zoomed gauge) widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Wind]* — changes the selected widget's view between *[Apparent Wind]* and *[True Wind]*.
- *[Delete]* — deletes the selected widget.
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

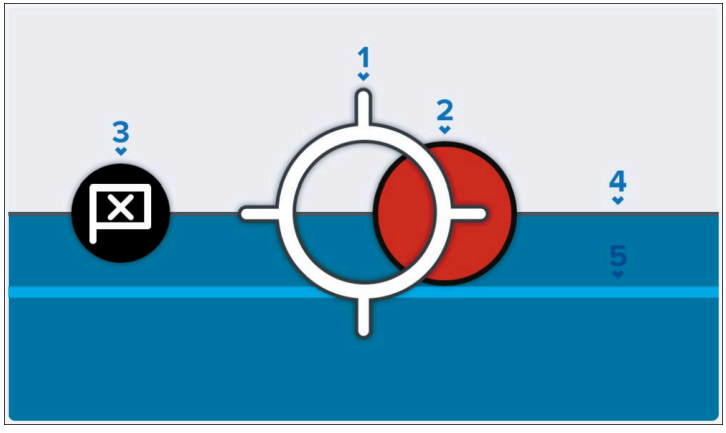
SailPoint

The *[SailPoint]* widget includes steering markers and a crosshair, which provide a visual reference of the best target wind angle, to assist you in achieving your vessel's maximum upwind or downwind Velocity Made Good (VMG) / waypoint Course-to-Steer (CTS). SailPoint also includes a dynamic polar speed indicator which moves up or down to show the percentage polar performance versus the target polar vessel speed for the current wind speed and angle. When the indicator is level with the bottom of the widget, the percentage polar performance is at 60%. When the indicator is level with the centre-line, the target polar vessel speed has been reached.

Note:
This widget is only available when the boating activity is set to *[Sailing]*, when completing the initial startup wizard for your connected multifunction display / chartplotter.

Note:
The widget is set to self-correct and counteract the performance display's tilt angle. All screen objects referenced below will rotate around the center of the crosshair, so that each element remains vertically level with the horizon.

Example: SailPoint widget



1. **Heading crosshair** — Your boat's heading is represented by a central crosshair. When a marker is within the crosshair, the boat is considered to be on target to achieve the best upwind and downwind Velocity Made Good (VMG) / waypoint Course-to-Steer (CTS), according to your multifunction display / chartplotter's *[Fixed Angles]* / *[Polar]* layline configuration. For more information, refer to the "*Chart app – racing mode*" chapter in the LightHouse™ 4 Advanced Operation Instructions (**81406**).
2. **Steering marker** — Indicates the optimum port (red marker as illustrated) or starboard (green marker) tack steering angle (upwind and downwind).
3. **Waypoint marker** — Indicates the optimum waypoint Course-to-Steer (CTS).
4. **Target speed** — Target polar boat speed for the current wind speed and angle.
5. **Polar performance** — Current polar boat performance.

SailPoint widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

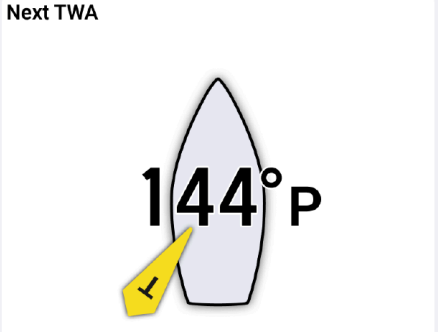
- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Delete]* — deletes the selected widget.
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

Next Leg TWA widget

The *[Next Leg TWA]* graphical widget option provides a calculation of the TWA during the next leg of your current route.

Example: Next Leg TWA



Note:
If a “next leg” does not exist on your current route (e.g. your boat is already on the final leg of the current route or the boat is not in active navigation), the value shown will be replaced with a series of dashes.

Next Leg TWA widget options

You can tap-hold a widget and select *[...]* to display additional widget options specific to the selected widget type.

The following widget options are available:

- *[Edit data]* — replaces the selected widget with another chosen from the *[Select data category]* sub-menus. The new widget will adopt the same position and dimensions as the previous widget.
- *[Title text]* — opens a menu with selectable widget title size options, which can be used to change the selected widget’s title size between: *[Large]*, *[Medium]* and *[Small]*.
- *[Delete]* — deletes the selected widget.
- *[Reset page (Autopilot control only)]* — resets the data page to the default widget layout. This widget option is only available while viewing the *[Autopilot control]* page preset.

Note:
For more information on how to edit your widgets, refer to:
p.39 — Widget customization

7.4 Data item and widget overview

Network data shared from your connected multifunction display / chartplotter can be displayed in customizable widgets on your performance display.

The available data items that can be displayed in the various widget types are organized into data categories.

The following section outlines the available data items and customizable widget types available for each data category:

Data categories		
p.52 — Battery data	**p.53 — Boat data**	**p.53 — Camera video feeds**
p.53 — Depth data	**p.53 — Distance data**	**p.54 — Engine data**
p.55 — Environment data	**p.56 — Fuel data**	**p.57 — Generator data**
p.57 — GPS data	**p.58 — Heading data**	**p.58 — Inside environment data**
p.59 — Motor data	**p.59 — Navigation data**	**p.60 — Pilot data**
p.60 — Speed data	**p.61 — Time data**	**p.62 — Water tank data**
p.63 — Wind data		

Note:
For a full list of PGNs corresponding to the data items referenced, refer to the LightHouse 4 Advanced Operation Instructions (**81406**).

Battery data

The *[Battery]* data category includes items related to your battery status.

The following data items are available in the *[Battery]* data category:

Data items	Widget types available
• *[Battery voltage]* • *[Battery current]* • *[State of charge]* • *[Battery temperature]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*
• *[Time till zero charge]* • *[Distance to zero charge]* (1) • *[Total time to zero]* (1) • *[Total state of charge]* (1)	*[Digits]*

Note:
(1) This data item is only available if an e-propulsion battery is connected to your system.

Boat data

In order for boat data to be displayed on your performance display, a compatible sensor must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Boat]* data category:

Data items	Widget types available
[Rudder angle]	• *[Digits]* • *[180° gauge (up / down)]* • *[Rudder bar]*
• *[Rate of turn]* • *[Roll]*	• *[Digits]* • *[180° gauge (up / down)]*
[Pitch]	• *[Digits]* • *[180° gauge (left / right)]*
[Trim tabs]	• *[Digits]* • *[Trim tabs]*
[Mast rotation] (2)	*[Digits]*

Note:
(2) This data item is only available when the boating activity is set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard.

Camera video feeds

In order for a camera video feed to be displayed on your performance display, a compatible IP camera must be connected to your multifunction display / chartplotter network.

Each data item available in the *[Cameras]* data category will be named according to the camera video feeds available on your connected multifunction display / chartplotter.

Depth data

In order for depth data to be displayed on your performance display, a compatible sonar transducer must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Depth]* data category:

Data items	Widget types available
[Depth]	• *[Digits]* • *[Graph (horizontal)]* • *[Graph (vertical)]*
• *[Min depth]* • *[Max depth]*	*[Digits]*

Distance data

In order for distance data to be displayed on your performance display, a compatible speed transducer and / or GNSS receiver must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Distance]* data category:

Data items	Widget types available
• *[Log]* • *[Trip]* • *[Ground log]* • *[Trip (day)]* • *[Trip (month)]* • *[Trip (season)]* • *[Distance to tack]* **(2)** • *[Trip (manual)]* • *[Distance to start line]* **(2)** • *[Line bias]* **(2)** • *[Distance to empty]* • *[DMG (Distance made good)]* • *[DTW (Distance to waypoint)]* • *[Sailing DTW]* • *[XTE (Cross track error)]*	*[Digits]*

Note:
(2) This data item is only available when the boating activity is set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard.

Engine data

In order for engine data to be displayed on your performance display, an engine management system must be connected to your multifunction display / chartplotter network, and the *[Propulsion system]* setting must be set to *[Combustion]* during your multifunction display / chartplotter's initial startup wizard. Depending on your engine manufacturer, a compatible engine interface or gateway may be required.

The number of engines that are detected by your performance display is determined by the number of engines specified under your multifunction display / chartplotter's *[Boat details]* settings menu: *[Homescreen > Settings > Boat details > Num of engines]*. For more information on how to configure your multifunction display / chartplotter's *[Boat details]* settings menu, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).

The following data items are available in the *[Engine]* data category:

Data items	Widget types available
—	*[Engine combo gauge]*
[Alternator]	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]*
• *[Exhaust gas temperature 1]* • *[Exhaust gas temperature 2]* • *[Exhaust gas temperature 3]* • *[Boost pressure]* • *[Coolant pressure]* • *[Coolant temperature]* • *[Engine RPM]* • *[Oil pressure]* • *[Oil temperature]* • *[Transmission oil pressure]* • *[Fuel flow]* • *[Fuel flow (instantaneous)]* • *[Fuel flow (average)]* • *[Fuel pressure]* • *[Transmission oil temperature]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*

Data items	Widget types available
[Jack plate position]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*
[Engine load]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]*
[Tilt position]	• *[Digits]* • *[Level]*
• *[Engine trip]* • *[Engine hours]* • *[Gear]*	*[Digits]*

Environment data

In order for environment data to be displayed on your performance display, a compatible sensor and / or transducer must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Environment]* data category:

Data items	Widget types available
• *[Air temperature]* • *[Barometric pressure]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]* • *[Level]*
[Water temperature]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]* • *[Level]*
[Drift]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*

Data items	Widget types available
• *[Set]* • *[Set & drift]*	• *[Digits]* • *[360° gauge]*
• *[Max air temp]* • *[Min air temp]* • *[Dew point]* • *[Humidity]* • *[Sunset / sunrise]* • *[Max water temp]* • *[Min water temp]* • *[Wind chill apparent]* • *[Wind chill true]*	*[Digits]*

Fuel data

The *[Fuel]* data category includes items related to your fuel economy.

Values for the data items listed below are provided by your multifunction display / chartplotter's *[Fuel / trip]* manager: *[My data > Fuel/Trip > Fuel set-up > Fuel manager]* and *[Tank settings]* menu: *[Settings > Boat details > Configure tanks > Tank settings]*. For more information on how to enable and configure your multifunction display / chartplotter's *[Fuel / trip]* manager and *[Tank settings]*, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).
The following data items are available in the *[Fuel (tank)]* data sub-categories:

Data items	Widget types available
• *[Fuel level (%)]* • *[Fuel level (vol)]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*

The following data items are available in the *[All tanks]* data sub-categories:

Data items	Widget types available
• *[Total fuel (vol)]* • *[Total fuel (%)]* • *[Total propulsive fuel (vol)]* • *[Total propulsive fuel (%)]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*
• *[Fuel remaining (estimated)]* • *[Fuel flow rate (total)]* • *[Engine economy total]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]*
• *[Distance to empty]* • *[Time to empty]* • *[Fuel used (trip)]* • *[Fuel used (season)]*	*[Digits]*

Generator data

In order for generator data to be displayed on your performance display, a generator transmitting supported NMEA 2000 PGNs must be connected to and detected by your multifunction display / chartplotter.

Values for the data items listed below are provided within your multifunction display / chartplotter's *[Generator settings]* menu: *[Settings > Boat details > Configure Generators > Generator settings]*. For more information on how to configure your multifunction display / chartplotter's *[Generator settings]*, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).
The following data items are available in the *[Generator 1]* and *[Generator 2]* data sub-categories:

Data items	Widget types available
• *[Coolant temperature]* • *[Engine RPM]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]* • *[Level]*
• *[Exhaust gas temperature]* • *[Fuel flow]* • *[Generator battery voltage]* • *[Generator current]* • *[Generator line 1 current]* • *[Generator line 1 to line 2 voltage]* • *[Generator line 1 to neutral voltage]* • *[Generator line 2 current]* • *[Generator line 2 to line 3 voltage]* • *[Generator line 2 to neutral voltage]* • *[Generator line 3 current]* • *[Generator line 3 to line 1 voltage]* • *[Generator line 3 to neutral voltage]* • *[Generator voltage]* • *[Oil pressure]* • *[Oil temperature]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*
• *[Engine load]*	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]*
• *[Engine hours]* • *[Generator line 1 frequency]* • *[Generator line 1 power]* • *[Generator line 2 frequency]* • *[Generator line 2 power]* • *[Generator line 3 frequency]* • *[Generator line 3 power]* • *[Generator status]* • *[Oil pressure (status)]*	*[Digits]*

GPS data

The *[GPS]* data category contains data items related to the GNSS receiver that is in use by your multifunction display / chartplotter.
The following data items are available in the *[GPS]* data category:

Data items	Widget types available
[SOG (Speed Over Ground)]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]* • *[Level]*
[COG (Course Over Ground)]	• *[Digits]* • *[Graph (horizontal)]* • *[Graph (vertical)]*
• *[Vessel position]* • *[Max SOG]* • *[Max SOG (all time)]* • *[Average SOG]* • *[Loran position]* • *[Opposite tack COG]*	*[Digits]*

Heading data

In order for heading data to be displayed on your performance display, a compatible sensor providing vessel heading data must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Heading]* data category:

Data items	Widget types available
• *[Heading]* • *[COG (Course Over Ground)]*	• *[Digits]* • *[Graph (horizontal)]* • *[Graph (vertical)]*
[Compass]	• *[Standard compass]* • *[3D compass]*
• *[Opposite tack heading]* • *[Steer to layline]* **(2)** • *[Locked heading]* • *[Heading error]* • *[Opposite tack COG]*	*[Digits]*

Note:
(2) This data item is only available when the boating activity is set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard.

Inside environment data

In order for inside environment data to be displayed on your performance display, a compatible sensor must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Inside environment]* data category:

Data items	Widget types available
• *[Inside humidity]* • *[Inside temperature]*	*[Digits]*

Load cells data

In order for load cell data to be displayed on your performance display, a compatible load cell gateway must be connected to your multifunction display / chartplotter network.

Each data item available in the *[Load cells]* data category will be named according to the compatible sensors connected to your load cell gateway.

Motor data

In order for motor data to be displayed on your performance display, a motor management system must be connected to your multifunction display / chartplotter network, and the *[Propulsion system]* setting must be set to *[Electric]* during your multifunction display / chartplotter's initial startup wizard. Depending on your motor manufacturer, a compatible motor interface or gateway may be required.

The number of motors that are detected by your performance display is determined by the number of motors specified under your multifunction display / chartplotter's *[Boat details]* settings menu: *[Homescreen > Settings > Boat details > Num of motors]*. For more information on how to configure your multifunction display / chartplotter's *[Boat details]* settings menu, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).
The following data items are available in the *[Motors]* data sub-categories:

Data items	Widget types available
[Motor power]	• *[Digits]* • *[Level]* • *[270° gauge]*
• *[Controller temperature]* • *[Gear]* • *[Motor hours]* • *[RPM]* • *[Temperature]* • *[Voltage]*	*[Digits]*

Navigation data

In order for navigation data to be displayed on your performance display, a compatible sensor providing position data must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Navigation]* data category:

Data items	Widget types available
[VMG to waypoint]	• *[Digits]* • *[270° gauge]* • *[Level]*
[Compass]	• *[Standard compass]* • *[3D compass]*

Data items	Widget types available
[Waypoint rounding (leave to)]	• *[Digits]* • *[Graphic]*
• *[Active waypoint]* • *[Next waypoint]* • *[Waypoint info]* • *[BTW (Bearing to waypoint)]* • *[BOTW (Bearing Origin to Waypoint)]* • *[Course to steer]* • *[Next leg bearing]* • *[CMG (Course Made Good)]* • *[DMG (Distance Made Good)]* • *[DTW (Distance To Waypoint)]* • *[Sailing DTW]* **(2)** • *[Steer to layline]* **(2)** • *[Time to tack]* • *[ETA at destination]* • *[ETA at waypoint]* • *[Target position]* • *[Loran target position]* • *[Time to destination]* • *[Time to waypoint]* • *[Sailing time to waypoint]* • *[XTE (Cross track error)]*	*[Digits]*

Note:
(2) This data item is only available when the boating activity is set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard.

Pilot data

In order for pilot data to be displayed on your performance display, a compatible rudder reference transducer must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Pilot]* data category:

Data items	Widget types available
[Rudder angle]	• *[Digits]* • *[180° gauge]* • *[Rudder bar]*
• *[Pilot status]* • *[Locked heading]*	*[Digits]*

Speed data

In order for speed data to be displayed on your performance display, a compatible speed transducer must be connected to your multifunction display / chartplotter network.

The following data items are available in the *[Speed]* data category:

Data items	Widget types available
[SOG (Speed Over Ground)]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]* • *[Level]*
[STW (Speed Through Water / Boat Speed)]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]*
[Drift]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*
• *[VMG to windward]* • *[VMG to waypoint]*	• *[Digits]* • *[270° gauge]* • *[Level]*
• *[Max STW]* • *[Average STW]*	• *[Digits]* • *[180° gauge (up / down / left / right)]*
• *[Target STW]* **(2)** • *[Polar performance]* **(2)** • *[Max SOG]* • *[Max SOG (all time)]* • *[Average SOG]*	*[Digits]*

Note:
(2) This data item is only available when the boating activity is set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard.

Time data

In order for time data to be displayed on your performance display, a compatible device providing time data must be connected to your multifunction display network /chartplotter.

The following data items are available in the *[Time]* data category:

Data items	Widget types available
• *[Date]* • *[ETA at destination]* • *[ETA at waypoint]* • *[Race timer]* **(2)** • *[Sailing time to waypoint]* **(2)** • *[Sunrise time]* • *[Sunset / sunrise]* • *[Sunset time]* • *[Time]* • *[Time & date]* • *[Time to burn]* **(2)** • *[Time to destination]* • *[Time to tack]* **(2)** • *[Time to waypoint]* • *[UTC time]* • *[UTC date]*	*[Digits]*

Note:
(2) This data item is only available when the boating activity is set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard.

Water tank data

[Water tank] data shows the fill percentage for each detected water tank.

Values for the data items listed below are provided by your multifunction display / chartplotter's *[Tank settings]* menu: *[Settings > Boat details > Configure tanks > Tank settings]*. For more information on how to configure your multifunction display / chartplotter's *[Tank settings]*, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).

The following data items are available for the *[Fresh water]* data sub-categories:

Data items	Widget types available
• *[Fresh water (%)]* • *[Fresh water (vol)]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*

The following data items are available for the *[Grey water]* data sub-categories:

Data items	Widget types available
[Grey water (%)]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*

The following data items are available for the *[Black water]* data sub-categories:

Data items	Widget types available
• *[Black water (%)]* • *[Black water (vol)]*	• *[Digits]* • *[90° gauge (left / right)]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*

The following data items are available for the *[Live well]* data sub-categories:

Data items	Widget types available
• *[Live well (%)]* • *[Live well (vol)]*	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*

Wind data

In order for wind data to be displayed on your performance display, a compatible wind transducer must be connected to your multifunction display / chartplotter network.

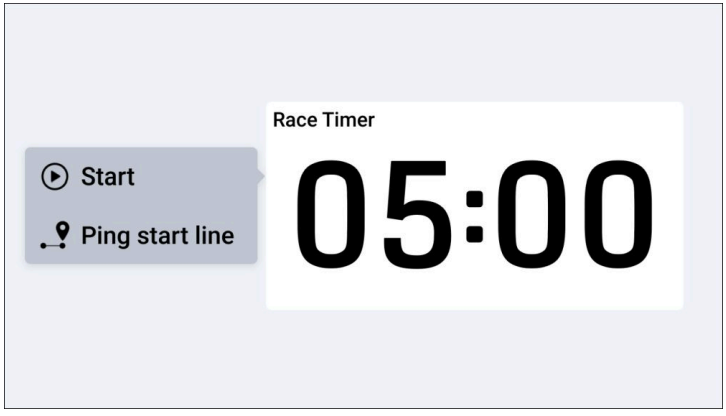
The following data items are available in the *[Wind]* data category:

Data items	Widget types available
—	• *[Wind performance gauge]* (1) – *[Standard gauge]* – *[Dynamic zoomed gauge]* • *[SailPoint]* (1)
• *[AWS (Apparent Wind Speed)]* • *[TWS (True Wind Speed)]*	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]* • *[Level]*
• *[AWA (Apparent Wind Angle)]* • *[TWD (True Wind Direction)]* • *[TWA (True Wind Angle)]* • *[GWD (Ground Wind Direction)]*	• *[Digits]* • *[360° gauge]* • *[Graph (horizontal)]* • *[Graph (vertical)]*
[GWS (Ground Wind Speed)]	• *[Digits]* • *[180° gauge (up / down / left / right)]* • *[270° gauge]* • *[Level]*
[Wind shift]	• *[Digits]* • *[180° gauge (up / down)]* • *[Wind shift bar]*
[Next leg TWA]	• *[Digits]* • *[Graphic]*
• *[Max AWA]* • *[Min AWA]* • *[Max AWS]* • *[Min AWS]* • *[Max TWA]* • *[Min TWA]* • *[Max TWS]* • *[Min TWS]* • *[Beaufort]* • *[Cardinal]* • *[Target TWA]* (2) • *[Target AWA]* (2)	*[Digits]*

Note:
(2) This data item is only available when the boating activity is set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard.

7.5 Widget functions

In addition to the customizable widget options available, you can tap the following data items and corresponding widgets to display separate functions specific to the widget.

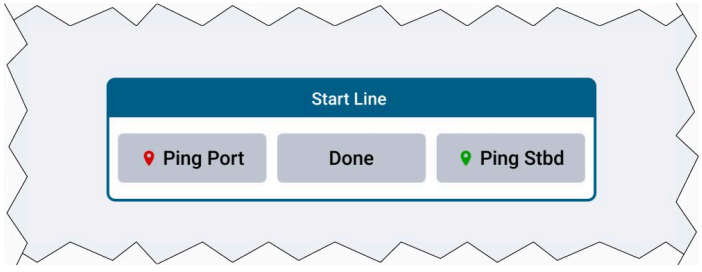


Available functions for the *[Min (...) / Max (...) / Average (...) / Trip (...)]* related data items:

- *[Reset (...)]* — resets the value shown on both your multifunction display / chartplotter and performance display.

Available functions for the *[Race timer]*, *[Line bias]*, *[Dist to line]*, *[Time to burn]* data items:

- *[Ping start line]* — displays a *[Start Line]* pop-up which contains the following options:



  – *[Ping Port]* — Places a port end point at your vessel's current location. Once selected, a *[Port end set]* pop-up will appear. If both port and starboard end points have been created, a race start line will be drawn between the two points on your multifunction display / chartplotter.

  – *[Ping Stbd]* — Places a starboard end point at your vessel's current location. Once selected, a *[Starboard end set]* pop-up will appear. If both port and starboard end points have been created, a race start line will be drawn between the two points on your multifunction display / chartplotter.

  – *[Done]* — closes the *[Start Line]* pop-up.

Available functions for the *[Race timer]* data item:

- *[Start]* — starts a race timer on both your performance display and multifunction display / chartplotter. Once started, a beep will sound every minute, on the minute mark. When 30 seconds are remaining on the timer, 3 beeps will sound. When 10 seconds are remaining on the timer, 2 alternating beeps will sound every second until the timer reaches zero. The default race timer duration can be changed from your connected multifunction display / chartplotter. For more information, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).
- *[Sync nearest minute]* — synchronizes the race timer to the closest minute. This function is available once *[Start]* has been selected.
- *[Up 1m]* — increases the time remaining on the race timer by one minute. This function is available once *[Start]* has been selected.
- *[Down 1m]* — decreases the time remaining on the race timer by one minute. This function is available once *[Start]* has been selected.
- *[Stop & reset]* — stops and resets the race timer. Once stopped, a beep will sound. This function is available once *[Start]* has been selected.

Available functions for the *[Camera]* related data items:

- *[Visible light]* — changes the selected camera feed to *[Visible light]*. This function is only available if your camera supports both *[Visible light]* and *[Thermal]* camera feeds.
- *[Thermal]* — changes the selected camera feed to *[Thermal]*. This function is only available if your camera supports both *[Visible light]* and *[Thermal]* camera feeds.

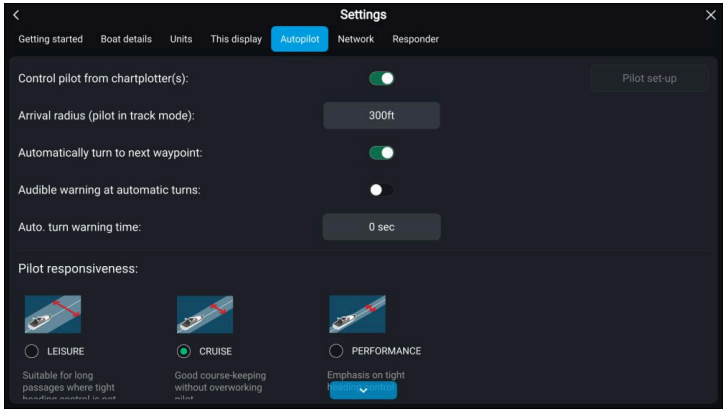
CHAPTER 8: AUTOPILOT INTEGRATION

CHAPTER CONTENTS

8.1 Autopilot control overview

Your performance display can be integrated with an Evolution-Series autopilot system and act as the autopilot's controller while connected to a Raymarine LightHouse 4 (v4.7.172 or later) multifunction display / chartplotter. Refer to the documentation supplied with your autopilot for details on installation, commissioning and connecting your autopilot to your multifunction display / chartplotter network.

Before your performance display can be used as an autopilot controller, autopilot control must first be enabled on your connected multifunction display / chartplotter via the *[Autopilot]* tab in the *[Settings]* menu: *[Homescreen > Settings > Autopilot > Control pilot from chartplotter(s)]*.



Once enabled, the *[Autopilot control]* page preset will be available as an option on your performance display. For more information on how to add a page preset, refer to: **p.29 — Creating new pages**

Warning: Maintain a permanent watch

Always maintain a permanent watch, this will allow you to respond to situations as they develop. Failure to maintain a permanent watch puts yourself, your vessel and others at serious risk of harm.

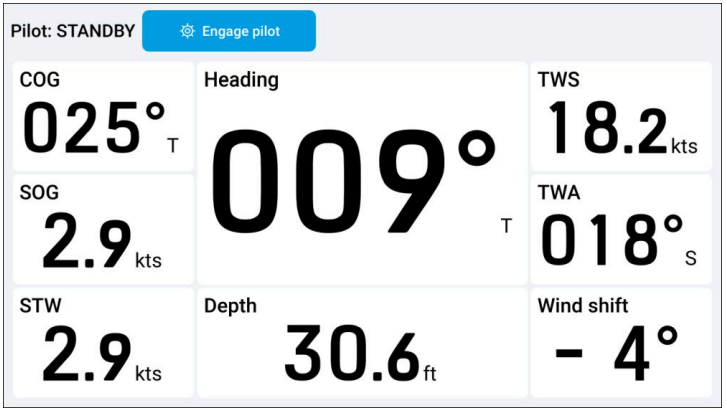
Warning: Autopilot usage

Autopilots navigate a preset course and do NOT respond to hazards automatically. The operator must remain at the helm at all times and be ready to avoid hazards and warn passengers of course changes.

8.2 Pilot standby mode

The *[Pilot: STANDBY]* mode is the default mode that the *[Autopilot control]* page preset will automatically change to while your autopilot is disengaged.

From the *[Pilot: STANDBY]* mode, your autopilot can be engaged using one of the available 'steer to' modes found under the *[Engage pilot]* button located at the top left corner of your screen.



The default widgets shown on the *[Pilot: STANDBY]* mode will change according to the boat activity set during your connected multifunction display / chartplotter's initial startup wizard.

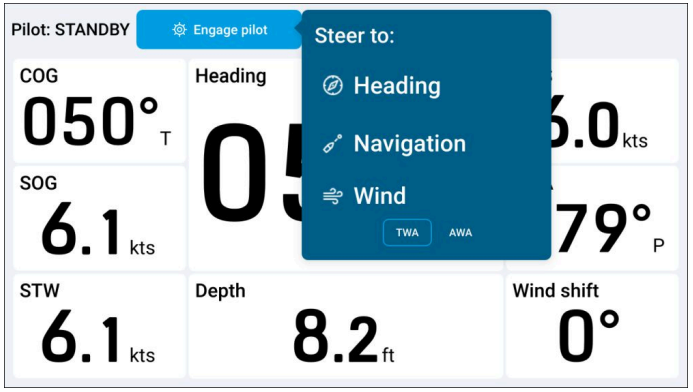
Engaging the autopilot (Steer to Heading)

Note:
A compatible sensor providing vessel heading data must be connected to your multifunction display / chartplotter network in order to use the *[Steer to Heading]* mode.

To engage your autopilot using the *[Steer to Heading]* mode:

1. For Wheel and Tiller pilots, engage the mechanical drive by either engaging the wheel drive's clutch or attaching the pushrod onto the tiller pin.
2. On your performance display, navigate to the *[Pilot: STANDBY]* preset page.
3. Select *[Engage pilot]*.

   The following menu will be displayed:



4. Select *[Heading]*.

Your autopilot will engage and the *[Steer to Heading]* mode will be displayed onscreen. For more information, refer to:
p.68 — Steer to Heading

Engaging the autopilot (Steer to Navigation)

Note:
A compatible sensor providing vessel heading data and a compatible sensor providing position data must be connected to your multifunction display / chartplotter network in order to use the *[Steer to Navigation]* mode.

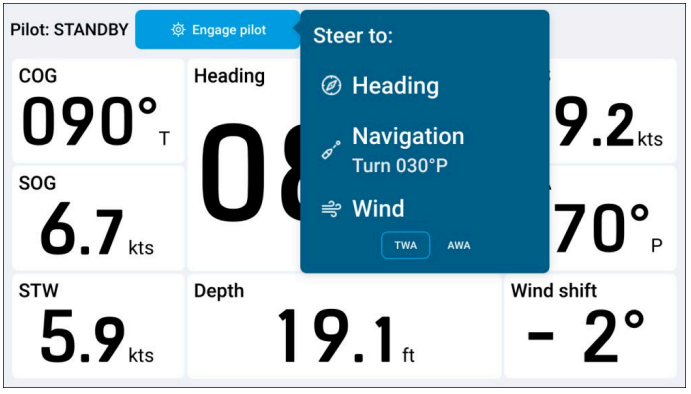
To engage your autopilot using the *[Steer to Navigation]* mode:

1. For Wheel and Tiller pilots, engage the mechanical drive by either engaging the wheel drive's clutch or attaching the pushrod onto the tiller pin.
2. Perform a *[Goto]* or *[Follow route]* on your multifunction display / chartplotter. For more information, refer to the LightHouse 4 Advanced Operation Instructions (**81406**).

Important:
It is the captain's responsibility to ensure a route is safe to navigate before commencing the follow.

3. On your performance display, navigate to the *[Pilot: STANDBY]* preset page.
4. Select *[Engage pilot]*.

   The following menu will be displayed, along with turn angle information related to the selected waypoint / point of interest:



5. Select *[Navigation]*.
6. If applicable, choose between *[ALONG route leg]* or *[DIRECT from here]*.
   - *Choosing [ALONG route leg] will steer along the original track.*
   - *Choosing [DIRECT from here] will plot a new track from your current position to the first waypoint on your route.*

Your autopilot will engage and the *[Steer to Navigation]* mode will be displayed onscreen. For more information, refer to:
p.69 — Steer to Navigation

Engaging the autopilot (Steer to Wind)

Note:
In order to engage the autopilot using one of the available *[Steer to Wind]* sub-modes on your performance display:

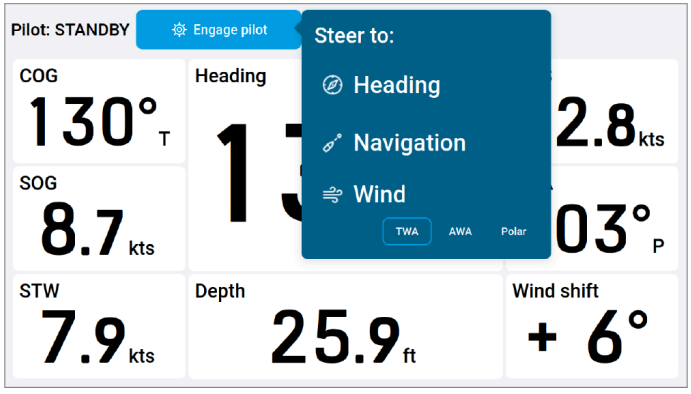
• Your multifunction display / chartplotter boating activity must be set to *[Sailing]* during the initial startup wizard, and;

• A compatible wind transducer must be connected to your multifunction display / chartplotter network.

• A compatible sensor providing vessel heading data must be connected to your multifunction display / chartplotter network.

To engage your autopilot using one of the *[Steer to Wind]* sub-modes:

1. For Wheel and Tiller pilots, engage the mechanical drive by either engaging the wheel drive's clutch or attaching the pushrod onto the tiller pin.
2. On your performance display, navigate to the *[Pilot: STANDBY]* preset page.
3. Select *[Engage pilot]*.
   The following menu will be displayed:



Note:
The *[Polar]* sub-mode is only enabled when the *[Sail performance]* setting on your multifunction display / chartplotter is set to *[Polar]* and if your vessel heading is within 30° of the polar target wind angle. The *[Sail performance]* setting can be changed by navigating to: *[Homescreen > Settings > Boat details > Sail performance]*.

4. Either:
   - Select *[Wind]* to open the sub-mode that you last selected.

Note:
If the last sub-mode you selected is the *[Polar]* sub-mode and your vessel heading is more than 30° from a polar target wind angle, the *[TWA]* sub-mode will open by default.

   - Or, directly select your chosen sub-mode.

Your autopilot will engage and the chosen sub-mode will be displayed onscreen. For more information, refer to: **p.72 — Steer to wind**

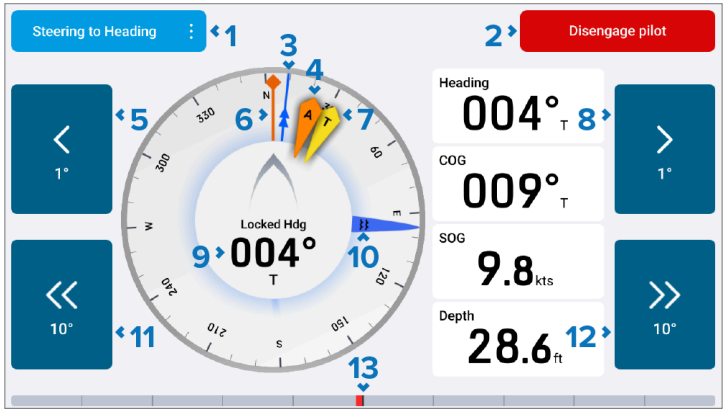
8.3 Steer to Heading

In *[Steer to Heading]* mode, your autopilot follows a locked heading.

While the *[Steer to Heading]* mode is active, the following options and visual indicators shown below will be displayed onscreen.

Each widget can be further customized to suit your preference. If you wish to reset the data page to the default configuration, tap-hold one of the available widgets and select *[Reset page]* from the list of widget options shown.

Example: Steer to Heading mode



1. **Steering to Heading** — Selecting will allow you to switch your autopilot to another 'steer to' mode.
2. **Disengage pilot** — Selecting will disengage your autopilot, after confirming a disengage pop-up.
3. **COG indicator** — Course Over Ground.
4. **AWD indicator** — Apparent Wind Direction.
5. **–1°** — Selecting will adjust your locked heading by minus 1 degree.
6. **Locked heading indicator** — Locked heading.
7. **TWD indicator** — True Wind Direction.
8. **+1°** — Selecting will adjust your locked heading by plus 1 degree.
9. **Locked heading value** — Locked heading.
10. **Tide indicator** — Tide direction.
11. **–10°** — Selecting will adjust your locked heading by minus 10 degrees.
12. **+10°** — Selecting will adjust your locked heading by plus 10 degrees.
13. **Rudder bar / Wind shift bar (sailing only)** — Rudder bar. If your boating activity was set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard, selecting will change between a Rudder bar and a Wind shift bar.

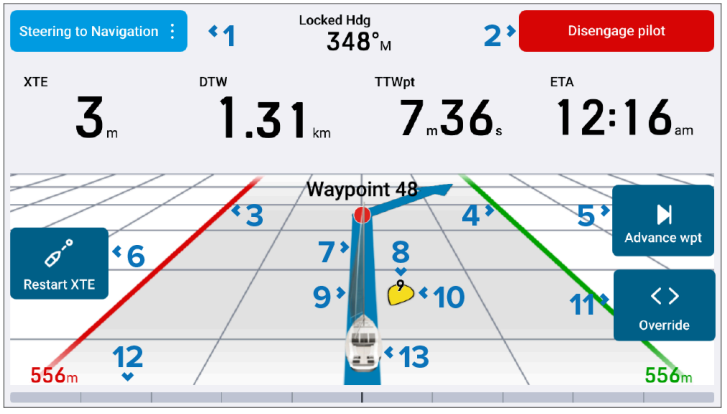
8.4 Steer to Navigation

The *[Steer to Navigation]* mode causes your autopilot to turn and navigate to a selected waypoint / cursor goto location or along a planned route.

While the *[Steer to Navigation]* mode is active, the following options and visual indicators shown below will be displayed onscreen.

Each widget can be further customized to suit your preference. If you wish to reset the data page to the default configuration, tap-hold one of the available widgets and select *[Reset page]* from the list of widget options shown.

Example: Steer to Navigation mode



1. **Steering to Navigation** — Selecting will allow you to switch your autopilot to another 'steer to' mode.
2. **Disengage pilot** — Selecting will disengage your autopilot, after confirming a disengage pop-up.
3. **Port XTE limit** — If your vessel steers or drifts from its intended course to the cross track error (XTE) limit, the *[Off track]* alarm will trigger (if enabled on your multifunction display / chartplotter).
4. **Starboard XTE limit** — If your vessel steers or drifts from its intended course to the cross track error (XTE) limit, the *[Off track]* alarm will trigger (if enabled on your multifunction display / chartplotter).
5. **Advance waypoint** — Selecting will skip to the next waypoint on a route, after confirming a turn direction pop-up.

6. **Restart XTE** — Selecting will restart the cross track error (XTE) at your current location.
7. **Active waypoint symbol** — Symbol representing the current active waypoint.
8. **TWS indicator** — True Wind Speed.
9. **Route line** — Current and next leg direction.
10. **TWA indicator** — True Wind Angle.
11. **Override** — Selecting will display an 'Override' pop-up onscreen. For more information, refer to: **p.70 — Override controls**
12. **Rudder bar / Wind shift bar (sailing only)** — Rudder bar. If your boating activity was set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard, selecting will change between a Rudder bar and a Wind shift bar.
13. **3D Vessel icon** — 3D vessel icon. The vessel icon will change depending on the boat type selected on your multifunction display / chartplotter. Tap-hold to display a *[Show TWA & TWS]* toggle.

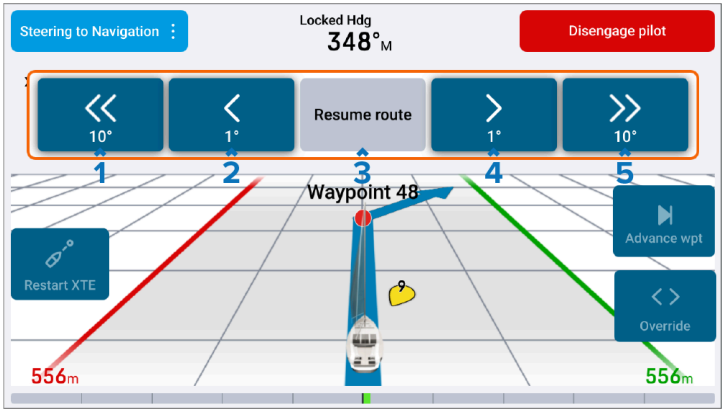
Override controls

While the *[Steer to Navigation]* mode is active, the *[Override]* option enables you to temporarily deviate from the current route line using the degree adjustment controls shown below to change your locked heading.

When the *[Override]* option is initially selected:

- Your current locked heading will be maintained until changed.
- All networked Alpha-Series performance displays with an *[Autopilot control]* preset page will display *[Override]* controls onscreen.
- All compatible networked LightHouse multifunction display / chartplotters will enter *[Steer to Hdg]*.

Example: Steer to Navigation mode — Override:



1. **–10°** — Selecting will adjust your locked heading by minus 10 degrees.
2. **–1°** — Selecting will adjust your locked heading by minus 1 degree.
3. **Resume route** — Selecting will either:
   a. Display a *[Join route]* pop-up if your cross track error (XTE) exceeds 30 m (98.43 ft):
      - Choosing *[ALONG route leg]* will steer along the original track.
      - Choosing *[DIRECT from here]* will plot a new track from your current position to the first waypoint on your route.
      - Choosing *[Cancel]* will return to the *[Override]* mode.

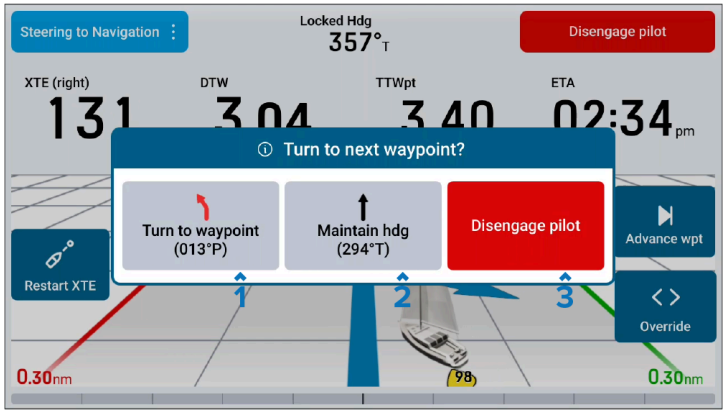
   b. Return to *[Steer to Navigation]* mode if you were previously navigating to a selected waypoint or cursor goto location.
4. **+1°** — Selecting will adjust your locked heading by plus 1 degree.
5. **+10°** — Selecting will adjust your locked heading by plus 10 degrees.

If you change the current 'steer to' mode or disengage the autopilot via your multifunction display / chartplotter while the *[Override]* option is active on your performance display, the *[Override]* option will be exited.

Waypoint turning

If the *[Steer to Navigation]* mode is active, the following *[Turn to next waypoint]* pop-up will appear upon reaching the waypoint arrival radius (pilot in track mode) configured on your multifunction display / chartplotter.

Example: Steer to Navigation mode — Turn to next waypoint



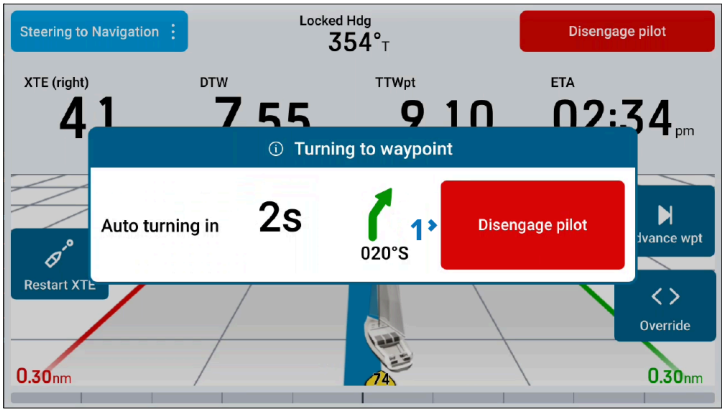
1. **Turn to waypoint** — Selecting will advance navigation to the next waypoint in your route.
2. **Maintain heading** —Selecting will maintain the current locked heading and active *[Steer to Heading]* mode.
3. **Disengage autopilot** — Select to disengage the autopilot and prevent your vessel from automatically turning.

Automatic waypoint turning

If the *[Steer to Navigation]* mode is active and automatic turning has been enabled on your multifunction display / chartplotter, the following *[Turning to waypoint]* pop-up will appear upon reaching the waypoint arrival radius (pilot in track mode) configured on your multifunction display / chartplotter.

Note:

- Waypoints must be farther apart than the *[Arrival radius (pilot in track mode)]* distance specified on your multifunction display / chartplotter.
- The *[Arrival radius (pilot in track mode)]* can be set from the *[Alarms]* manager on your multifunction display / chartplotter, by navigating to: *[Homescreen > Alarms > Setings > Arrival radius (pilot in track mode)]*. The *[Arrival radius (pilot in track mode)]* overrides the standard *[Arrival radius]* notification.

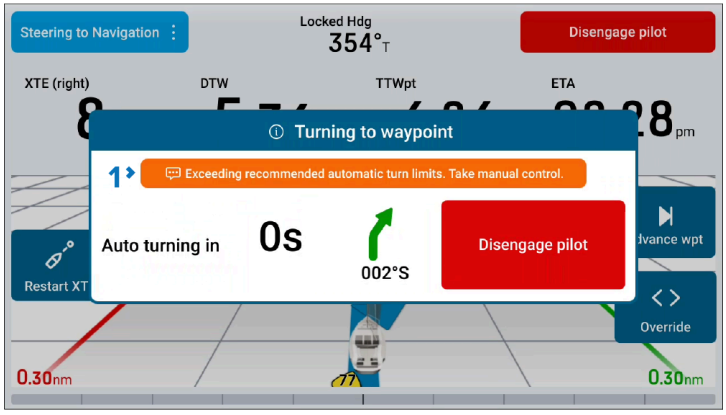


1. **Disengage autopilot** — Select to disengage the autopilot and prevent your vessel from automatically turning.

Important:
When the auto turn countdown reaches zero your vessel will automatically turn towards the next waypoint. NO user action or confirmation is required.

Automatic waypoint turning limits exceeded

When following a route using automatic turning, route waypoints must be spaced farther apart than the *[Arrival radius (pilot in track mode)]* distance specified on your multifunction display / chartplotter. If the next waypoint in a route is present within the *[Arrival radius]*, a *Exceeding recommended automatic turn limit* warning is displayed inside of the *[Turning to waypoint]* pop-up.



1. **Automatic turn warning** — Warning within the *[Turning to waypoint]* pop-up.

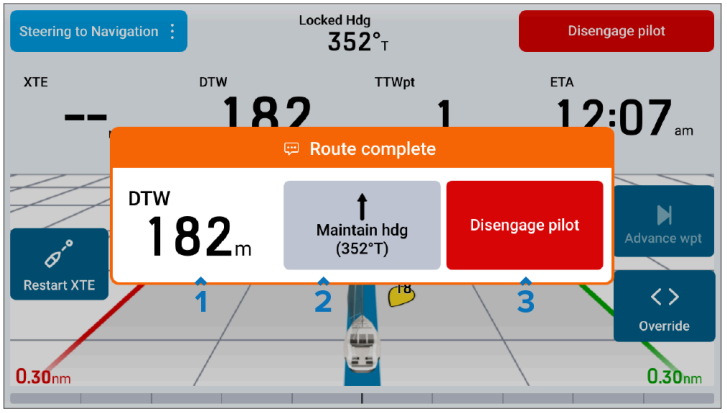
Important:
When the warning is displayed you should take manual control of your vessel to navigate the route, otherwise waypoints in the route that are too close together will be skipped.

For further details on route waypoint spacing, refer to the LightHouse 4 Advanced Operation Instructions (**81406**).

Route complete

Upon reaching the last waypoint on your route, the following *[Route complete]* pop-up will appear.

Example: Steer to Navigation mode — Route complete



1. **DTW** — Distance to waypoint.
2. **Maintain heading** —Selecting will maintain the current locked heading and active *[Steer to Heading]* mode.
3. **Disengage autopilot** — Select to disengage the autopilot and prevent your vessel from automatically turning.

8.5 Steer to wind

Steer to wind uses your autopilot's Wind vane mode to steer your vessel to the wind. Steer to wind uses 1 of 3 wind modes to steer the vessel. You can steer either to the Apparent Wind Angle (AWA), True Wind Angle (TWA) or to a target wind angle from a polar table.

Steer to wind is available when the *Sailing* boating activity is selected during the MFD's/chartplotter's initial start up wizard. Steer to wind requires wind data to be available.

The modes available depend on the *[Sail performance]* setting selected in the MFD's/chartplotter's *[Boat details]* menu.

The available modes are:

- *[Steer to true wind angle]* (TWA) — Use TWA to maintain a fixed wind angle to the wind at any point of sail.
- *[Steer to apparent wind angle]* (AWA) — Use AWA to maintain a fixed wind angle to the wind at any point of sail.
- *[Steer to target true wind angle (from polar)]* — Only available when the *[Sail performance]* settings is set to *[Polar]*. Use to achieve optimum upwind (or downwind) performance based on your polar table.

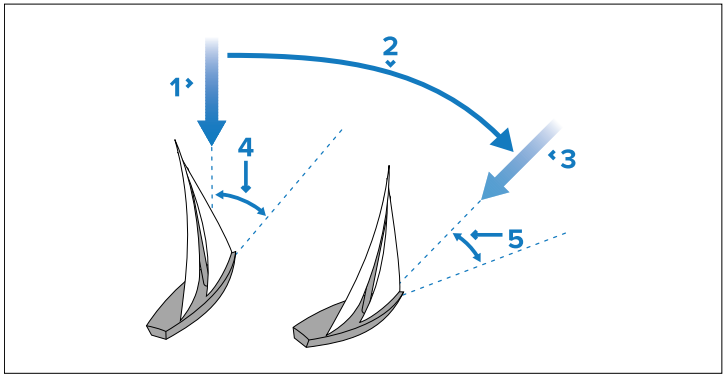
When Steer to wind is engaged the last used mode will be used.

Note:
[Steer to target true wind angle (from polar)] will not be available if your vessel's heading is more than 30° from the polar target angle.

Mirrored TWA and Fixed angles

When the MFD's/chartplotter's *[Sail performance]* is set to either *[Mirrored TWA]* or *[Fixed angles]* the TWA and AWA steer to wind modes will be available.

When using the TWA mode or AWA mode the vessel will automatically steer towards the selected wind angle. The wind angle can be adjusted in 1° or 10° increments using the relevant buttons. If a wind shift occurs, the autopilot will adjust the locked heading to maintain the original wind angle.

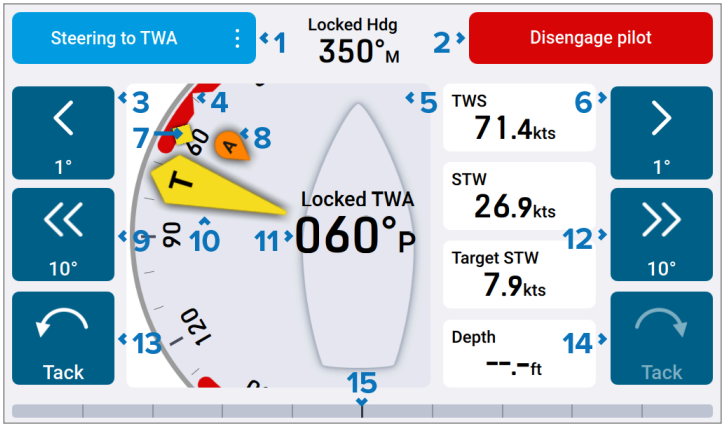


1. Initial wind direction.
2. Wind shift.
3. New wind direction.
4. Relative wind angle.
5. Vessel turns to maintain the same relative wind angle.

Steer to Wind (TWA)

While the *[Steer to Wind (TWA)]* mode is active, the following options and visual indicators shown below will be displayed onscreen.

Each widget can be further customized to suit your preference. If you wish to reset the data page to the default configuration, tap-hold one of the available widgets and select *[Reset page]* from the list of widget options shown.



1. **Steering to TWA** — Selecting will allow you to switch your autopilot to another 'steer to' mode.
2. **Disengage pilot** — Selecting will disengage your autopilot, after confirming a disengage pop-up.
3. **–1°** — Selecting will adjust your course by minus 1 degree.
4. **Port wind angle target** — Align the larger wind indicator (AWA or TWA) with the notch to optimize Velocity Made Good (VMG) when sailing upwind or downwind.
5. **Angle gauge** — The angle gauge position will dynamically adjust to one of the following positions in order to keep the current wind angle in view:
   - Upwind Port.
   - Upwind Starboard.
   - Reaching Port (currently shown).
   - Reaching Starboard.
   - Downwind Port.

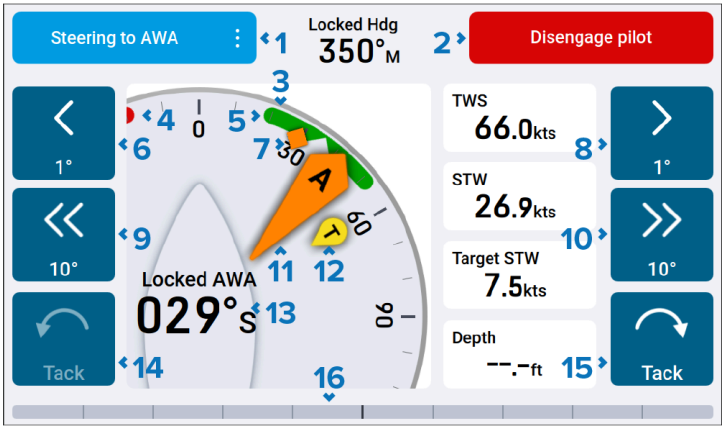
- Downwind Starboard.

6. **+1°** — Selecting will adjust your course by plus 1 degree.
7. **Locked TWA indicator** — Locked True Wind Angle.
8. **AWA** — Apparent Wind Angle.
9. **–10°** — Selecting will adjust your course by minus 10 degrees.
10. **TWA** — True Wind Angle.
11. **Locked TWA value** — Locked True Wind Angle.
12. **+10°** — Selecting will adjust your course by plus 10 degrees.
13. **Tack / Gybe to Port** — Selecting will turn the vessel to the same offset angle on the opposite side of the wind. The autopilot will then adjust the heading to mirror the locked wind angle from the previous tack / gybe.
    - The *[Tack]* option is only available when sailing upwind. For more information, refer to: **p.77 — Tacking in steer to wind mode**
    - The *[Gybe]* option is only available when sailing downwind. For more information, refer to: **p.78 — Gybing in steer to wind mode**
14. **Tack / Gybe to Stbd** — Selecting will turn the vessel to the same offset angle on the opposite side of the wind. The autopilot will then adjust the heading to mirror the locked wind angle from the previous tack / gybe.
    - The *[Tack]* option is only available when sailing upwind. For more information, refer to: **p.77 — Tacking in steer to wind mode**
    - The *[Gybe]* option is only available when sailing downwind. For more information, refer to: **p.78 — Gybing in steer to wind mode**
15. **Rudder bar / Wind shift bar (sailing only)** — Rudder bar. If your boating activity was set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard, selecting will change between a Rudder bar and a Wind shift bar.

Steer to Wind (AWA)

While the *[Steer to Wind (AWA)]* sub-mode is active, the following options and visual indicators shown below will be displayed onscreen.

Each widget can be further customized to suit your preference. If you wish to reset the data page to the default configuration, tap-hold one of the available widgets and select *[Reset page]* from the list of widget options shown.



1. **Steering to AWA** — Selecting will allow you to switch your autopilot to another 'steer to' mode.
2. **Disengage pilot** — Selecting will disengage your autopilot, after confirming a disengage pop-up.
3. **Angle gauge** — The angle gauge position will dynamically adjust to one of the following positions in order to keep the current wind angle in view:
    - Upwind Port.
    - Upwind Starboard.
    - Reaching Port (currently shown).
    - Reaching Starboard.
    - Downwind Port.
    - Downwind Starboard.

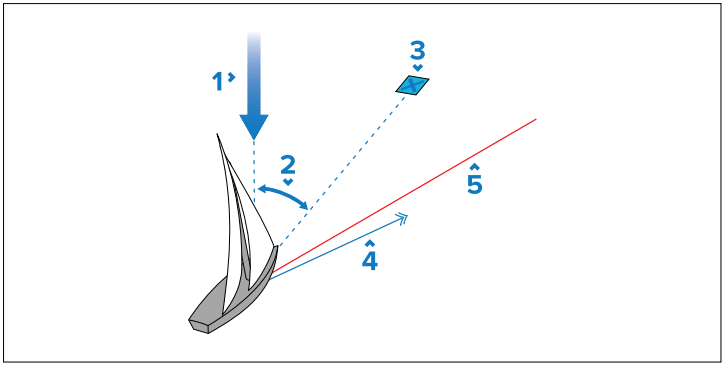
4. **Port wind angle target** — Align the larger wind indicator (AWA or TWA) with the notch to optimize Velocity Made Good (VMG) when sailing upwind or downwind.
5. **Starboard wind angle target** — Align the larger wind indicator (AWA or TWA) with the notch to optimize Velocity Made Good (VMG) when sailing upwind or downwind.
6. **–1°** — Selecting will adjust your course by minus 1 degree.
7. **Locked AWA indicator** — Locked Apparent Wind Angle.
8. **+1°** — Selecting will adjust your course by plus 1 degree.
9. **–10°** — Selecting will adjust your course by minus 10 degrees.
10. **+10°** — Selecting will adjust your course by plus 10 degrees.
11. **AWA** — Apparent Wind Angle.
12. **TWA** — True Wind Angle.
13. **Locked AWA value** — Locked Apparent Wind Angle.
14. **Tack / Gybe to Port** — Selecting will turn the vessel to the same offset angle on the opposite side of the wind. The autopilot will then adjust the heading to mirror the locked wind angle from the previous tack / gybe.
    - The *[Tack]* option is only available when sailing upwind. For more information, refer to: **p.77 — Tacking in steer to wind mode**
    - The *[Gybe]* option is only available when sailing downwind. For more information, refer to: **p.78 — Gybing in steer to wind mode**
15. **Tack / Gybe to Stbd** — Selecting will turn the vessel to the same offset angle on the opposite side of the wind. The autopilot will then adjust the heading to mirror the locked wind angle from the previous tack / gybe.
    - The *[Tack]* option is only available when sailing upwind. For more information, refer to: **p.77 — Tacking in wind vane mode**
    - The *[Gybe]* option is only available when sailing downwind. For more information, refer to: **p.78 — Gybing in steer to wind mode**
16. **Rudder bar / Wind shift bar (sailing only)** — Rudder bar. If your boating activity was set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard, selecting will change between a Rudder bar and a Wind shift bar.

Target wind angle from polar

When the MFD's / chartplotter's *[Sail performance]* is set to *[Polar]* and the wind angle is within 30° of the polar target wind angle, the vessel will automatically steer towards the relevant TWA based on current True Wind Speed (TWS) for the vessel speed, as specified in your polar table. The upwind or downwind, port or starboard target wind angle is used, depending on which is closest to the current wind angle.

The system tries to use the closest target wind angle to the actual wind angle. If the target wind angle is more than plus or minus 30° from the actual wind angle, the mode cannot be enabled.

The target wind angle can be adjusted in 1° increments using the relevant buttons. If the wind shifts or the wind angle is adjusted, causing the target wind angle to be more than 30° from the polar target wind angle, the mode will switch back to the previously used mode, i.e.: TWA or AWA.

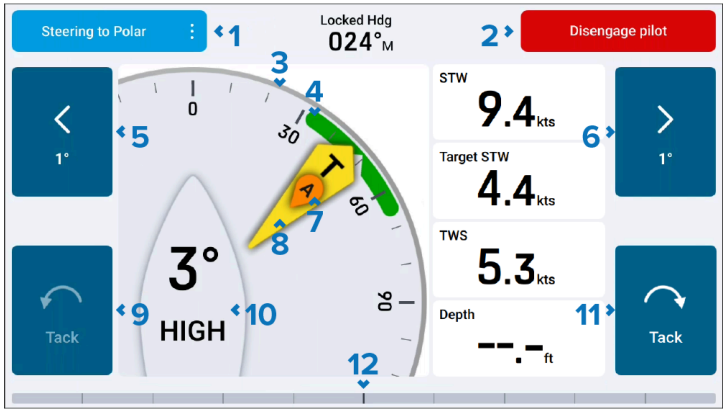


1. Wind angle.
2. Target wind angle.
3. Destination.
4. Course Over Ground (COG).
5. Layline (with *[Adjust for tides]* enabled).

Steer to Wind (Polar)

While the *[Steer to Wind (Polar)]* mode is active, the following options and visual indicators will be displayed onscreen.

Each widget can be further customized to suit your preference. If you wish to reset the data page to the default configuration, tap-hold one of the available widgets and select *[Reset page]* from the list of widget options shown.



1. **Steering to Polar** — Selecting will allow you to switch your autopilot to another 'steer to' mode.
2. **Disengage pilot** — Selecting will disengage your autopilot, after confirming a disengage pop-up.
3. **Angle gauge** — The angle gauge position will dynamically adjust to one of the following positions in order to keep the current wind angle in view:
   - Upwind Port.
   - Upwind Starboard.
   - Reaching Port (currently shown).
   - Reaching Starboard.
   - Downwind Port.
   - Downwind Starboard.
4. **Starboard wind angle target** — Align the larger wind indicator (AWA or TWA) with the notch to optimize Velocity Made Good (VMG) when sailing upwind or downwind.
5. **–1°** — Selecting will adjust your course by minus 1 degree (up to a maximum of minus 10° from the polar target).
6. **+1°** — Selecting will adjust your course by plus 1 degree (up to a maximum of plus 10° from the polar target).
7. **AWA** — Apparent Wind Angle.
8. **TWA** — True Wind Angle.
9. **Tack / Gybe to Port** — Selecting will turn the vessel to the same offset angle on the opposite side of the wind. The autopilot will then adjust the heading to mirror the locked wind angle from the previous tack / gybe.
   - The *[Tack]* option is only available when sailing upwind. For more information, refer to: **p.77 — Tacking in steer to wind mode**
   - The *[Gybe]* option is only available when sailing downwind. For more information, refer to: **p.78 — Gybing in steer to wind mode**
10. **Wind angle value** — Wind angle from the polar target. The displayed value and corresponding description will change according to the wind angle offset from your polar target:
    - **ON TARGET** — Shown when the wind angle is on target.
    - **HIGH** — Shown when steering closer to the wind direction (while sailing upwind or downwind).
    - **LOW** — Shown when steering further from the wind direction (while sailing upwind)
    - **DEEP** — Shown when steering further from the wind direction (while sailing downwind).
11. **Tack / Gybe to Stbd** — Selecting will turn the vessel to the same offset angle on the opposite side of the wind. The autopilot will then adjust the heading to mirror the locked wind angle from the previous tack / gybe.
    - The *[Tack]* option is only available when sailing upwind. For more information, refer to: **p.77 — Tacking in steer to wind mode**
    - The *[Gybe]* option is only available when sailing downwind. For more information, refer to: **p.78 — Gybing in steer to wind mode**

12. **Rudder bar / Wind shift bar (sailing only)** — Rudder bar. If your boating activity was set to *[Sailing]* during your connected multifunction display / chartplotter's initial startup wizard, selecting will change between a Rudder bar and a Wind shift bar.

Operating hints for wind vane mode

- Always trim your sails carefully to minimize the amount of standing helm.
- Reef the headsail and mainsail a little early rather than too late.
- In Wind Vane mode the autopilot will react to long-term wind shifts, but will not correct for short-term changes such as gusts.
- In gusty and unsteady inshore conditions, it is best to sail a few degrees further off the wind so that changes in wind direction can be tolerated.

Caution: Allow time

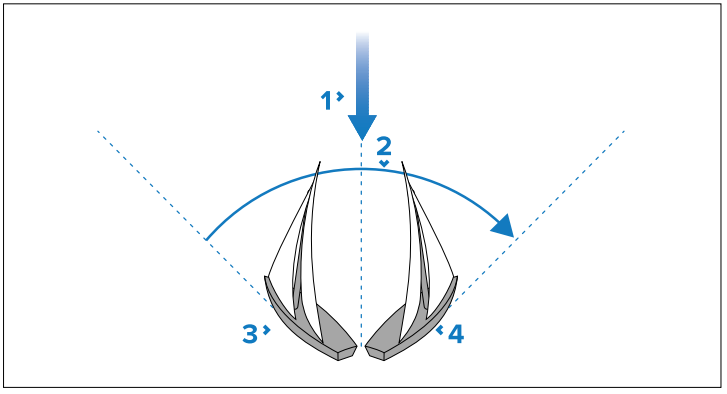
Always allow adequate time for course changes.

Caution: Major course changes

When making major course changes, the trim on the boat may change substantially. Due to this, the autopilot may take some time to settle accurately onto the new course.

Tacking in steer to wind mode

The *[Tack]* buttons can be used to *[Tack]* to the same offset angle on the opposite side of wind.



1. Wind direction.
2. Tack.
3. Starting position.
4. Final position.

Tacking is always relative to wind angle and is not adjustable.

Performing a Tack will always be through the wind.
Example:

- The *[Tack to port]* button is enabled if the locked wind angle is a port angle, the *[Tack to starboard]* button will be disabled.
- The *[Tack to starboard]* button is enabled if the locked wind angle is a starboard angle, the *[Tack to port]* button will be disabled.

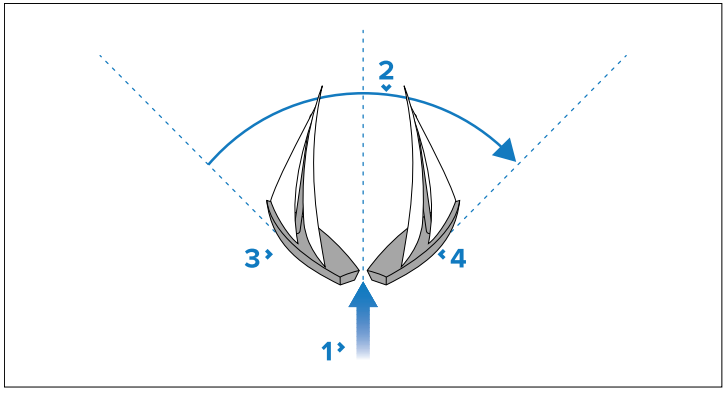
Note:
Both buttons will be disabled when you are not sailing upwind.

1. To Tack to port, select the *[Tack to port]* button and then select *[Tack to port]* from the pop-over options.
2. To Tack to starboard, select the *[Tack to starboard]* button and then select *[Tack to starboard]* from the pop-over options.

When you Tack in Steer to wind mode, the vessel turns through the Tack angle. The autopilot will then adjust the heading to mirror the locked wind angle from the previous Tack.

Gybing in steer to wind mode

The *[Gybe]* buttons can be used to *[Gybe]* to the same offset angle on the opposite side of wind.



1. Wind direction.
2. Gybe.
3. Starting position.
4. Final position.

Gybing is always relative to wind angle and is not adjustable.

Performing a Gybe will always be away from the wind. Gybes will be prevented if the MFD's/chartplotter's *[Gybe inhibit]* setting is enabled. Example:

- The *[Gybe to port]* button is enabled if the locked wind angle is a port angle, the *[Gybe to starboard]* button will be disabled.
- The *[Gybe to starboard]* button is enabled if the locked wind angle is a starboard angle, the *[Gybe to port]* button will be disabled.

Note:
Both buttons will be disabled when you are not sailing downwind.

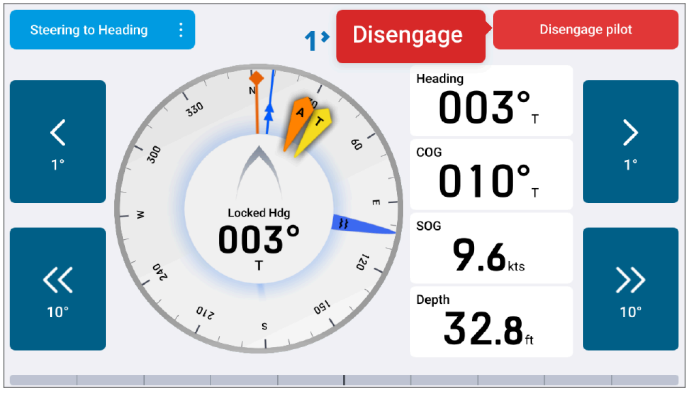
1. To Gybe to port, select the *[Gybe to port]* button and then select *[Gybe to port]* from the pop-over options.
2. To Gybe to starboard, select the *[Gybe to starboard]* button and then select *[Gybe to starboard]* from the pop-over options.

When you Gybe in Steer to wind mode, the vessel turns through the Gybe angle. The autopilot will then adjust the heading to mirror the locked wind angle from the previous Gybe.

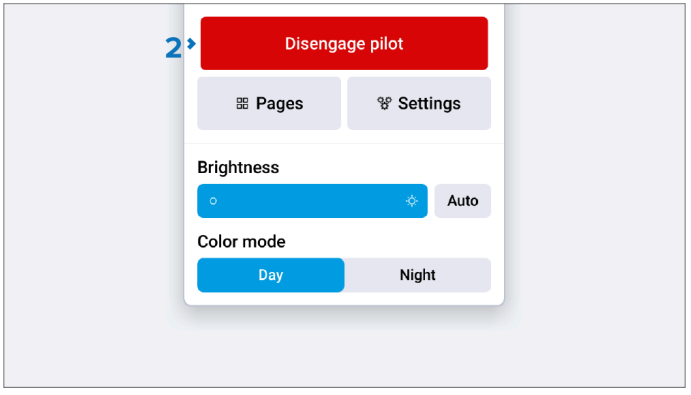
8.6 Disengaging the autopilot

To disengage the autopilot using your performance display, either:

1. From an active 'steer to' mode (*[Steer to Heading]* currently shown) on the *[Autopilot control]* preset page, select *[Disengage pilot]* and then confirm by selecting the *[Disengage]* pop-up:



2. Or, from the *[Overlay menu]*, select *[Disengage pilot]*.



Once selected, your autopilot will re-enter *[Pilot: STANDBY]* mode.

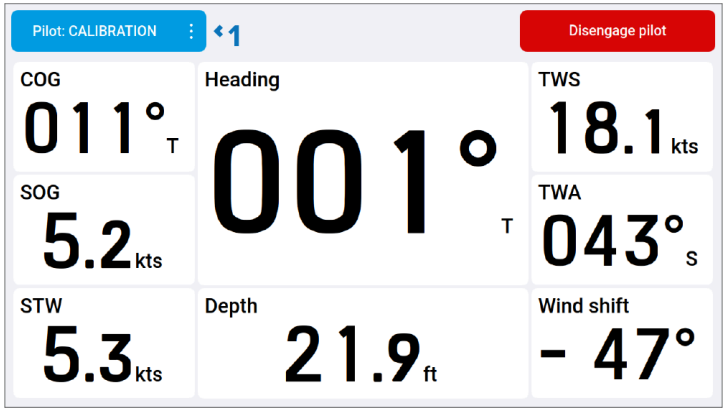
Note:
For information on how to disengage your autopilot from your multifunction display / chartplotter, refer to the LightHouse 4 Advanced Operation Instructions (**81406**).

8.7 Unsupported modes

The following autopilot modes are not supported by the Alpha-Series performance display:

- *[Pilot: PATTERN]* mode.
- *[Pilot: JOG STEER]* mode.
- *[Pilot: CALIBRATION]* mode.
- *[Pilot: SMART STEER]* mode.
- *[Pilot: FAULT]* mode.
- *[Pilot: POWER STEER]* mode.
- *[Pilot: STARTING]* mode.

If an unsupported mode is initiated via an external controller, the performance display will indicate that the mode is active via the *[Pilot: STANDBY]* page layout:



1. **Pilot: xxx** — Selecting will allow you to switch your autopilot to another ‘steer to’ mode.

8.8 Disabled settings

If the *[Autopilot control]* preset page has been created and your autopilot is engaged, the following settings will be temporarily disabled:

- *[Screen lock]* — For more information, refer to: **p.23 — Activating screen lock**
- *[Auto-lock]* — For more information, refer to: **p.84 — Auto-lock settings**
- *[Display group (Screen lock)]* — For more information, refer to: **p.84 — Display group settings**
- *[Display group (Power-save mode)]* — For more information, refer to: **p.84 — Display group settings**
- *[Display orientation]* — For more information, refer to: **p.86 — Display orientation settings**
- *[Standby image]* — For more information, refer to: **p.86 — Standby image settings**
- *[Factory reset]* — For more information, refer to: **p.91 — Performing a factory reset**

While your autopilot is engaged AND the *[Autopilot control]* preset page is shown onscreen as your current data page, the following setting will be temporarily disabled:

- *[Auto select]* — For more information, refer to: **p.28 — Auto-selecting pages**

CHAPTER 9: OPERATION VIA RAYMARINE® MULTIFUNCTION DISPLAY

CHAPTER CONTENTS

9.1 Multifunction display (MFD) requirement

The Alpha Series performance display is not a standalone product. It MUST be connected to a Raymarine **Axiom-Series** or **Axiom 2-Series** Multifunction display (MFD) / chartplotter. All displays must be running the latest available software versions.

The Alpha Series is compatible with the following Raymarine Multifunction displays / chartplotters:

Compatible Raymarine MFDs	Required MFD software version
Axiom 2-Series: Axiom 2 Pro, Axiom 2 XL	LightHouse 4, v4.7.172 or later
Axiom-Series: Axiom, Axiom+, Axiom Pro, Axiom XL	LightHouse 4, v4.7.172 or later

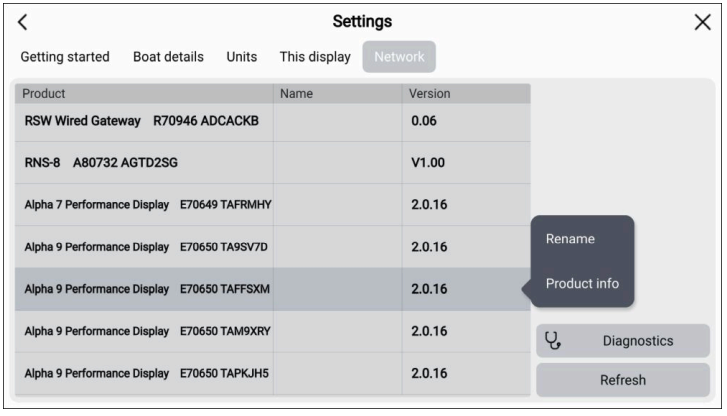
Alpha software download link
www.bit.ly/rym-alpha-download

LightHouse 4 software download link
www.bit.ly/LH4-download

9.2 Alpha-Series network operations (LightHouse 4 displays)

Some functions can be invoked remotely when using a Raymarine LightHouse 4 (v4.5.101 or later) MFD / chartplotter which is connected to the same network as your Alpha-Series performance display(s). These functions are split between either the MFD's / chartplotter's *[Network]* settings page (for configuration-based options) or the *[Sidebar]* menu (for features often required whilst sailing).

The following configuration-related functions can be invoked from the LightHouse 4 *[Network]* page: *[Homescreen > Settings > Network]*.



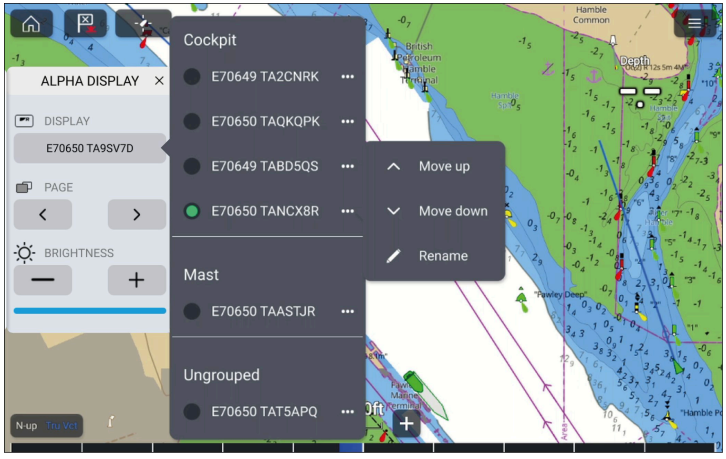
- *[Rename]* — Renames the selected performance display. If no *[Name]* has been set, the unit model and serial number will appear instead if the unit is selected on your multifunction display / chartplotter's *[Network]* tab.
- *[Product info]* — Displays a series of product information related to the selected performance display.

9.3 Alpha Series sidebar operations (LightHouse™ 4 MFD)

Some Alpha display functions can be invoked remotely when using a Raymarine® LightHouse™ 4 (v4.5.84 or later) multifunction display / chartplotter, connected to the same network as your Alpha display(s).

These functions are split between either the multifunction display / chartplotter's *[Network]* page (for configuration-based options) or *[Sidebar]* menu (for features often required whilst sailing).

When viewing an application on your multifunction display / chartplotter, you can swipe from the left edge of the screen to display the *[Sidebar]* menu. From there, select *[Alpha display]* in order to invoke the following functions remotely:



Note:
The *[Display]* option and its available sub-options are only available if more than one Alpha Series display is networked to the same system as your multifunction display / chartplotter.

- *[Display]* — Indicates the current performance display that is being operated via the *[Sidebar]* menu. A different performance display can be operated by selecting the *[Display]* option and choosing a different display from the list shown. Each Alpha Series display is sorted according to the display group that it has been assigned to.
  - *[...]* — Opens a menu with the following additional options:
    - *[Rename]* — Displays an onscreen keyboard, which can be used to edit the selected Alpha display's name.
    - *[Move up]* — Moves the selected Alpha display up within the list by one position, if multiple Alpha displays are available. This option is disabled if your Alpha display has reached the top of the display group that it has been assigned to.
    - *[Move down]* — Moves the selected Alpha display down within the list by one position, if multiple Alpha displays are available. This option is disabled if your Alpha display has reached the bottom of the display group that it has been assigned to.
- *[Page]* — Switches between the selected Alpha display's data pages. Data pages can be cycled through either using the *[<]* left option or *[>]* right option.
- *[Brightness]* — Increases or decreases the selected Alpha display's screen brightness. Brightness can be changed using the *[+]* increase option or *[–]* decrease option. The current screen brightness is indicated by the *[Brightness bar]* below the *[+]* and *[–]* options.

CHAPTER 10: SETTINGS

CHAPTER CONTENTS

10.1 Settings overview

You can access the following advanced performance display settings and product information via the *[Settings]* menu: *[Data page view > Overlay menu > Settings]*

1. *[Auto-lock]*.
2. *[Daytime colors]*.
3. *[Display group]*.
4. *[Display orientation]*.
5. *[Standby Image]*.
6. *[Alarms]*.
7. *[Backup & restore]*.
8. *[Factory reset]*.
9. *[About this device]*.

10.2 Auto-lock settings

You can configure your performance display to activate *[Screen lock]* automatically after 10 seconds of touchscreen inactivity.

To automatically lock your device:

1. Navigate to *[Data page view > Overlay menu > Settings > Auto-lock]*.
2. Select *[Automatically lock the screen after 10 seconds]*.

Note:
This setting will be temporarily disabled in the instance where the *[Autopilot control]* preset page has been created and your autopilot is engaged.

Note:
For more information on the *[Screen lock]* feature, refer to:
p.23 — Activating screen lock

10.3 Daytime color settings

By default, your performance display is set to show a *[Light]* color scheme when the *[Color mode (Day)]* setting is in use. Alternatively, if preferred, this color scheme can be changed to a *[Dark]* mode.

To configure your daytime color scheme:

1. Navigate to *[Data page view > Overlay menu > Settings > Daytime colours]*.
2. Select between *[Light]* (default) and *[Dark]*.

Light mode (default)	Dark mode
	

10.4 Display group settings

You can synchronize the *[Brightness]*, *[Screen lock]* and *[Power-save mode]* settings between your performance display and other compatible devices on your network that are assigned to the same display group.

The settings listed below can be synchronized between a Alpha Series performance display and each of the following compatible devices:

Setting	Compatible devices
[Brightness]	• Alpha Series performance display(s) • LightHouse™ 4 MFDs. • LightHouse™ 3 MFDs using software version 3.4 or greater. • SeaTalkng ® Instrument displays and Pilot controllers. • SeaTalkng ® VHF DSC Radios. • RMK-9 and RMK-10 remote keypads.
[Screen lock]	• Alpha Series performance display(s)
[Power-save mode]	• Alpha Series performance display(s)

Note:
The *[Screen lock]* and *[Power-save mode]* settings will be temporarily disabled in the instance where the *[Autopilot control]* preset page has been created and your autopilot is engaged.

Note:
For more information on which multifunction displays / chartplotters are compatible with your performance display, refer to the information found within the “Alpha Series Performance Display Installation Instructions” (**87457**).

Assigning a display group and synchronizing settings

Display groups are groups of multiple displays which share common and synchronized settings, such as screen brightness, for example. By default, your performance display is not assigned to a display group.

Note:

• Before attempting to synchronize your device, ensure that all units are powered and operational.

• For information on how to assign and unassign a display group on your multifunction display / chartplotter, refer to the latest LightHouse™ 4 Advanced Operation Instructions (**81406**).

To assign a display group:

1. Navigate to: *[Data page view > Overlay menu > Settings > Display group]*.
2. Select *[Group]*.
3. Select the display group that you want to assign your performance display to.
   The following groups are available:
   - *[None (default)]*
   - *[Helm 1]*
   - *[Helm 2]*
   - *[Cockpit]*
   - *[Flybridge]*
   - *[Mast]*
   - *[Group 1–5]*
4. Once a display group has been assigned, select the setting(s) that you want to synchronize between your performance display and any other compatible devices that you have assigned to the same display group.

Note:
For information on which devices are compatible with the *[Brightness]*, *[Screen lock]* and *[Power-save mode]* settings, refer to: **p.84 — Display group settings**

5. Select *[Sync]*.
6. Once your devices have finished synchronizing, a *[Group (setting name) enabled]* pop-up is displayed at the top of your screen.

After the synchronization process has completed, adjustments to your *[Brightness]*, *[Screen lock]* and / or *[Power-save mode]* settings will be applied to each supported device assigned to the same display group.

Unsynchronizing display group settings

To unsynchronize your *[Brightness]*, *[Screen lock]* and *[Power-save mode]* settings:

1. Navigate to: *[Data page view > Overlay menu > Settings > Display group]*.
2. Switch off the setting that you wish to unsynchronize.

10.5 Display orientation settings

Following a factory reset, your screen orientation will automatically change to *[Landscape]* or *[Portrait]*, based on your installation orientation.

Note:
Your performance display has a separate selection of pages that are available in each screen orientation (i.e. portrait or landscape):

- Any data pages which you have created will be specific to the screen orientation which they were created on.
- When switching between screen orientations, your previous setup will be saved in case you wish to revert back to your original orientation.

To change your screen orientation:

1. Navigate to: *[Data page view > Overlay menu > Settings > Display orientation]*.
2. Select between *[Landscape]* and *[Portrait]*.

Note:
This setting will be temporarily disabled in the instance where the *[Autopilot control]* preset page has been created and your autopilot is engaged.

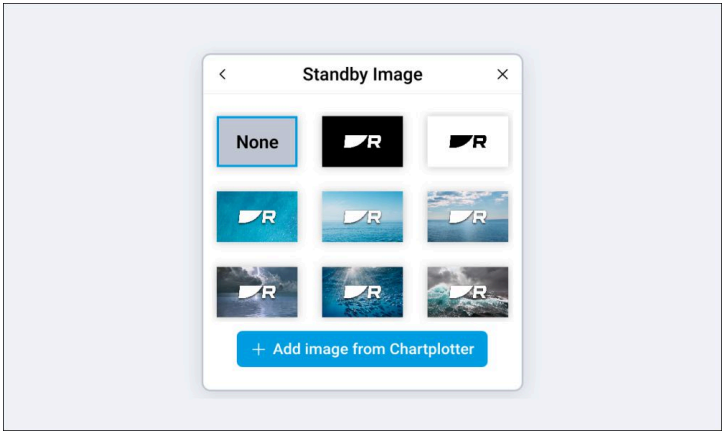
10.6 Standby image settings

You can set a preset standby image or a custom standby image to display on the performance display's screen once your boat has entered a stationary position.

Note:

- The boat is considered to be stationary once both your GPS position and heading have remained unchanged for a 5 minute duration.
- This setting will be temporarily disabled if the *[Autopilot control]* preset page has been created.

The following preset images are available:



Alternatively, you can add and set a custom standby image from a compatible multifunction display / chartplotter that is connected to the same network as your performance display.

Before attempting to add a custom standby image, an image file must first be copied to a MicroSD card using an external device (such as a PC or tablet) and then inserted into the MicroSD card slot on your multifunction display / chartplotter.

Your custom image must meet the following requirements:

Note:

• Custom images must be in the .png format.

• You cannot use copyrighted images without permission from the copyright owner.

• For optimum image quality, the resolution of the image should match the resolution of your performance display.

Custom images are unique to each performance display and will need to be configured individually.

Performing a factory reset will remove any custom images that have been uploaded to the performance display.

Refer to the following table for a full list of screen resolutions:

Display variant	Screen resolution / DPI
Alpha 7 performance display	• Screen resolution: 1024 (H) x 600 (V) • DPI : 170
Alpha 9 performance display	• Screen resolution: 1280 (H) x 720 (V) • DPI : 163

Selecting a preset standby image

To set a preset standby image:

1. Navigate to: *[Data page view > Overlay menu > Settings > Standby Image]*.
2. Select the standby image that you wish to display. Once selected, a blue highlight will appear to indicate that your selection has been confirmed.

Once your vessel is stationary, your selected image will appear.

Adding and selecting a custom standby image

To set a custom standby image:

Note:
A maximum of 10 custom standby images can exist at any one time per performance display.

To set a custom standby image:

1. Navigate to: *[Data page view > Overlay menu > Settings > Standby Image]*.
2. Select the *[Add image from MFD]* blue plus (+) icon.
3. Use the file browser to select the multifunction display / chartplotter and MicroSD card where your image is saved.
4. Select the image that you want to assign as your standby image.
5. Select the *[Done]* button, which is located in the top right corner of your screen.

   The *[Standby Image]* screen is displayed.
6. Select the standby image that you wish to display. Once selected, a blue highlight will appear to indicate that your selection has been confirmed.

Once your vessel is stationary, your selected image is displayed.

Removing and deleting a standby image

To remove or delete a standby image:

1. Navigate to: *[Data page view > Overlay menu > Settings > Standby Image]*.
2. To **remove** your currently selected standby image:
   i. Select *[None]*.
   ii. Select *[Done]* at the bottom edge of your screen to confirm your selection.
3. To **permanently delete** an existing image:
   i. Tap and hold the image for additional options.
   ii. Select *[Delete]*.
   iii. Select *[Yes]* to confirm your selection.

10.7 Alarm settings

Alarms are used to alert you to a danger, a hazard or a situation requiring your attention. Your performance display is capable of acting as a repeater for alarms raised by the multifunction display / chartplotter on your system. Once an alarm is triggered, the audio buzzer built into your performance display will sound.

In order for an alarm to be raised on your performance display, **the alarm must be separately enabled on both** your multifunction display / chartplotter and your performance display.

Alarms can be enabled or disabled on your multifunction display / chartplotter via the *[Alarms]* page: *[Homescreen > Alarms > Settings]*.

For more information on how to acknowledge alarms, the functionality of each alarm and how to further configure your multifunction display / chartplotter's alarm settings, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).

The following alarms can be toggled either on or off for the performance display:

Category	Alarm(s)
[AIS]	• *[AIS connection lost]* • *[Dangerous AIS target]* • *[Lost AIS target]* • *[AIS safety messages]* • *[AIS hardware alarm]*
[Anchor]	• *[Anchor drift]* • *[Deep anchor]* • *[Shallow anchor]*
[Battery]	A toggle is available for each battery that is detected by your performance display. For more information, refer to: **p.52 — Battery data** • *[(Battery name) — battery (number)]*
[DSC alarms]	*[DSC alarms]*
[Depth]	• *[Deep water]* • *[Shallow depth]* • *[Fishing zone arrival]*
[Engine alarms]	*[Engine alarms]*
[Generator alarms]	*[Generator alarms]*
[Low fuel remaining]	*[Low fuel remaining]*
[Man overboard (MOB)]	*[Man overboard (MOB)]* **Note:** The *[Man overboard (MOB)]* alarm is enabled by default.
[Navigation]	• *[Waypoint arrival]* • *[Position lost]* • *[Off track]* • *[Interception arrival]* • *[Position drift]*
[Pilot alarms](1)	*[Pilot alarms]* (1)
[Radar]	• *[Dangerous Radar target]* • *[Lost Radar target]* • *[Guard zone 1]* • *[Guard zone 2]*
[Speed]	• *[Boat speed high]* • *[Boat speed low]*

Category	Alarm(s)
[Temperature]	• *[Water temperature high]* • *[Water temperature low]* If an AX8 camera is connected to the same system as your performance display, an additional temperature toggle will be available. • *[AX8 camera temperature]*
[Wind]	• *[AWS high]* • *[AWS low]* • *[AWA high]* • *[AWA low]* • *[TWS high]* • *[TWS low]* • *[TWA high]* • *[TWA low]*

Note:
(1) *[Pilot alarms]* will be automatically enabled and locked once the *[Autopilot control]* page has been created.

Acknowledging alarms

Follow the steps below to acknowledge an active alarm.

With an alarms notification displayed onscreen:

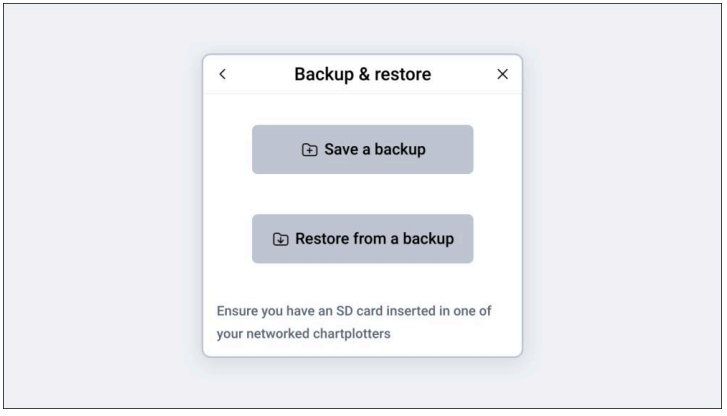
1. Select *[OK]*.
   The notification is dismissed and the audible tone is stopped.

An acknowledged alarm remains active until the conditions that triggered the alarm are no longer present.

Note:
If an alarm notification includes an *[Edit]* button, selecting it will display the relevant setting in the Alarms menu so that, if required, you can change the alarm threshold.

10.8 Backup and restore settings

Page configurations and system settings can be backed up to or restored from a MicroSD card inserted into a connected multifunction display / chartplotter's card reader slot.



Backing up settings

Note:
If you have more than one Alpha Series performance display connected to your system, you will need to backup and restore each unit individually.

To backup your page configurations and system settings:

1. Insert a MicroSD card into a card reader slot on your multifunction display or a card reader (e.g. RCR-2) which has been connected to your multifunction display.
2. Navigate to: *[Data page view > Overlay menu > Settings > Backup & restore]*.
3. Select *[Save a backup]*.
4. Select the multifunction display which your MicroSD card has been inserted into.
5. Select the MicroSD card where the backup will be stored.
   If no MicroSD card has been detected by your multifunction display, a 'No SD card detected' prompt will appear.

6. Navigate the file browser and select the root file directory of your MicroSD card or a (sub)folder on your MicroSD card where you wish to save the backup file.

   Once selected, your selection will be highlighted.

7. Press *[Select]* to confirm your save location.

   A *[Save as]* screen will appear.

8. (Optional) Enter a name for your backup file using the onscreen keyboard.

   By default, your backup file will be saved as: 'alpha_serial number_date_time'.

   *The default backup file name date and time format is taken from your multifunction display's [Date format] and [Time format] settings. The [Date format] and [Time format] settings can be configured from the [Units] menu on your multifunction display: [Homescreen > Settings > Units > Date format / Time format]. For more information, refer to the LightHouse 4 Advanced Operation Instructions (**81406**).*

9. Press *[Save]* to confirm your file name choice and save your backup file.

   If the specified file name already exists in your file destination, a [Name conflict] pop-up will appear:

   - *Select [Yes] to overwrite the existing file with your new backup file.*
   - *Select [No] to return to the [Save as] screen.*

Once saved, a *[Backup saved]* pop-up will appear at the top of your screen.

Note:
If you are experiencing issues, refer to the troubleshooting advice found within the following section: **p.93 — Troubleshooting**

Restoring settings

Note:

- If you have more than one Alpha Series performance display connected to your system, you will need to backup and restore each unit individually.
- The screen size and orientation of your performance display must match the screen size and orientation of the performance display which the backup file was created from.

To restore your page configurations and system settings:

1. Insert a MicroSD card (which contains your backup file) into a card reader slot on your multifunction display or a card reader (e.g. RCR-2) which has been connected to your multifunction display.
2. Navigate to: *[Data page view > Overlay menu > Settings > Backup & restore]*.
3. Select *[Restore from a backup]*.
4. Select the multifunction display which your MicroSD card has been inserted into.
5. Select the MicroSD card where the backup is stored.

   If no MicroSD card has been detected by your multifunction display, a 'No SD card detected' prompt will appear.

6. Navigate the file browser and select either the root file directory of your MicroSD card or a (sub)folder on your MicroSD card where your backup file is saved.
7. Select the backup file you wish to restore.

   Once selected, your selection will be highlighted.

8. Press *[Select]* to confirm your backup file selection.

   A *[Restore backup]* pop-up will appear:

   - Select *[Yes]* to replace all current page configurations and system settings with those found on the backup file.
   - Select *[No]* to cancel the file restoration process and return to the file browser.

Once restored, a *[Backup restored]* pop-up will appear at the top of your screen.

Note:
If you are experiencing issues, refer to the troubleshooting advice found within the following section: **p.93 — Troubleshooting**

10.9 Performing a factory reset

If you wish to restore your data pages to the default configuration, or, if you are experiencing problems with the Alpha Series performance display which cannot be resolved using the troubleshooting advice provided, you may need to perform a *[Factory reset]*.

Note:

• Restoring your performance display to factory default settings will cause all custom data pages to be deleted.

• This setting will be temporarily disabled in the instance where the *[Autopilot control]* preset page has been created and your autopilot is engaged.

1. To *[Factory reset]* your device via the *[Settings]* menu:
   i. Navigate to: *[Data page view > Overlay menu > Settings > Factory reset]*.
   ii. Select *[Reset]*.
2. To *[Factory reset]* your device via the physical recovery button:
   i. Press the factory reset button on the rear of your unit (to the left of the daisy-chain connector) when applying power.

The performance display will now reset to factory default settings, all user data will be removed and the display will reboot to the startup wizard.

10.10 About this device

If you are experiencing issues with your device, the following product information may help to diagnose your problem.

Product information:

Item	Description
[Product description]	Provides a description of the product's name.
[Product code / ID]	Provides the product's part number.
[Product serial number]	Provides the product's serial number.
[Software version number]	Provides the software version number that the product is currently running.
[Software component versions]	Provides the software component version application and platform numbers that the product is currently running.

Operating conditions:

Item	Description
[Up time since powering on]	Provides a value for the total amount of time that the product has been running for during the current session.
[Total operating hours]	Provides a value for the total amount of time that the product has been in operation for.
[Operating voltage]	Provides a value for the product's operating voltage.
[Operating current]	Provides a value for the product's operating current.
[Operating temperature]	Provides a value for the product's operating temperature.

System Installation / Configuration:

Item	Description
[Devices attached]	Provides the product ID and serial number(s) of other device(s) that are currently connected to the product.
[Network port 1]	Provides the data transfer rate of the connected daisy-chained performance display. If no daisy-chain connection has been made, this value will display as 'Down'.
[Network port 2]	Provides the data transfer rate of the connected multifunction display / chartplotter.
[IP Address]	Provides the product's IP address.

10.11 Language settings

By default, the language displayed on your performance display is defined by the user interface language option selected on your multifunction display / chartplotter. The *[Select language]* menu can be accessed from the LightHouse™ 4 Homescreen: *[Homescreen > Settings > Getting started > Select language]*.

For more information on the multifunction display / chartplotter language options available, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).

In the instance that you do not have a multifunction display / chartplotter connected to your performance display, and, if your system has not previously been setup with a multifunction display / chartplotter, you can choose which language you want the performance display's user interface to use during the unit's startup wizard.

The following startup wizard language options are available:

Available languages	
Arabic (ar-AE)	Bulgarian (bg-BG)
Chinese (Simplified) (zh-CN)	Chinese (Traditional) (zh-TW)
Croatian (hr-HR)	Czech (cs-CZ)
Danish (da-DK)	Dutch (nl-NL)
English (en-GB)	English (en-US)
Estonian (et-EE)	Finnish (fi-FI)
French (fr-FR)	German (de-DE)
Greek (el-GR)	Hebrew (he-IL)
Hungarian (he-IL)	Icelandic (is-IS)
Indonesian (Bahasa) (id-ID)	Italian (it-IT)
Japanese (ja-JP)	Korean (ko-KR)
Latvian (lv-LV)	Lithuanian (lt-LT)
Malay (ms-MY ZSM)	Norwegian (nb-NO)
Polish (pl-PL)	Portuguese (Brazilian) (pt-BR)
Russian (ru-RU)	Slovenian (sl-SL)
Spanish (es-ES)	Swedish (sv-SE)
Thai (th-TH)	Turkish (tr-TR)
Vietnamese (vi-VN)	

10.12 Units of measurement settings

The units of measurement displayed on your performance display is defined by the *[Units]* options selected on your multifunction display / chartplotter. The *[Units]* menu can be accessed from the LightHouse™ 4 Homescreen: *[Homescreen > Settings > Units]* or from the Dashboard app: *[Menu > Settings > Units]*.

For more information on the unit options available, refer to the LightHouse™ 4 Advanced Operation Instructions (**81406**).

CHAPTER 11: TROUBLESHOOTING

CHAPTER CONTENTS

11.1 Troubleshooting

The troubleshooting section provides possible causes and the corrective action required for common problems that are associated with the installation and operation of your product.

Before packing and shipping, all products are subjected to comprehensive testing and quality assurance programs. If you do experience problems with your product, this section will help you to diagnose and correct problems to restore normal operation.

If after referring to this section you are still having problems with your product, please refer to the *Technical support and servicing* section of this manual for useful links and contact details.

11.2 Power up troubleshooting

Troubleshooting assistance with typical causes of power-related issues, and their solutions.

Product does not power up, or keeps switching off

Possible causes	Possible solutions
Blown fuse / tripped breaker:	1. Check condition of relevant fuses and breakers and connections, replace if necessary. (Refer to the *Power Connections* section of your product's Installation Instructions for fuse ratings.) 2. If fuse keeps blowing, check for cable damage, broken connector pins, or incorrect wiring.
Poor / damaged / insecure power supply cable / connections:	1. Check that the power cable connector is correctly orientated and fully inserted into the product's *Power* connector, and locked in position. 2. Check the power supply cable and connectors for signs of damage or corrosion, and replace if necessary. 3. With the product switched on, try carefully flexing the power cable near to the product's *Power* connector to see if this causes the unit to restart or lose power. Replace if necessary. 4. Check the vessel's battery voltage and the condition of the battery terminals and power supply cables, ensuring connections are secure, clean and free from corrosion. Replace if necessary. 5. With the product under load, using a multi-meter, check for high voltage drop across all connectors / fuses etc, and replace if necessary.
Incorrect power connection:	The vessel's power supply may be wired incorrectly. Ensure that the product's *Installation Instructions* have been followed completely.

Product will not start up (restart loop)

Possible causes	Possible solutions
Power supply and connection:	See possible solutions from the table above, entitled '*Product does not power up, or keeps switching off*'.
Software corruption:	1. In the unlikely event that the product's software has become corrupted, try downloading and installing the latest software from: www.bit.ly/rym-software 2. If your product includes a display: as a last resort, attempt to perform a 'Power on Reset'. Be aware that this will delete all settings / presets and user data, and revert the unit back to factory default settings.

Performing a factory reset

If you wish to restore your data pages to the default configuration, or, if you are experiencing problems with the Alpha Series performance display which cannot be resolved using the troubleshooting advice provided, you may need to perform a *[Factory reset]*.

Note:

• Restoring your performance display to factory default settings will cause all custom data pages to be deleted.

• This setting will be temporarily disabled in the instance where the *[Autopilot control]* preset page has been created and your autopilot is engaged.

1. To *[Factory reset]* your device via the *[Settings]* menu:
   i. Navigate to: *[Data page view > Overlay menu > Settings > Factory reset]*.
   ii. Select *[Reset]*.
2. To *[Factory reset]* your device via the physical recovery button:
   i. Press the factory reset button on the rear of your unit (to the left of the daisy-chain connector) when applying power.

The performance display will now reset to factory default settings, all user data will be removed and the display will reboot to the startup wizard.

11.3 System data troubleshooting

Troubleshooting assistance with typical causes of system data issues, and their solutions.

System data is unavailable at all displays

Possible causes	Possible solutions
Data is not being received at the display:	1. Check the relevant product, network cabling and connections for signs of damage or corrosion, and replace if necessary.
Data source is not operating:	1. Check the source of the missing data for signs of damage or corrosion, and replace if necessary. 2. If possible, check that the data source is correctly powered and operational. 3. Refer to the *Installation Instructions* provided with the equipment to ensure it has been correctly installed.
Software mismatch between equipment may prevent communication:	1. Ensure that all products have the latest software installed.

System data is missing from some, but not all, displays

Possible causes	Possible solutions
Connection problem:	1. Check the product's attached cable(s) and connections for signs of damage or corrosion, and replace if necessary.
Software corruption:	1. In the unlikely event that the product's software has become corrupted, try downloading and installing the latest software from www.bit.ly/rym-software 2. Refer to the product's *Operation Instructions* for details on updating software for connected devices.
Software mismatch between equipment may prevent communication:	1. Ensure that all products have the latest software installed.

Incorrect data reported

Possible causes	Possible solutions
Data source calibration error:	1. Switch off power supply to system, and then switch back on again. 2. Re-calibrate or re-configure the data source, following the instructions provided with the relevant device(s).

11.4 System data: backup and restore troubleshooting

Troubleshooting assistance with typical causes of issues related to the backup and restoration of system data, and their solutions.

Cannot save backup file

Possible causes	Possible solutions
Not enough space on the memory card being used for the backup:	• Ensure that sufficient storage space exists on the memory card before attempting to *[Save a backup]* via the *[Settings]* menu.

Cannot restore backup file

Possible causes	Possible solutions
Selected file is for a different product variant:	• Ensure that the Alpha unit that you are attempting to restore from a backup is the same specific product variant (e.g. Alpha 7) from which the backup file was created.
Selected file is from a device set to a different display orientation mode:	• Ensure that the Alpha unit that you are attempting to restore is set to the same *[Landscape]* / *[Portrait]* mode as the Alpha unit from which the backup file was created.

11.5 Miscellaneous troubleshooting

Miscellaneous problems and their possible causes and solutions are described here.

Product behaves erratically (frequent unexpected resets / system crashes, or other erratic behavior):

Possible causes	Possible solutions
Intermittent problem with power to the product.	• Check relevant fuses and breakers. • Check that the power supply cable is sound, and that all connections are tight and free from corrosion. • Check that the power source is of the correct voltage, and that sufficient current is being provided to the product.
Software mismatch on system (upgrade required):	Go to https://bit.ly/rym-software for the latest software downloads.
Corrupt data / other unknown issue:	Perform a factory reset — refer to the relevant *Installation Instructions* document. **Important:** This will result in the loss of any settings and user data stored on the product. Save any important data to a memory card before resetting.

CHAPTER 12: TECHNICAL SUPPORT

CHAPTER CONTENTS

12.1 Raymarine technical support and servicing

Raymarine provides a comprehensive product support service, as well as warranty, service, and repairs. You can access these services through the Raymarine website, telephone, and e-mail.

Product information

If you need to request service or support, please have the following information to hand:

- Product name.
- Product identity.
- Serial number.
- Software application version.
- System diagrams.

Servicing and warranty

Raymarine offers dedicated service departments for warranty, service, and repairs.
Visit the Raymarine website to **read the latest warranty policy**, and **register** your product's warranty online:

- www.bit.ly/rym-warranty

United Kingdom (UK), EMEA, and Asia Pacific:

- Web: www.bit.ly/rym-service
- Tel: +44 (0)1329 246 932

United States (US):

- Web: www.bit.ly/rym-service
- Tel: +1 (603) 324 7900

Web support

Please visit the "Support" area of the Raymarine website for:

- **Manuals and Documents** — www.bit.ly/rym-docs
- **Technical support forum** — www.bit.ly/rym-support
- **Software updates** — www.bit.ly/rym-software

Telephone and online support

Region	Contact details
All regions	**Online support:** www.bit.ly/rym-support
United Kingdom (UK) and EMEA	**Telephone:** +44 (0)1329 246 777 **Address:** Marine House, Cartwright Drive, Fareham, PO15 5RJ, UK.
United States (US)	**Telephone:** Tel: +1 (603) 324 7900 (Toll-free: +800 539 5539) **Address:** 110 Lowell Road, Hudson, NH 03051, USA.
Australia and New Zealand (Raymarine subsidiary)	**Telephone:** +61 2 8977 0300 **Address:** Suite 1.01, 26 Rodborough Road, Frenchs Forest, NSW, 2086, Australia.
France (Raymarine subsidiary)	**Telephone:** +33 (0)1 46 49 72 30 **Address:** 35 avenue Michel Crépeau, 17000 La Rochelle - France.
Germany (Raymarine subsidiary)	**Telephone:** +49 40 237 808 0 **Address:** Atlantic-Haus, Zirkusweg 1, 20359 Hamburg.
Italy (Raymarine subsidiary)	**Telephone:** +39 02 9945 1001 **Address:** Via L. Manara 2, 20812 Limbiate (MB), Italy.
Spain (Authorized Raymarine distributor)	**Telephone:** +34 96 2965 102 **Email:** sat@azimut.es
Netherlands / Benelux (Authorized Raymarine distributor)	**Telephone:** +31 (0)26 3614 905 **Address:** Florijnweg 21G, 6883 JN VELP, Nederland.

Region	Contact details
Sweden (Raymarine subsidiary)	**Telephone:** +46 (0)317 633 670 **Address:** Bolshedens Industriväg 18, 427 50 Billdal, Sweden.
Finland (Raymarine subsidiary)	**Telephone:** +358 (0)207 619 937 **Address:** Suomalaistentie 1-3, 02270 Espoo, Finland.
Norway (Raymarine subsidiary)	**Telephone:** +47 692 64 600 **Address:** Årvollskogen 30, 1529 Moss, Norway.
Denmark (Raymarine subsidiary)	**Telephone:** +45 437 164 64 **Address:** Centervej 7, 4600 Køge, Denmark.
Russia (Distributor)	**Telephone:** Tel: +7 495 788 0508 **Email:** info@mikstmarine.ru

12.2 Diagnostic product information

Diagnostic product information can be viewed and exported from a Raymarine LightHouse multifunction display, for supported products networked using RayNet (Ethernet), RJ45, RJ45 (SeaTalk HS) or SeaTalk NG / NMEA 2000 cables.

Diagnostic product information includes technical data related to the connected product, such as serial numbers, network addresses, firmware version numbers, and so on. It is useful for 2 main purposes:

1. Sending detailed product information to the Raymarine product support team, in the event of a problem or fault with your product. The information can be exported to a MicroSD card, and you can then copy the file for the purposes of emailing it to the product support team. For contact details, refer to: **p.98 — Technical support**
2. Maintaining detailed off-boat records. This is particularly useful for vessels that have multiple Raymarine products installed.

To view or export diagnostic product information, access the *[Diagnostics]* menu. For instructions on how to access this menu, refer to the relevant *Operation Instructions* for your multifunction display.

12.3 Learning resources

Raymarine has produced a range of learning resources to help you get the most out of your products.

Video tutorials

Raymarine official channel on YouTube

- http://www.youtube.com/user/RaymarineInc

Training courses

Raymarine regularly runs a range of in-depth training courses to help you make the most of your products. Visit the Training section of the Raymarine website for more information:

- www.bit.ly/rym-training

Technical support forum

You can use the Technical support forum to ask a technical question about a Raymarine product or to find out how other customers are using their Raymarine equipment. The resource is regularly updated with contributions from Raymarine customers and staff:

- www.bit.ly/rym-support

Appendix A Sailing glossary

Common terms and abbreviations used in sailing.

Term	Meaning
Apparent Wind	The wind flow observed when the vessel is in motion, relative to the vessel's heading. Apparent wind is different from True wind in that it takes into account your vessel's movement, i.e.: speed and direction of travel. Apparent wind is the raw data that is reported by wind transducers, which can then be used in conjunction with other data sources to calculate True wind. Supported data: • NMEA 2000: PGN 130306 • NMEA 0183: MWV
Apparent Wind Angle (AWA)	The wind angle observed when the vessel is in motion, relative to the vessel's heading. AWA is a combination of the true angle of the wind and the angle that is experienced due to the direction and speed of travel.
Apparent Wind Speed (AWS)	The wind speed observed when the vessel is in motion. AWS is a combination of the true speed of the wind and the speed at which you are travelling.
Close-hauled / Beating	Generally, when sailing upwind, the tighter the angle at which the vessel sails with respect to the wind, the faster the vessel will travel. When a vessel's sails are pulled in tightly to the vessel's centerline in order to maximize the vessel's speed when travelling upwind, it is known as sailing "Close-hauled" or "beating". There's a "no-go" zone directly into the wind where a vessel cannot sail in a forward motion. Also, sailing too close to the wind ("pinching") can reduce both speed and efficiency in terms of the vessel's forward motion. Therefore, maximizing forward motion when sailing upwind requires the optimization of both the vessel's sail rigging and the vessel's angle with respect to the wind direction, which is typically 30 to 45 degrees.
Distance to Tack	The travel distance remaining until you need to tack.
Distance to Line	Distance remaining to the closest point along the race start line.
Downwind	Moving in the direction that the wind is blowing.
Ground Wind Direction (GWD)	The direction of the wind relative to north, as observed on land. This is the actual direction the wind is blowing. In addition to Apparent Wind Angle (AWA), Course Over Ground (COG) from a GNSS receiver is also required in order to calculate GWD.
Ground Wind Speed (GWS)	The wind speed observed when stationary, as observed on land. GWS is the actual speed at which the wind is blowing over land. In addition to Apparent Wind Speed (AWS), Speed Over Ground (SOG) data from a GNSS receiver is also required in order to calculate GWS.

Term	Meaning
Header	A wind shift which causes your vessel to turn more downwind.
Laylines	Vector lines showing the course the boat will take when sailing at the optimum angle to the wind, on either tack.
Leeway	The difference in angle between desired heading and actual course, caused by sideways movement of a sailing boat due to the wind.
Lift	A wind shift which allows your boat to turn upwind and closer to your destination.
Line bias	The distance advantage conferred by crossing the start line at the favored end (the end which is more upwind) of the race start line.
Polar table	A performance profile for a vessel, showing the vessel speed achievable at varying angles to the wind, with varying wind speed. In sailing, the Velocity Made Good (VMG) principle demonstrates that travelling in a straight line is not always the quickest route, and polars enable you to optimize your vessel's performance to its best advantage, by improving the accuracy of laylines to display how far you need to sail on a current tack to reach a target waypoint after tacking, and taking wind conditions into consideration.
RSW-Wired (Raymarine Smart Wind)	The Raymarine Smart Wind transducer series. The RSW-Wired series of transducers include a built-in attitude sensor, which is used to provide more accurate readings than standard wind transducers.
Sail plan	Sail configuration recommendations based on wind conditions.
Sailing upwind	Sailing close to the wind direction.

Term	Meaning
Tack	A course change made by a sailing vessel, by turning its heading into and through the wind.
Tacking	The zig-zag maneuver a sailing vessel makes when travelling upwind.
Time To Burn (TTB)	The time remaining during race start countdown before the vessel needs to start moving towards the start line at full speed.
Time to Tack	The amount of time remaining until you need to tack, if the current course and speed are maintained based on the calculated laylines.
True Wind	The actual wind flow; the wind flow that you experience on the water, when stationary. True wind is calculated from Apparent wind data from a wind transducer and STW (Speed Through Water) data from a speed transducer.
True Wind Angle (TWA)	The angle of the wind over water, relative to the vessel's bow, observed when stationary.
True Wind Direction (TWD)	The direction of the wind relative to North. This is the actual direction in which the wind is blowing. In addition to Speed Through Water (STW), Heading data is also required in order to calculate TWD.
True Wind Speed (TWS)	The wind speed observed when stationary, on the water. TWS is the actual speed at which the wind is blowing over water.
Velocity Made Good (VMG)	Sailing term related to the component of a sail vessel's velocity vector that is in the direction of true wind.
Wind shift	The amount of variation in True Wind Direction (TWD) over time.

Appendix B Software release history

The list below is a cumulative list of the new features introduced in subsequent releases of the Alpha Series performance display software, since the initial release (v1.0.77).

This list includes *new features* only. It does NOT include software maintenance items, such as bug fixes or performance improvements.
To download the software, and view the complete list of all software updates, including new features, bug fixes, and performance improvements, visit:

Alpha software download link
www.bit.ly/rym-alpha-download

Alpha Series performance display, v3.1.9 new features:
(Software release date: *January 2025*)

- Maintenance release.

Alpha Series performance display, v3.0.50 new features:
(Software release date: *September 2024*)

New feature	More information
Support for 'Autopilot control' via the performance display.	**p.66 — Autopilot control overview**
New data items ('Distance to zero charge', 'Total time to zero' and 'Total state of charge') added to the 'Battery data' data category.	**p.52 — Battery data**
New data item ('Jack plate position') added to the 'Engine data' data category.	**p.54 — Engine data**
New data items ('Total propulsive fuel (vol)' and 'Total propulsive fuel (%)') added to the 'Fuel data' data category.	**p.56 — Fuel data**
New data items ('Pilot status' and 'Locked heading') added to the 'Pilot data' data category.	**p.60 — Pilot data**

Alpha Series performance display, v2.0.27 new features:
(Software release date: *February 2024*)

New feature	More information
Added a new 'Next Leg Information' sailing page preset.	**p.34 — Sailing page presets**
Added a new 'Steering arrows' widget option for the 'Digits' widget type.	**Digit widget options**
Added a new 'Trim tab' widget type.	**p.44 — Trim tabs widget**
Added support for IP cameras, a new 'Camera' widget type and 'Camera' data items.	• **p.45 — Camera widgets** • **p.52 — Data item and widget overview**
Added a new 'Waypoint rounding (leave to)' graphical widget type.	**p.48 — Waypoint rounding (leave to) widget**
Added a new 'Dynamic zoomed gauge' variant of the 'Wind performance gauge' widget type.	**p.49 — Wind performance gauge (Dynamic zoomed gauge)**
Added a new 'Next Leg TWA' graphical widget type.	**p.51 — Next Leg TWA widget**
Added new 'Load cell' data items.	**p.52 — Data item and widget overview**

New feature	More information
Added the following additional new data items: • Exhaust gas temperature • Max SOG (all time) • Opposite tack SOG • Opposite tack COG • Opposite tack heading • Next leg bearing • Next leg TWA • Target TWA • Target AWA	**p.52 — Data item and widget overview**
Added a new ‘Ping start line’ widget function for the ‘Race timer’, ‘Line bias’, ‘Dist to line’, and ‘Time to burn’ data items.	**p.64 — Widget functions**
Added a new ‘Backup and restore’ setting.	**p.89 — Backup and restore settings**

Alpha Series performance display, v1.0.77 new features:
(Software release date: *September 2023*)

- Initial public release.

Index

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