i70 Instrument display

User reference

Raymarine®

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Chapter 1: Important information

Safety notices

⚠️ **Warning: Product installation and operation**

This product must be installed and operated in accordance with the instructions provided. Failure to do so could result in personal injury, damage to your vessel and/or poor product performance.

⚠️ **Warning: Ensure safe navigation**

This product is intended only as an aid to navigation and must never be used in preference to sound navigational judgment. Only official government charts and notices to mariners contain all the current information needed for safe navigation, and the captain is responsible for their prudent use. It is the user's responsibility to use official government charts, notices to mariners, caution and proper navigational skill when operating this or any other Raymarine product.

Caution: Cleaning

When cleaning this product:

- Do NOT wipe the display screen with a dry cloth, as this could scratch the screen coating.
- Do NOT use abrasive, or acid or ammonia based products.
- Do NOT use a jet wash.

Caution: Service and maintenance

This product contains no user serviceable components. Please refer all maintenance and repair to authorized Raymarine dealers. Unauthorized repair may affect your warranty.

Caution: Use the sun covers

To protect your product against the damaging effects of ultra violet light, always fit the sun covers when the product is not in use.

TFT LCD 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 Liquid Crystal Displays (LCDs).

In common with all Thin Film Transistor (TFT) LCD units, the screen may exhibit a few (less than 7) wrongly illuminated pixels. These may appear as black pixels in a light area of the screen or as colored pixels in black areas.

Water ingress

Water ingress disclaimer

Although the waterproof rating capacity of Raymarine products exceeds that called for by the IPX6 standard, water intrusion and subsequent equipment failure may occur if any Raymarine equipment is subjected to commercial high pressure washing. Raymarine will not warrant equipment subjected to high pressure washing.

Disclaimers

This product (including the electronic charts) is intended to be used only as an aid to navigation. It is designed to facilitate use of official government charts, not replace them. Only official government charts and notices to mariners contain all the current information needed for safe navigation, and the captain is responsible for their prudent use. It is the user's responsibility to use official government charts, notices to mariners, caution and proper navigational skill when operating this or any other Raymarine product. This product supports electronic charts provided by third party data suppliers which may be embedded or stored on memory card. Use of such charts is subject to the supplier's End-User Licence Agreement included in the documentation for this product or supplied with the memory card (as applicable).

Raymarine does not warrant that this product is error-free or that it is compatible with products manufactured by any person or entity other than Raymarine.

This product uses digital chart data, and electronic information from the Global Positioning System (GPS) which may contain errors. Raymarine does not warrant the accuracy of such information and you are advised that errors in such information may cause the product to malfunction. Raymarine is not responsible for damages or injuries caused by your use or inability to use the product, by the interaction of the product with products manufactured by others, or by errors in chart data or information utilized by the product and supplied by third parties.

EMC conformance

Raymarine equipment and accessories conform to the appropriate Electromagnetic Compatibility (EMC) regulations for use in the recreational marine environment.

Correct installation is required to ensure that EMC performance is not compromised.

Suppression ferrites

Raymarine cables may be fitted with suppression ferrites. These are important for correct EMC performance. If a ferrite has to be removed for any purpose (e.g. installation or maintenance), it must be replaced in the original position before the product is used.

Use only ferrites of the correct type, supplied by Raymarine authorized dealers.

Connections to other equipment

Requirement for ferrites on non-Raymarine cables

If your Raymarine equipment is to be connected to other equipment using a cable not supplied by Raymarine, a suppression ferrite MUST always be attached to the cable near the Raymarine unit.

Declaration of conformity

Raymarine Ltd. declares that this product is compliant with the essential requirements of EMC directive 2004/108/EC.

The original Declaration of Conformity certificate may be viewed on the relevant product page at www.raymarine.com.

Product disposal

Dispose of this product in accordance with the WEEE Directive.

The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment. Whilst the WEEE Directive does not apply to some Raymarine products, we support its policy and ask you to be aware of how to dispose of this product.

Warranty registration

To register your Raymarine product ownership, please visit www.raymarine.com and register online.

It is important that you register your product to receive full warranty benefits. Your unit package includes a bar code label indicating the serial number of the unit. You will need this serial number when registering your product online. You should retain the label for future reference.

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.

Chapter 2: Handbook information

Chapter contents

2.1 About this handbook

This handbook describes how to operate your product in conjunction with compatible peripheral equipment.

It assumes that all peripheral equipment connected to the system is compatible, correctly installed and commissioned in accordance with the products installation instruction. This handbook is intended for users of varying marine abilities, but assumes a general level of product knowledge, nautical terminology and practices.

2.2 i70 Handbooks

The i70 Instrument has the following handbooks available:

i70 Handbooks

Description	Part number
Installation and commissioning instruction	87131
Operating instructions (quick reference)	86141
User reference handbook	81330
Mounting template	87130

Additional handbooks

Description	Part number
SeaTalkng reference manual	81300

The latest version of documents are available to download as PDF's from www.raymarine.com.

Please check the website to ensure you have the latest version.

2.3 Before using the i70

Before using the instrument under way it is important that it is properly set up as described in the installation instruction.

First time setup

The first time the instrument is powered on only, i70 provides on-screen instructions for the initial set up. If your instrument has been installed by a professional installer, this process may already have been carried out.

The first time setup screens takes you through the following:

• Language selection

• Vessel type selection

> **Note:** First time set up may be bypassed if the data is already available on the system, e.g. via an already installed instrument display.

Calibrate essential data

Before using the i70 you must calibrate essential data to ensure that the readings displayed are accurate.

Use the transducer Setup menu: **Main menu > Setup > Transducer setup** to calibrate.

• Wind

• Speed

• Depth

• Temperature

You should perform the above for any installation affecting the transducers.

Please refer to the installation instruction for details on setting up the instrument display and associated transducers for first use.

Chapter 3: Getting started

Chapter contents

3.1 System integration

The i70 Instrument provides multiple marine instrument functions in a single unit. The instrument displays information received from transducers and other sensors around the boat. There are multiple pages of information available, which you can customize to suit your needs.

The diagram below illustrates some of the various external devices that can be connected to your instrument display.
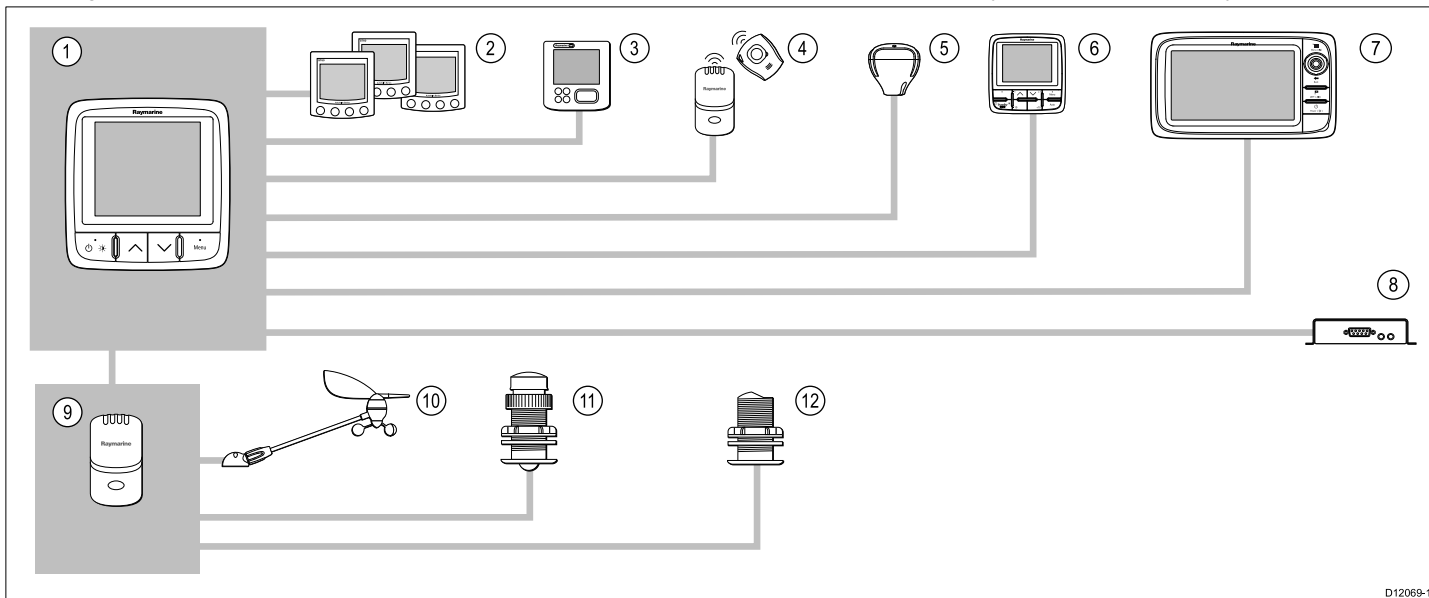
D12069-1

Item	Device type
1.	i70 Instrument display
2.	SeaTalk Instrument displays
3.	SeaTalk^{ng} Instrument displays
4.	MOB (connectivity via SeaTalk to SeaTalk^{ng} converter

Item	Device type
5.	SeaTalk^{ng} GPS receiver
6.	SeaTalk^{ng} Pilot controllers
7.	Raymarine Multifunction displays
8.	AIS receiver / transceiver
9.	Transducer pods
10.	Analogue wind transducers
11.	Analogue speed transducers
12.	Analogue depth transducers
Other devices not shown:	Smart transducers (e.g. DST800, DT800) NMEA2000 devices (e.g. trim tab control, engine data)

3.2 Instrument controls

Control layout and functions.
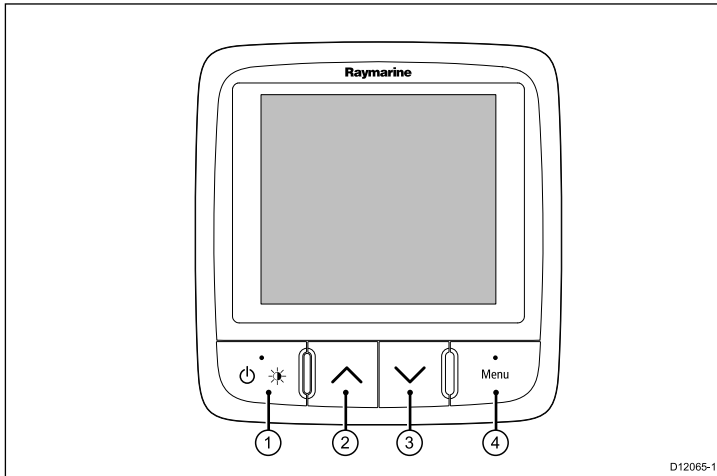
Item	Description
1.	**LEFT SOFT BUTTON** Power, brightness, cancel, back
2.	**UP ARROW** Up navigation, Adjust Up
3.	**DOWN ARROW** Down navigation, Adjust Down
4.	**RIGHT SOFT BUTTON** Menu, select, OK, Save

3.3 Instrument power

Powering the instrument on

1. Press and hold the **LEFT SOFT** button for 1 second, until the Raymarine logo appears.

   The instrument will load to favorites page one.

Powering the display off

1. From any favorite page press and hold the **LEFT SOFT** button.

   After 1 second a power down pop up will appear.

2. Continue to hold the **LEFT SOFT** button for a further 3 seconds to complete the power off

3.4 Display settings

Display and shared brightness

You can change the brightness of the individual display, or networked displays.

You can only use and set shared brightness on displays which support sharing and are assigned to network groups .

You will not be able to set shared brightness levels on displays which do not support sharing.

Adjusting the displays brightness

To adjust the brightness of the individual display:

1. Whilst in a favorite page momentarily press the **LEFT SOFT** button.

   This will open the brightness setting screen.

2. Use the **UP** and **DOWN** buttons to change the brightness percentage to the required level.

3. Press the **RIGHT SOFT** button to confirm new brightness and go back to the favorites page you were on.

Assigning A Network Group

When assigned to a network group you can change brightness level and color scheme on displays which support sharing.

To enable shared brightness and color schemes the display must be assigned to a network group as follows:

1. Navigate to **Menu > Set Up > System Set Up > Network Group**.

   A list of network groups will be displayed:

   • None (default)

   • Helm 1

   • Helm 2

   • Cockpit

   • Flybridge

   • Mast

   • Group 1 — Group 5

2. Use the **UP** and **DOWN** buttons to highlight the required group.

3. Press the **SELECT** button to assign the display you are using to that network group.

4. Navigate to **Menu > Set Up > System Set Up > Brightness/Colour Group**.

   You will be presented with the following options:

   • This Display

   • This Group

5. Highlight and select the required setting.

6. Carry out steps 1 to 5 on all displays you wish to share.

Adjusting the shared brightness

Shared brightness is only accessible if the display has been assigned to a network group.

1. Whilst on a favorites page press the **LEFT SOFT** button to display the brightness setting.

2. Press the **LEFT SOFT** button again to access the shared brightness settings.

3. Use the **UP** and **DOWN** buttons to change the shared brightness level.

Display and system brightness can also be accessed via **Menu > Display settings > Brightness**.

Display and shared color

The i70 can set a color scheme for the individual display or for the system (if color is available on the network displays).

Color settings can be accessed via **Menu > Display settings > Colors**.

Color schemes available are:

Example	Color Scheme
	Day 1
	Day 2
	Inverse
	Red/Black

Changing the color scheme

1. From the color menu highlight a color scheme.

   Once highlighted the display will preview the selected color scheme.

2. Press **SELECT** to confirm the color scheme and return to the color settings menu.

If the unit is part of a network group, the color scheme selected will change on all displays which are part of that group. If color is not available on the networked displays they will remain unchanged.

Display response

Setting the display response

Setting the response to a low value will provide a more stable reading of current conditions. Setting response to a high value will make readings more responsive.

1. From **Menu > Display settings** select **Display Response**.
2. Use the **UP** and **DOWN** buttons to select the data type:

   - Speed
   - Depth
   - Wind speed
   - Wind angle
   - Heading

3. Press **SELECT** to set the response value:

   1 — 15
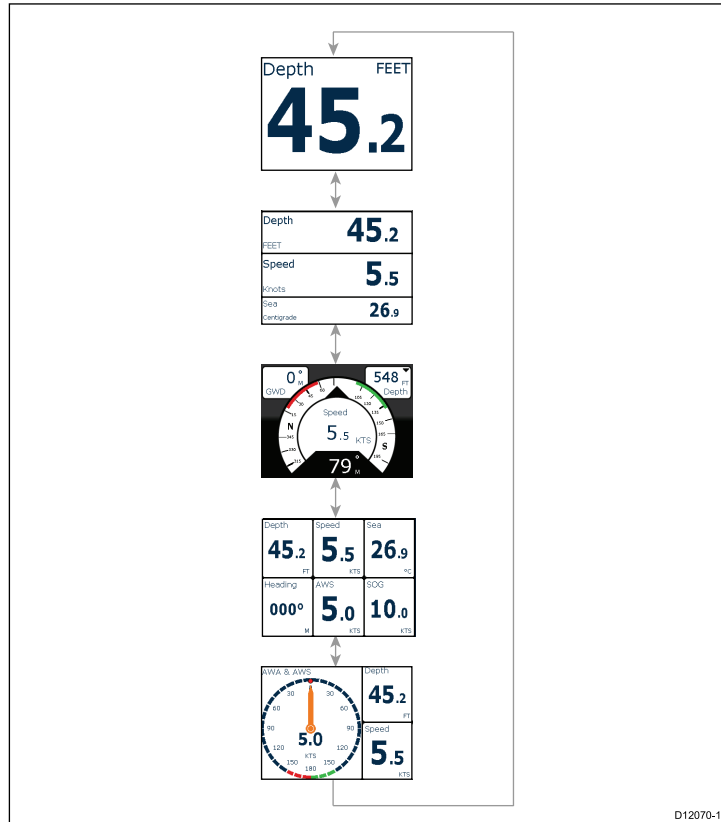4. Press **SAVE** to save the value and return to the display response options screen.

Chapter 4: Favorite Pages

Chapter contents

4.1 Favorite pages

D12070-1

The i70 presents instrument data on a series of pages. You can have a minimum of 1 and a maximum of 10 favorite pages available, There are sixteen different page layouts to choose from which can be customized with different data types.

There are also a number of be-spoke pages you can choose from.

Selecting pages

1. Use the **UP / DOWN** arrows to select between the available pages.

Alternatively use the Rollover feature within the setup menu to cycle through the pages automatically.

4.2 Favorite page frames

Each piece of information is displayed in a frame within the page. The frames support a number of different styles and formats for presenting the data.

Tri data frame
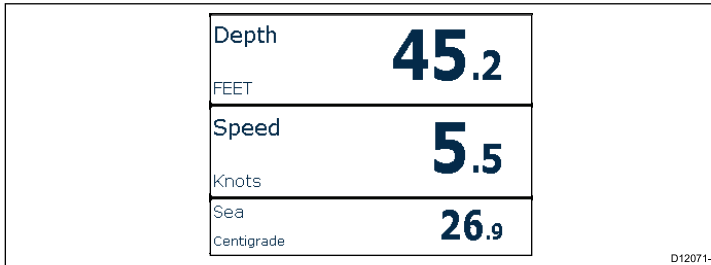
The tri data frame enables digital data to be displayed in numerical format.

Digital frames
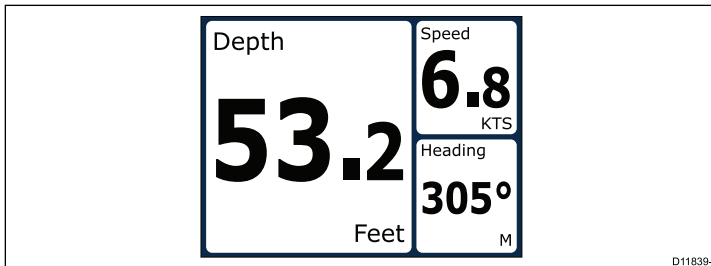
The digital frames provides data in a numerical format.

Analog frames
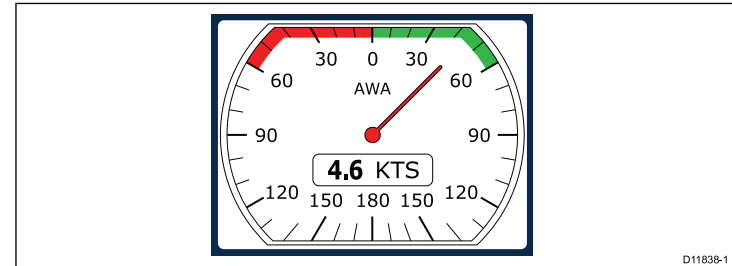
Analog frames provide real-time data in the form of an analog gauge. Analog gauges are only available for full and 2/3 screen frames.

Maximum and minimum indicators

Maximum, minimum and average value indicators are displayed on analog speed, wind speed and wind angle screens.
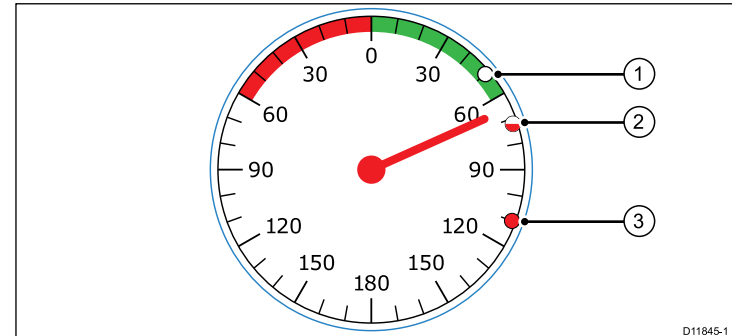
1	Minimum value
2	Average value
3	Maximum value indictor

Graph frames

Depth

< 1 Minute >   Feet

51.6

D11840-1
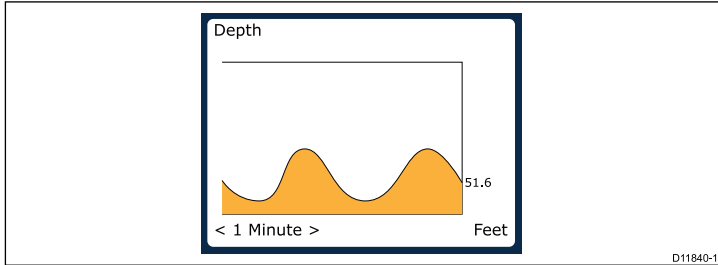
Graphs provide a means of showing how a particular reading has changed over time.

Bar graph frames

Rudder

10

D11869-1
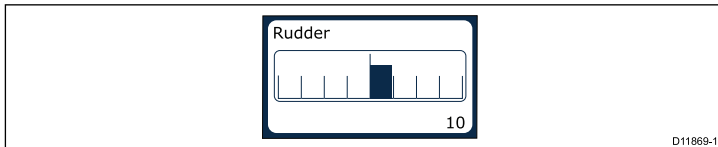
The rudder bar is an example of a bar graph frame.

Multi gauge frames

The i70 provides three multi-gauge frames for use as favorite pages which you can see below:

Multi-gauge — sailing vessel

16.5 °C
Air Temp

51.5
Humidity

6.4 KTS
Speed

273° M

D12072-1
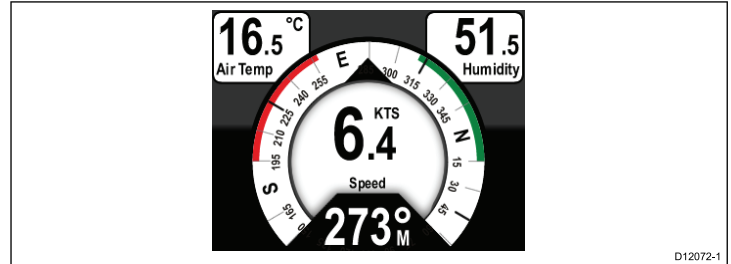
Multi-gauge — single engine vessel

Oil Temp

RPM

6.4 KTS

123°C   75%

D12073-1
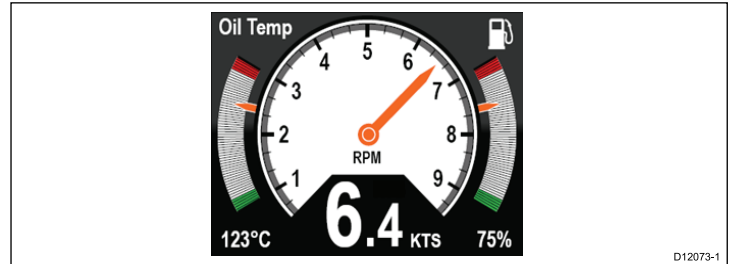
Multi gauge — twin engine vessel
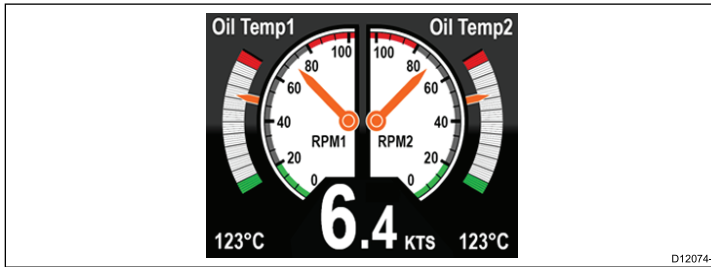
Trim tab frame
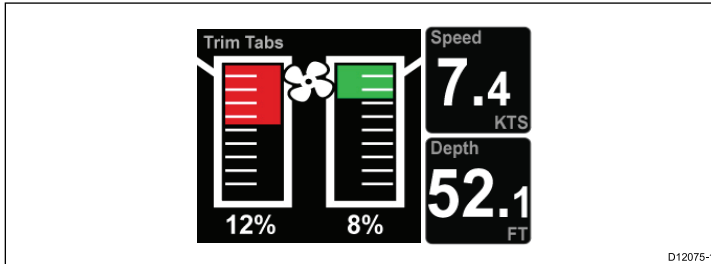
The trim tab frame provides information on the position of the trim tabs.

Race timer frame

The race timer provides the ability for up to 3 countdown timers. See Race timer chapter for more details.

AIS frame
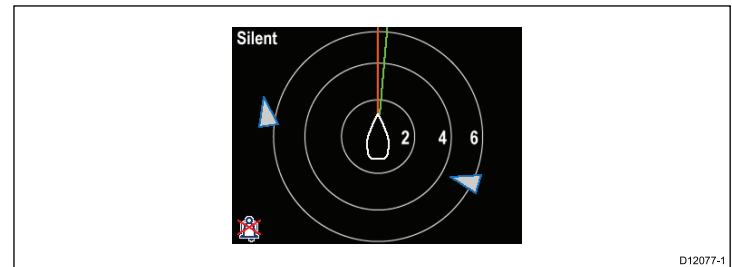
The AIS frame shows object positions relative to you vessel's position.

Rolling road frame
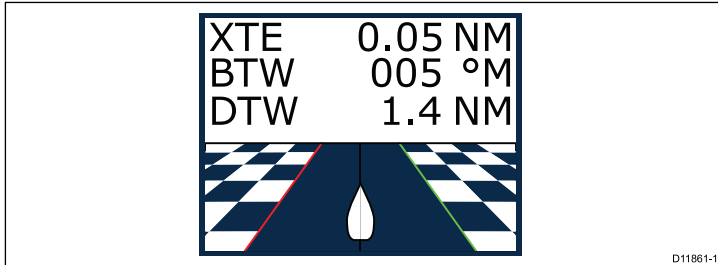
The rolling road provides waypoint and course deviation information.

4.3 Resetting maximum, minimum and trip data

The values of some data are accrued over time. These include information such a trip distance, and maximum and average speed. This type of information can be reset as and when required.

With the data to be reset displayed on the instrument screen:

1. Press the **RIGHT SOFT** button to open the menu.
2. Select **Quick options** by pressing the **RIGHT SOFT** button.
3. Select reset against the data you want to reset and press the **RIGHT SOFT** button.

4.4 Customizing pages

You can use the **Favorites page** menu to change any instrument page to suit your requirements. You can:

- Edit an existing page.
- Add new pages.
- Delete pages.
- Change the page order.
- Set pages to rollover

Editing an existing page

Follow these instructions to change the layout or information displayed on an instrument page.

1. With an instrument page displayed on the screen press the **RIGHT SOFT** button to open the main menu.
2. Select **Favorites page** from the menu.
3. Select **Edit page** from the Favorites page menu.
4. Using the **UP** and **DOWN** buttons select the page you want to edit, and then press **SELECT**.
5. Using the **UP** and **DOWN** buttons select the data pane you want to change, and then press **SELECT** .
6. Highlight and select the data you wish to display and press **SELECT**.
7. Highlight the tick icon and press **SELECT** to save your choice.

The **Edit page** menu is also available from the **Quick options** menu: **Main menu > Quick options > Edit page**.

Adding a page

You can add up to a maximum of 10 pages in your favorites.

1. With an instrument page displayed on the screen press the **RIGHT SOFT** button to open the main menu.

2. Select **Favorites page** from the menu.
3. Select **New page** from the menu.

   If you already have the maximum number of pages set up you will not be allowed to add another page without deleting an existing page first . Otherwise you will be taken to a page layout option screen.
4. Highlight and select the required page layout and press **SELECT**.
5. You can now select the required data to be displayed in your new page by following the Editing an existing page procedure.

Deleting a page

In order to delete a page follow the steps below.

1. From the **Favorite pages** menu select **Delete page**.

   If you have two or more pages set up you will be able to delete a page from your favorite pages. I you only have one page set up you will not be allowed to delete a page as you must always have a minimum of one favorite page.
2. When the confirm delete is displayed you can continue to delete the page by pressing the **YES** button.

Changing the page order

Follow these steps to change the order in which the instrument pages will be displayed.

1. From the **Favorite pages** menu select **Page order**.
2. Select the page you wish to move.
3. Using the **UP** and **DOWN** buttons move the page to the required location and press **SAVE**.

Setting page rollover

Using the Rollover page feature enables the Favorite pages to cycle automatically with no user interaction.

1. From the **Favourite pages** menu select **Rollover**.

2. To turn rollover function on select a time interval and press
    SELECT to confirm.

3. To turn rollover off select **Off** and press **SELECT** to confirm.

Chapter 5: AIS

Chapter contents

5.1 AIS Overview

The AIS feature enables you to receive information broadcast by other vessels, and to view these vessels as targets relative to your boat. The AIS feature on i70 is standalone, settings and alarms cannot be shared with other AIS enabled products on your system.

How AIS Works

AIS uses digital radio signals to broadcast 'real-time' information between vessels and shore-based stations via dedicated VHF radio frequencies. This information is used to identify and track vessels in the surrounding area and to provide fast, automatic and accurate collision avoidance data.

Note: It may not be mandatory for vessels to be fitted with operational AIS equipment. Therefore, you should not assume that your multifunction display will show ALL vessels in your area. Due prudence and judgement should be exercised.

With an optional AIS unit connected to your system you can:

- Display targets for any other AIS—equipped vessels.

- Display voyage information being broadcast by these targets, such as their position, course, speed and rate-of-turn.

- Display basic or detailed information for each target vessel, including safety-critical target data.

- Set up a safe zone around your vessel.

- View AIS alarm and safety-related messages.

AIS information is displayed on the screen as shown below:

D12078-1
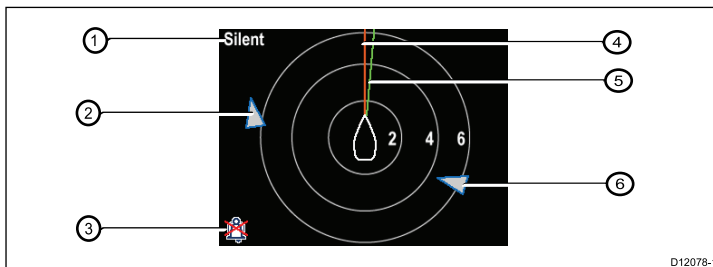
Item	Description
1,	**AIS text** See AIS messages in table below
2	**Unknown vessel**
3	**Alarms off icon**
4	**Heading line**
5	**COG line**
6	**Unknown vessel**

Note: Where unstable or no heading or COG data is available AIS targets will not be shown and the centre vessel icon will not be displayed.

AIS Messages

AIS messages are displayed on the top left of the AIS screen, with icons displayed on bottom left.
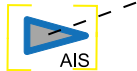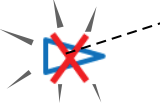
AIS Messages	Description
AIS off	AIS Unit off
(none)	AIS is on and transmitting

AIS Messages	Description
Alarm on icon	AIS on, transmitting, alarm is active.
Silent	AIS on & user is silent to other vessels.
Alarm on	AIS on, user is silent to other vessels & alarm is active.
Alarm off icon	AIS on & Alarm off
Data lost	AIS on & data lost.
No fix	AIS on & lost GPS fix.
Insufficient COG/Hdg data	No stable COG or heading data

AIS-equipped vessels in the surrounding area are displayed on the page as targets. A maximum of 25 targets can be displayed, where more than 25 targets are in range a **Max targets** is displayed on screen. As the vessel's status changes, the symbol for the target changes accordingly.

5.2 AIS target symbols

Your display shows a range of symbols to represent the different types of AIS target.

Target type	Description	Symbol
Transmitting target	Target not activated, dangerous or lost. Target is moving or at anchor.	
Selected target	Target selected with cursor. Can view detailed data.	AIS
Dangerous target	Targets within specified distance (CPA) or time (TCPA). Dangerous target alarm sounds if enabled. Target red and flashes.	
Uncertain target	Calculated CPA / TCPA value uncertain.	
Lost target	When signal of dangerous target not received for 20 seconds. Target in latest predicted position. Alarms sounds if enabled. Target with red cross and flashes.	
Aid To Navigation (AToN) target (Real)	AToN target is ON position.	

Target type	Description	Symbol
Aid To Navigation (AToN) target (Real)	AToN target is OFF position. Target red.	
Aid To Navigation (AToN) target (Real)	AToN target is OFF position & dangerous. Target black and flashes.	
Aid To Navigation (AToN) target (Real)	AToN target is OFF position & lost. Target black with red cross and flashes.	
Aid To Navigation (AToN) target (Virtual)	AToN target is ON position.	
Aid To Navigation (AToN) target (Virtual)	AtoN target is OFF position. Target red.	
Aid To Navigation (AToN) target (Virtual)	AToN target is OFF position & dangerous. Target black and flashes.	
Aid To Navigation (AToN) target (Virtual)	AToN target is OFF position & lost. Target black with red cross and flashes.	

Target type	Description	Symbol
Land base station target	Land base station target is ONLINE.	
Yacht	Target vessel type is a yacht.	
Commercial Vessel	Target vessel type is a commercial vessel.	
High speed vessel	Target vessel type is a high speed vessel.	

5.3 Setting AIS range

You can change the scale of the AIS page by altering the AIS range.

1. Press the **RIGHT SOFT** button to bring up the menu.
2. Using the **UP** and **DOWN** buttons highlight **Quick options** and press **OK**.
3. Using the **UP** and **DOWN** buttons highlight **AIS Range** and press **OK** .
4. Using the **UP** and **DOWN** buttons highlight the required range and press **SELECT** to change the range to the selected option and return to the favorite pages, or press **CANCEL** to go back to the favorites pages without changing the range.

5.4 Viewing AIS target information

Whilst on the AIS page you can view information about AIS targets by following the steps below:

1. Press the **RIGHT SOFT** button to bring up the **Quick options** and then select **AIS Target info**.
2. Use the **UP** and **DOWN** buttons to select an AIS target on the screen.

   The Name of the vessel will be displayed in the page header.
3. Press **INFO** to bring up detailed information about the selected target

   • Vessel name

   • MMSI number

   • Vessel type

   • Call sign

   • SOG

   Information displayed is dependant upon the type of target selected.
4. You can use the **UP** and **DOWN** buttons to scroll through the data if required.
5. To return to the AIS page press the **BACK** .

5.5 AIS silent mode

AIS silent mode enables you to disable AIS transmissions

AIS silent mode enables you to disable the transmitting functions of your AIS equipment. This is useful when you do not want to transmit your vessel's AIS data to other AIS receivers, but still wish to receive data from other vessels.

> **Note:** Not all AIS equipment supports silent mode. For more information, refer to the documentation that accompanies your AIS unit.

Enabling and disabling AIS silent mode

Whilst viewing the AIS page:

1. Press the **RIGHT SOFT** button to bring up the menu items.
2. Highlight **Quick options** using the **UP** and **DOWN** buttons, then press **OK** .
3. Highlight the **AIS Silent** option and press **OK** .

   There are two options to choose from:

   - Silent

   - Transmit

4. To turn on **Silent** mode highlight **Silent** and press **SELECT**.
5. To turn off **Silent** mode highlight **Transmit** and press **SELECT**.

Chapter 6: Race timer settings

Chapter contents

6.1 Setting the race timer

If the race timer has not been setup as a favorite page then the timer can be accessed from the view data menu: **Menu > View data > Time > Race timer** .

Race Time
0:00
1 2 3
0:00 0:00 0:00
D12076-1
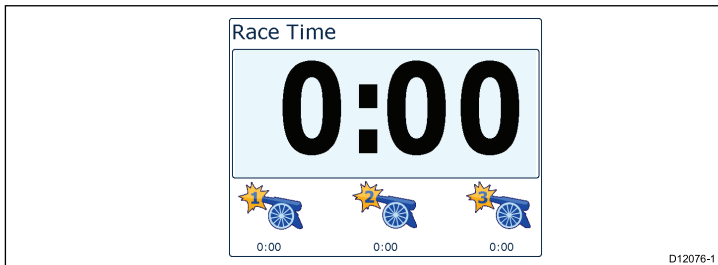
1. To add the race timer as a favourite page from the **View data** menu display the race timer and press the **RIGHT SOFT** button.

2. Select **Quick Options** and then select **Add to favourites**.

3. Once the race timer is a favourite page to use press the **RIGHT SOFT** button and then select **Quick options**.

   The following options will be available:

   • Start timer

   • Stop timer

   • Reset timer

   • Adjust start times

4.

6.2 Using the race timer

Once the **Race timer** has been set you can use the timer by following the steps below:

1. When on the Race timer screen Press the **RIGHT SOFT** button and select **Quick options** form the menu

2. To adjust a timer setting select **Adjust start timer**.
   i. Use the **UP** and **DOWN** buttons to select either timer 1,2, or 3.
   ii. Use the **UP** and **DOWN** buttons to change the timer value to the required setting and press **SELECT** to confirm.

3. To start the timer select **Start timer** from the **Quick options** menu.

4. To pause the current running timer select **Stop Timer**.

5. To resume the timers count down select **RESUME** from the **Quick options** menu.

6. To reset the current timer select **Reset Timer**.

7. Once the timer reaches zero count up shall begin automatically.

8. To skip to the next timer press the **SKIP** key.

9. Whilst the timer is running you can view other favorite pages as normal.

   Audible beeps shall be sounded at defined intervals to alert you to the timer status as follows:

   • Double beep every minute.

   • Beep Three times at the start of the last 30 seconds.

   • Beep every second for the last 10 seconds.

   • Beep for two seconds when the timer reaches zero

Chapter 7: Multiple data sources (MDS)

Chapter contents

7.1 Multiple data source (MDS) overview

MDS is a system to manage installations with multiple instances of sensors providing the same type of data to vessel displays and systems. If attached to a compliant system a MDS enabled display will let you see all vessel sensors, and select the preferred sources for your data. e.g. in a system you may have a Multi-function display with an internal GPS and an external GPS such as a RS125+, by selecting your preferred data source allows you to determine which GPS is used by your system.

Where your system has already been assigned a preferred data source your display will use that source by default. You can use the display to set the preferred data sources on your system so that any other MDS enabled devices use that data source.

Types of multiple data source you can choose from are:

• GPS Position

• Heading

• Depth

• Speed

• Wind

> **Note:** The presence of some non-MDS compliant devices on your system may prevent MDS from working.

7.2 Viewing vessel data sources

You can view available multiple data sources on a system by following the steps below:

1. Go to the MDS menu: **Main menu > Setup > System setup > Multiple data source**.

2. Highlight the required data type:

   • GPS position

   • Heading

   • Depth

   • Speed

   • Wind

3. Press **SELECT**.

   You will be shown a list of all available data sources for the chosen data type.

4. Highlight a data type and press **SELECT**

   You will now see detailed information about the data source which will include:

   • Device

   • Serial number

   • Port ID

   • Status

7.3 Selecting a preferred data source

To select a preferred data source for your system:

1. Go to the MDS menu: **Main menu > Setup > System setup > Multiple data source**.
2. Press **OPTIONS**.
3. Highlight **Selection** and press **SELECT**.
4. Highlight **Manual** and press **SELECT**

   You will be taken back to the source options screen.
5. Highlight **Use this source** and press **SELECT**
6. To let the system automatically select a data source at the source selection screen highlight and press **AUTO**.

Where displays on your system are not capable in participating in MDS you will be shown a list of the devices that do not support this feature.

Chapter 8: Instrument alarms

Chapter contents

8.1 Alarms

Alarms are used to alert you to a situation or hazard requiring your attention.

Some examples of alarms are:

• Anchor alarm — Used when anchored, this alerts you to a change in depth which could mean that the chain length requires adjusting.

• Depth and speed alarms — These alarms alert you when your depth or speed moves outside of specified limits, for example a minimum depth.

• MOB (Man Overboard) alarm — Received from an MOB system.

When an alarm occurs, a message is displayed and an audible alarm may sound.

You can either:

• Silence the alarm, or

• Silence the alarm and edit the alarm settings.

Note: With the exception of alarm clock, speed and sea temp SeaTalk systems will only be able to switch alarms on/off, SeaTalkng systems will be able to adjust settings.

Man overboard alarm

In the event of a Man Overboard (MOB) alarm, the instrument provides a range of information to help find the MOB target.
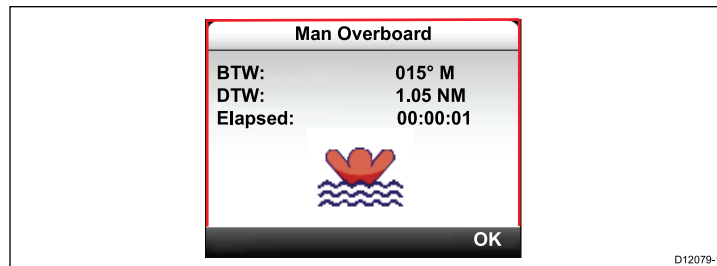
• BTW: Bearing to MOB waypoint.

• DTW: Distance to MOB waypoint.

• Elapsed: Time since start of MOB alarm.

BTW and DTW require data from other sources such as a GPS and multifunction display. If these are not available then only the elapsed time is displayed.

Alarm settings

Most alarms are generated locally using specified thresholds. They are also transmitted to the SeaTalk and SeaTalkng networks for display at other compatible devices.

Category	Alarm		Content
Depth	Shallow	Alarm	• On
			• Off (default)
		Adjust	• 0 — xxx FT
			• 5 ft (default)

Category	Alarm		Content
Depth	Deep	Alarm	• On • Off (default)
		Adjust	• 0 — xxx FT • 100 ft (default)
Depth	Shallow Anchor	Alarm	• On • Off (default)
		Adjust	• 0 — xxx FT • 5 ft (default)
Depth	Deep Anchor	Alarm	• On • Off (default)
		Adjust	• 0 — xxx FT • 100 ft (default)
Speed	Boat Speed High	Alarm	• On • Off (default)
		Adjust	• 0 — 100 KTS • 30 kts (default)
Speed	Boat Speed Low	Alarm	• On • Off (default)
		Adjust	• 0 — 100 KTS • 5 kts (default)

Category	Alarm		Content
Temperature	Sea Temp. High	Alarm	• On • Off (default)
		Adjust	• 0 — 50ºC • 10ºC (default)
Temperature	Sea Temp. Low	Alarm	• On • Off (default)
		Adjust	• 0 — 50ºC • 1ºC (default)
Wind	AWS High Apparent Wind Speed high	Alarm	• On • Off (default)
		Adjust	• 0 — 200 KTS • 25 kts (default)
Wind	AWS Low Apparent Wind Speed low	Alarm	• On • Off (default)
		Adjust	• 0 — 200 KTS • 10 kts (default)
Wind	AWA High Apparent Wind Angle high	Alarm	• On • Off (default)
		Adjust	• 0 — 180º • 25º (default)

Category	Alarm		Content
Wind	AWA Low Apparent Wind Angle low	Alarm	• On • Off (default)
		Adjust	• 0 — 180º • 10º (default)
Wind	TWS High True Wind Speed high	Alarm	• On • Off (default)
		Adjust	• 0 — 200 KTS • 10 kts (default)
Wind	TWS Low True Wind Speed low	Alarm	• On • Off (default)
		Adjust	• 0 — 200 KTS • 10 kts (default)
Wind	TWA High True Wind Angle high	Alarm	• On • Off (default)
		Adjust	• 0 — 180º • 25º (default)
Wind	TWA Low True Wind Angle low	Alarm	• On • Off (default)
		Adjust	• 0 — 180 º • 10º (default)

Category	Alarm		Content
Other	Alarm Clock	Alarm	• On • Off (default)
		Time	• 12:00 am — 12:00 pm • 00.00 – 23:59 24 hr
		Format	• 24 hour • am / pm
Other	Off Course	Alarm	• On • Off (default)
		Adjust	• 0 — 180 º • 5º (default)
Other	MOB Man Overboard	Alarm	• On (default) • Off
Other	Battery Low	Alarm	• On • Off (default)
		Adjust	• 6 – 60 V • 10 V (default)

Category	Alarm		Content
Other	AIS Alarm	Safety messages	• On • Off (default)
		Dangerous target	• On • Off (default)
		Safe zone	• (0.1 , 0.2, 0.5, 1.0, 2.0) nm • (0.1 , 0.2, 0.5, 1.0, 2.0) sm • (0.2, 0.5, 1.0, 2.0, 5.0) km
		Time to safe zone	• 3 min • 6 min • 12 min • 24 min

Chapter 9: Quick options

Chapter contents

9.1 Quick options menu

The **Quick options** menu is a dynamic menu which displays menu items relative to the items displayed on the favourites page you are on. You can access this menu by pressing the **RIGHT SOFT** button and then selecting **Quick options**.

Main menu > Quick options.

9.2 Quick options menu items

Depending on the page being displayed different quick options are available as follows:

Page displayed	Quick options available
Menu	**Edit page**
MOB (when MOB is active)	**MOB**
Maximum depth	**Reset Maximum Depth**
Minimum depth	**Reset Minimum Depth**
Maximum speed	**Reset Maximum Speed**
Average speed	**Reset Average Speed**
Trip	**Reset Trip**
Max. SOG	**Reset Max. SOG**
Ave. SOG	**Reset Ave. SOG**
CMG & DMG	**Reset CMG & DMG**
Maximum Sea Temperature	**Reset Max. Sea Temperature**
Minimum Sea Temperature	**Reset Min. Sea Temperature**
Maximum Air Temperature	**Reset Max. Air Temperature**
Minimum Air Temperature	**Reset Min. Air Temperature**
Maximum AWA	**Reset Maximum. AWA**
Minimum AWA	**Reset Minimum. AWA**
Maximum AWS	**Reset Max. AWS**
Minimum AWS	**Reset Min. AWS**
Maximum TWA	**Reset Max. TWA**

Page displayed	Quick options available
Minimum TWA	**Reset Min. TWA**
Maximum TWS	**Reset Max. TWS**
Minimum TWS	**Reset Min. TWS**
Race Timer	**Start timer**
	Stop timer
	Reset timer
	Adjust start times
Graph	**Time scale**
(View data) page	**Add to favorites**
AIS	**View AIS targets** — (Only shown if there is Heading or stable COG data available.)
	AIS range
	AIS Silent mode

Chapter 10: View data

Chapter contents

10.1 Data views

> **Note:** The data described in the table below is dependent on the configuration of your system, so some items may not be applicable to your vessel.

The following table shows the data items available for each category.

Menu item / description	Settings / operation
Battery	• Battery current • Battery temperature • Battery voltage
Boat	• Rate of turn • Tilt — inclination • Trim tabs • Grey water tank • Black water tank • Fresh water tank
Depth	• Depth • Depth history • Max depth • Min depth
Distance	• Log (through water) • Trip (through water)

Menu item / description	Settings / operation
Engine	• Boost pressure • Coolant pressure • Coolant temperature • Engine hours • Engine RPM • Engine RPM history • Fuel flow rate • Fuel flow rate total • Oil pressure • Oil temperature • Trim position • Load • Engine tilt • Alternator potential • Transmission oil pressure • Transmission oil temperature • Transmission • Engine overview 1 (allows bespoke engine dials) • Engine overview 2 (allows bespoke engine dials)

Menu item / description	Settings / operation
Fuel	Fuel management is dependant on a suitable fuel or engine management system being available on the SeaTalk^{ng} network. • Distance to empty • Economy • Fuel flow — average • Fuel flow — instantaneous • Fuel level • Estimated fuel remaining • Fuel pressure

Menu item / description	Settings / operation
Environment	• Air temperature • Air temperature history • Barometric pressure • Barometric pressure history • Dew point • Drift • Drift history • Humidity • Min air temperature • Max air temperature • Sea temperature • Sea temperature history • Min sea temperature • Max sea temperature • Set • Set history • Set and drift pair • Sunset / sunrise • Wind chill apparent • Wind chill true

Menu item / description	Settings / operation	Menu item / description	Settings / operation
GPS	• COG	**Navigation**	• Active waypoint name
	• COG history		• Waypoint ID
	• COG + SOG pair		• CMG
	• HDOP		• CMG history
	• LAT		• BTW
	• LAT & LON		• DTW
	• LON		• BTW & DTW
	• Sats		• DMG
	• Sats + HDOP		• CMG & DMG
	• SOG		• CMG & VMG
	• SOG history		• CTS & XTE
	• Max SOG		• ETA
	• Ave SOG		• TTG
Heading	• Heading		• XTE
	• Heading & speed		• XTE history
	• Heading history		• Rolling road
	• Locked heading	**Pilot**	• Course to steer
	• Locked heading error & locked heading		• Pilot heading
	• Tack heading		• Pilot heading & speed pair
			• Pilot status
			• Rudder angle

Menu item / description	Settings / operation
Speed	• Average speed • Boat speed & SOG • Max speed • Speed • Speed history • Trolling • VMG windward • VMG windward history • VMG WPT • VMG WPT history
Time	• Clock • Local time • Local time & date • Race timer

Menu item / description	Settings / operation	Menu item / description	Settings / operation
Wind	• AWA		• TWA & VMG pair
	• AWA history		• TWA max
	• AWA & AWS pair		• TWA min
	• AWA(CH) & AWS pair		• TWS
	• AWA & VMG		• TWS history
	• AWA max		• TWS max
	• AWA min		• TWS min
	• AWS	**AIS**	• AIS
	• AWS history		
	• AWS max		
	• AWS min		
	• Beaufort		
	• Cardinal		
	• GWD		
	• GWD history		
	• GWD + Beaufort		
	• TWD		
	• TWD history		
	• TWA		
	• TWA history		
	• TWA & TWS pair		
	• TWA(CH) & TWS pair		

10.2 Viewing data

You can use the **View data** menu to view information which has not been added to favorite pages.

1. Select **View data** menu from the main menu.
2. From the **Select Category** menu choose the data category.
3. Select the relevant item to view the data.

   The data will be displayed full screen.
4. To add the data to a favorite page press the **RIGHT SOFT** button.

Chapter 11: Setup menu

Chapter contents

11.1 Setup menu

The setup menu provides a range of tools and settings to configure the instrument display.

Menu item	Description	Options
Transducer setup	Set up and calibrate transducers as detailed in Transducer calibration section above.	• Depth • Speed • Wind • DST800 • DT800 • Trim tabs
User preferences	Set user preferences such as: Time & Date, Units of measurement, Language, Vessel type, Vessel details, and Variation.	• Time & date • Units • Language • Vessel type • Vessel details • Variation •
System set up	Set system network groups, display and system color and brightness, Multiple data sources and about system setup	• Network group • Brightness / color group • Multiple data sources • About system setup

Menu item	Description	Options
Simulator	Enables or disables simulator mode, which allows you to practice operating your instrument display without any data from any other external unit.	• On • Off
Factory reset	Delete user settings and Restore unit to factory default settings.	• Yes • No
Diagnostics	Information About the display and system and key beep on / off setting	• About display • About system • Key beep

Transducer setup menu

The **Transducer setup** menu provides the functions to enable setup and calibrate connected transducers.

Menu item	Description	Options
Depth	Enables setup and calibration of depth transducers and provides the following options: • **Details** • **Depth offset**	**Details** displays can supply information about the installed transducer or interface such as Serial No. and Software version etc. **Depth offset** allows you to set the offset distance so that the displayed depth reading represents the depth to the sea bed from either the keel or the waterline. • **Depth from:** – Keel – Transducer – Water line • **Offset:** – 0 to 99 ft, m • **About depth offset**
Speed	Enables setup and calibration of speed transducers and provides the following options: • **Details** • **Speed calibration** speed should be calibrated at each of the speed points shown under speed calibration. • **Calibrate water temperature**	**Details** displays can supply information about the installed transducer or interface such as Serial No. and Software version etc. **Speed calibration:** • speed settings are determined by the calibration points stored either in the transducer or the interface unit. **Calibrate water temperature:** • xxx ºC or ºF

Menu item	Description	Options
Wind	Enables setup and calibration of wind transducers and provides the following options: • **Wind detail** • **Calibrate vane** • **App wind speed calibration**	**Details** displays information about the installed transducer, Serial No. and Software version etc. **Calibrate vane**- follow the on screen instructions to calibrate the wind vane. **App wind speed:** • xx kts

DST800	Enables setup and calibration of DST (Depth, Speed, and Temperature) smart transducers and provides the following options:
	
	• **DST800 details**
	
	• **Depth offset**
	
	• **Speed calibration**
	
	• **Temperature offset**
		DST800 details displays information about the installed transducer, Serial No. and Software version etc.
		Depth offset allows you to set the offset distance so that the displayed depth reading represents the depth to the sea bed from either the keel or the waterline.
		
		• **Depth from:**
		
		  – Water line
		
		  – Keel
		
		  – Transducer
		
		• **Offset:**
		
		  – 0 to 99 ft
		
		• **About depth offset**
		
		Speed calibration:
		
		• **Add** — adds a new speed setting using current SOG reading.
		
		• **Edit** — edits a speed setting in 0.1 kt increments.
		
		• **Delete** — deletes the selected speed setting.
		
		• **Reset** — resets speed calibration to default settings.

Menu item	Description	Options
		Temperature offset: • xxx ºC or ºF

DT800	Enables setup and calibration of DT (Depth, and Temperature) smart transducers and provides the following options:
	
	• **DT800 details**
	
	• **Depth offset**
	
	• **Temperature offset**
		DT800 details displays information about the installed transducer, Serial No. and Software version etc.
		Depth offset allows you to set the offset distance so that the displayed depth reading represents the depth to the sea bed from either the keel or the waterline.
		
		• **Depth from:**
		
		  – Water line
		
		  – Keel
		
		  – Transducer
		
		• **Offset:**
		
		  – 0 to 99 ft, m
		
		• **About depth offset**
		
		Temperature offset:
		
		• xxx ºC or ºF

Trim tabs	Provides on screen instruction on how to setup and calibrate trim tab display position: • **Trim tabs up** • **Trim tabs down**	**Trim tabs up** • Click **CONTINUE** to confirm tabs fully up. • Click **CONTINUE** to confirm tabs fully down.

User preference menu

The **User preference** menu enables users to customize user settings as detailed in the table below:

Menu item	Description	Options
Time & date	These options enable you to customize the date and time format to your requirements. You can also specify a local time offset from Universal Time Constant (UTC), to compensate for any time zone difference.	**Date format:** • mm/dd/yy • dd/mm/yy **Time format:** • 12hr • 24hr **Time offset:** • –13 to +13 hours
Units	Enables you to specify the units used for the following key measurements: • **Speed** • **Distance** • **Depth** • **Wind speed** • **Temperature** • **Flow rate** • **Heading** • **Pressure** • **Volume** • **Barometric**	**Speed:** • kts — knots. • mph — miles per hour. • km/h — Kilometres per hour. **Distance:** • nm — Nautical miles. • sm — Statute miles. • km — Kilometres. **Depth:** • ft — Feet • m — Metres • fa — Fathoms

Menu item	Description	Options
		Wind speed: • kts — knots. • m/s — metres per second. **Temperature:** • ºC — degrees centigrade. • ºF — degrees fahrenheit. **Flow rate** • UK Gal/H — UK gallons per hour. • US Gal/H — US gallons per hour. • LPH — Litres per hour. **Heading:** • Mag — magnetic. • True **Pressure** • PSI — pounds per square inch. • Bar — bar. • kPa — Kilo pascals. **Volume:** • UK Gallons • US Gallons • ltr — litre.

Menu item	Description	Options
Language	Determines the language that will be used for all on-screen text, labels, menus and options.	• Chinese • Croatian • Danish • Dutch • English — UK • English — US • Finnish • French • German • Greek • Italian • Japanese • Korean • Norwegian • Polish • Portuguese (Brazilian) • Russian • Spanish • Swedish • Turkish

Menu item	Description	Options
Vessel type	Determines the default setup of the unit and favorite pages	• Race sail • Sail cruiser • Catamaran • Workboat • RIB • Outboard speed boat • Inboard speed boat • Power cruiser 1 • Power cruiser 2 • Power cruiser 3 • Sport fishing • Pro fishing
Vessel details	Enable you to specify the following: • **Number of engines** • **Number of batteries** • **Number of fuel tanks**	**Number of engines:** • 1 — 5 **Number of batteries** • 1 — 5 **Number of fuel tanks** • 1 — 5
Variation	Enables you to turn on and off magnetic variation, specify slave source or adjust manually. • **Variation mode** • **Variation range**	**Variation mode:** • On • Off • Slave

Menu item	Description	Options
		Variation range: • -30º — +30º

System setup menu

The **System setup** menu enables users to customize user settings as detailed in the table below:

Menu item	Description	Options
Network group	This allows you to add multiple units together in a group so that when the color scheme or brightness is changed on one unit the changes are applied to all units in the group.	**Pre-defined groups** • None • Helm 1 • Helm 2 • Cockpit • Flybridge • Mast **Undefined** • Group-1 — Group-5
Brightness / color group	This enables you to synchronize the displays brightness and color to be the same as the other units in the same network group.	**Sync brightness / color** • This display • This group

Menu item	Description	Options
Multiple data sources	This allows you to view and select preferred data sources. • **Select data source** • **Data source found** • **Data source details**	**Select data source** • GPS position • Heading • Depth • Speed • Wind **Data source found** • model name — serial number Port ID **Data source details** • Device name • Serial No. • Port ID • Status or No data
About system setup	System set-up provides the option to add instruments or pilot head to a group. Once in a group, tasks like changing brightness and color can be done from a single device. Multiple Data source allows you to view & manage which Data source is used on your pilot head. Data types include: GPS Position, Heading, Depth, Speed & Wind.	

Simulator

The Simulator mode enables you to practice operating your display without live data from a transducer or other connected peripherals.

The simulator mode is switched on/off in the **Simulator** option from the **Setup Menu**.

> **Note:** Raymarine recommends that you do NOT use the simulator mode whilst navigating.

> **Note:** The simulator will NOT display any real data, including any safety messages (such as those received from AIS units).

> **Note:** Any system settings made whilst in Simulator mode are not transmitted via SeaTalk to other equipment.

Factory reset

Your product can be reset to factory default settings from the **Setup > Factory reset** menu.

Performing a factory reset will reset your product back to factory default settings and erase any saved data and user settings.

Diagnostics

You can access diagnostics details from the **Setup > Diagnostics** menu option and can view information relating to:

Menu item	Description	Options
About display	Allows you to view information about the instrument display you are using:	• Software version • Hardware version • Bootloader version • Temperature • Volts • Max. volts • Current • Max. current • Run time • Deviation (If available)
About system	Allows you to view information about products on the system you are using:	• Model number • Serial number • Software version • Hardware version • Volts

Menu item	Description	Options
Key beep	Enables you to turn on and off the audible beeps when keys are pressed	• On • Off
Self test	The product has a built in self test which can help to diagnose faults.	• Memory test • Button test • Display test • Buzzer test • Illumination test

Chapter 12: Maintaining your display

Chapter contents

12.1 Service and maintenance

This product contains no user serviceable components. Please refer all maintenance and repair to authorized Raymarine dealers. Unauthorized repair may affect your warranty.

12.2 Routine equipment checks

Raymarine strongly recommends that you complete a number of routine checks to ensure the correct and reliable operation of your equipment.

Complete the following checks on a regular basis:

• Examine all cables for signs of damage or wear and tear.

• Check that all cables are securely connected.

12.3 Cleaning

Best cleaning practices.

When cleaning this product:

- Do NOT wipe the display screen with a dry cloth, as this could scratch the screen coating.

- Do NOT use abrasive, or acid or ammonia based products.

- Do NOT use a jet wash.

12.4 Cleaning the display screen

A coating is applied to the display screen. This makes it water repellent, and prevents glare. To avoid damaging this coating, follow this procedure:

1. Switch off the power to the display.
2. Rinse the screen with fresh water to remove all dirt particles and salt deposits.
3. Allow the screen to dry naturally.
4. If any smears remain, very gently wipe the screen with a clean microfibre cleaning cloth (available from an opticians).

12.5 Performing a factory reset

To reset your i70 to factory settings follow the steps below.

> **Note:** Performing a factory reset will erase all saved data and customized settings.

1. Press the **RIGHT SOFT** button to open the main menu.
2. Select **Set Up**.
3. Select **Factory reset**.
4. Press the **Yes** button.

   Your i70 will now reset itself to factory default settings.

Chapter 13: Technical support

Chapter contents

13.1 Raymarine customer support

Raymarine provides a comprehensive customer support service. You can contact customer support through the Raymarine website, telephone and email. If you are unable to resolve a problem, please use any of these facilities to obtain additional help.

Web support

Please visit the customer support area of our website at:

www.raymarine.com

This contains Frequently Asked Questions, servicing information, e-mail access to the Raymarine Technical Support Department and details of worldwide Raymarine agents.

Telephone and email support

In the USA:

• **Tel:** +1 603 881 5200 extension 2444

• **Email:** Raymarine@custhelp.com

In the UK, Europe, the Middle East, or Far East:

• **Tel:** +44 (0)23 9271 4713

• **Email:** ukproduct.support@raymarine.com

Product information

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

• Product name.

• Product identity.

• Serial number.

• Software application version.

You can obtain this product information using the menus within your product.

13.2 Viewing product information

1. From the main menu scroll to **Set Up** and press the **SELECT** key.

2. From the Set Up menu scroll to **Diagnostics** and press the **SELECT** key.

3. Select **About system**.

   A range of information is displayed, including the software version and Serial number.

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