



ST70 Instrument

Quick reference guide

Raymarine®



Warning: Read the user manual

Before using the software read the safety information contained within the user reference manual on the CD-ROM supplied with your product.



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.

ST70 handbooks

The following handbooks contain information associated with ST70 products.

All documents are available to download as PDFs from www.raymarine.com.

ST70 Instrument handbooks

Description	Part number
ST70 Instrument — Installation and commissioning Contains mounting, connection, commissioning, maintenance and troubleshooting	87079
ST70 Instrument — User reference Contains general operation, setup and user preferences	81284
ST70 Instrument — Quick reference A short guide to general operation	86139

ST70 Pilot Controller handbooks

Description	Part number
ST70 Pilot Controller — Installation Contains mounting and connection.	87071
ST70 Pilot Controller — Commissioning for SPX autopilot systems Contains system commissioning, maintenance and troubleshooting.	81287
ST70 Pilot Controller — User reference Contains general operation, setup and user preferences.	81288
ST70 Pilot Controller — Quick reference A short guide to general operation.	81289

Handbook information

This handbook describes use of some common features of the ST70 Instrument.

It includes information to help you:

- understand some of the basic features and controls of the ST70 Instrument,
- access the setup menus required for configuration of the system

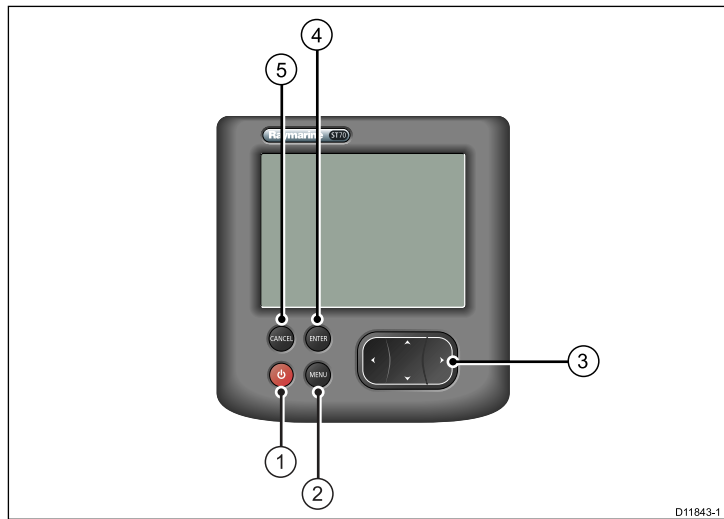
Before using the ST70

- You must ensure that the system has been set up in accordance with the instructions in the installation and user reference manuals
- You must read the important safety information at the beginning of the user reference manual.

Additional handbooks

Description	Part number
SeaTalk ^{ng} reference manual	81300

ST70 instrument controls



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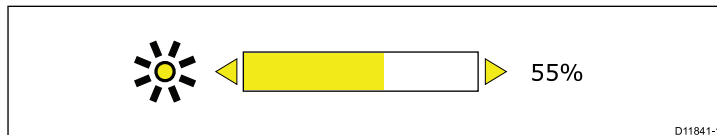
1	POWER button — Switch power on and off, and access screen brightness control.
2	MENU button — Access to user preferences and system configuration menus.

3	UP / DOWN arrow buttons: <ul style="list-style-type: none"> • Select between available instrument pages. • Select options within the setup menus. LEFT / RIGHT arrow buttons: <ul style="list-style-type: none"> • Select options within the setup menus.
4	ENTER button — Confirm menu selections.
5	CANCEL button: <ul style="list-style-type: none"> • Exit setup without making any changes. • Return to previous setup menu item.

Display brightness and color

Setting the screen brightness

1. Press the **POWER** button to display the brightness level.



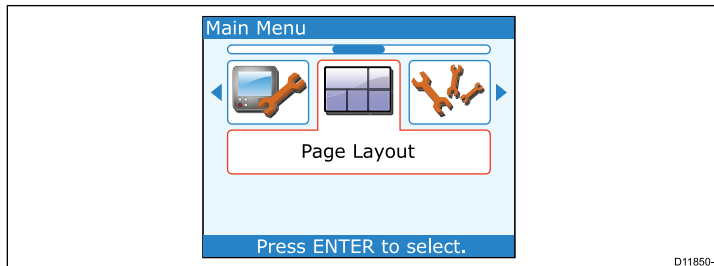
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2. Use the **LEFT / RIGHT** arrows to adjust the screen brightness.
 - A momentary press will increment the brightness by 10%.
 - Press and hold for fine adjustment.
3. Press **ENTER** to accept the new brightness setting.

Choosing the screen colors

You can choose from a range of screen color palettes, for example to suit changes in the available light during the evening.

1. Press **MENU** button to display the main menu.



2. Use the **LEFT / RIGHT** arrows to select the Display Settings option, then press **ENTER**.



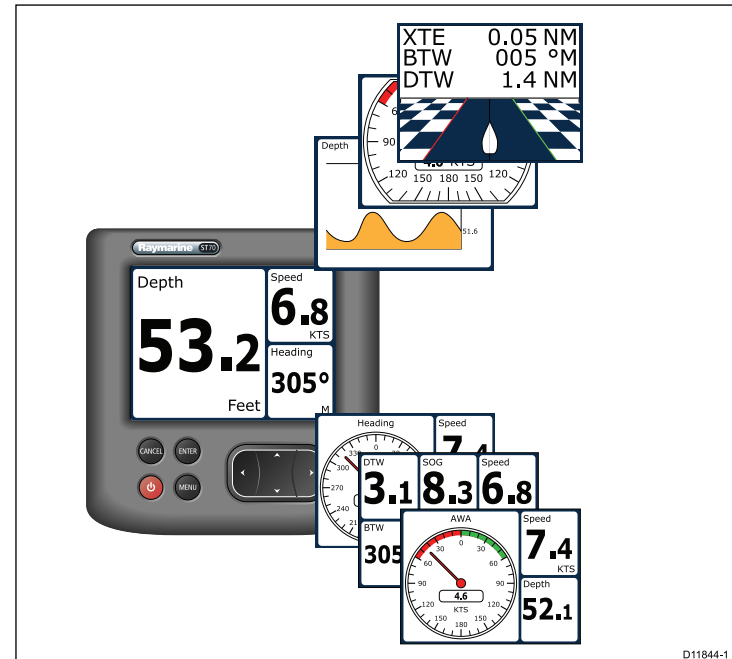
3. Select the Colors option.



4. Select from the following color palette options:
 - Mode 1 - 3 — For general daytime use.
 - Red/Black — For night / low light use.
 - Inverse — High contrast, e.g. for racing and mast mounted instruments.
5. Press **ENTER** to save the selection.
6. Press **CANCEL** to exit the setup menu.

Instrument pages

The ST70 presents instrument data on a series of pages. You have up to 8 pages available, each of which can be set up with different data types and layouts.



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.

Resetting max, min and trip data

The values of some data are accrued over time. These include information such as 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 **MENU**
The Reset data message is displayed.
2. Press **ENTER** to reset the required data.

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.

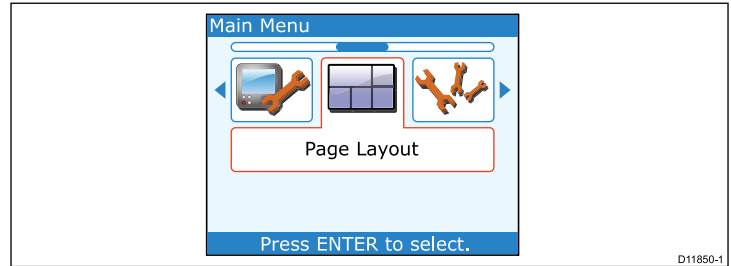


- BTW: Bearing to MOB waypoint.
- DTW: Distance to MOB waypoint.
- Elapsed: Time since start of MOB alarm.

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.

Setup menu






The setup menu provides a range of tools and settings to configure the ST70 instrument.



Menu controls

	MENU button — Access to user preferences and system configuration menus.
	LEFT / RIGHT arrow buttons: <ul style="list-style-type: none"> • Navigate through menus and sub-menus UP / DOWN arrow buttons: <ul style="list-style-type: none"> • Select options within the setup menus.
	ENTER button — Confirm and save settings.
	CANCEL button: <ul style="list-style-type: none"> • Exit setup without making any changes. • Return to previous setup menu item.

Menus available

<p>Display settings</p> 	<p>Brightness, color, units and other settings associated with the display.</p>
<p>Page settings</p> 	<p>Customize the page layouts and information displayed.</p>
<p>Advanced options</p> 	<p>Language and system settings.</p>
<p>Alarms</p> 	<p>Settings associated with supported alarm messages.</p>
<p>Diagnostics</p> 	<p>Instrument information and diagnostics.</p>

Setting up transducers

The Transducer setup menu is used to calibrate the transducers and sensors which are the source of much of the instrument data.

1. Press **MENU**.
2. Select **Advanced options > Transducer setup**.
The ST70 will search for transducers connected to the system and display the results of the search as a list.
3. Press **ENTER** to proceed and setup the parameters for the transducers found.

There are settings available for:

- Depth
- Speed
- Wind
- Temperature
- DST (Depth Speed, Temperature smart transducers)
- DT (Depth, Temperature smart transducers)

Speed calibration

Speed calibration involves aligning the log speed (Speed Through Water) to the Speed over ground (SOG), under zero tide conditions. The object of speed calibration is to ensure that the speed readings at the instruments are true indications of the boat speed.

Speed transducer performance is affected by its position and water-flow characteristics at different speeds. It is advisable to carry out calibration at various speeds across the range of your boat.

Calibrating speed (conventional transducers)

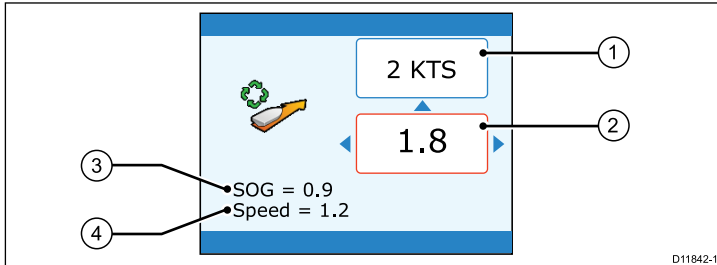
- You will need an accurate speed over ground (SOG) value, e.g. determined from a GPS connected into your SeaTalk system.
- You will need to be underway, with sufficient space to maneuver unhindered.

- Conditions should be calm water with a slack tide.

Note: It is important that there is no tide. The affect of tidal current would be to prevent an accurate speed calibration.

With the list of transducers available displayed from the **Transducer Setup** menu:

1. Press **ENTER** to proceed to the transducer setup options.
2. Select **Speed** then **Calibration** from the available options.
3. Calibrate each speed as follows, starting with the lowest:



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1	Selected calibration speed
2	Current calibration factor
3	SOG
4	Speed reading (calculated using log speed and calibration factor)

- Use the arrow keys to select the required calibration speed.
- Adjust your boat speed until the SOG is at the desired calibration speed.
- Adjust the calibration factor, until the SOG and Speed reading are the same.
- Repeat this for each calibration speed valid for your boat.

Speeds which fall outside your boat's capability need not be calibrated.

4. When complete press **ENTER** to save the settings and return to the transducer setup menu.

Calibrating speed (smart transducers)

A DST (Depth, Speed, Temperature) smart transducer has a default calibration setting which provides acceptable transducer performance in most circumstances. However you can perform your own calibration to suit your boat.

- You will need an accurate Speed over ground (SOG) value, e.g. determined from a GPS connected into your SeaTalk system.
- You will need to be underway, with sufficient space to maneuver unhindered.
- Conditions should be calm water with a slack tide.

Note: It is important that there is no tide. The affect of tidal current would be to prevent an accurate speed calibration.

You can set up to 8 calibration points across the full speed range for your boat.

With the list of transducers available displayed from the **Transducer Setup** menu:

1. Press **ENTER** to proceed to the transducer setup options.
2. Select **Speed Calibration** from the available options.

The screen will display a list of speeds to which the DST800 transducer is calibrated.

1	0.6 Hz	0.5 Kts
2	5.1 Hz	1.5 Kts
3	11.9 Hz	2.8 Kts
4	21.9 Hz	4.8 Kts
5	49.2 Hz	10.6 Kts
6	371.8 Hz	80 Kts

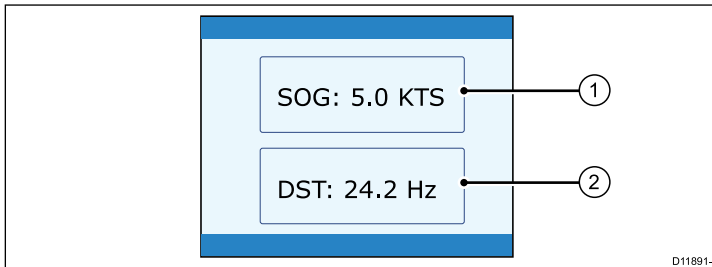
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3. Press **ENTER** to display the Speed Calibration menu. This gives the following options:

- Add point — To add a speed value to the list of calibration speeds.
- Delete point — To remove a speed value from the list of calibration speeds.
- Factory Reset — To reset the calibration to its factory default.

4. Delete and add points as necessary.

When adding a point you will see the following:



1	Current boat speed over ground (SOG)
2	DST Frequency (provided for information only)

- Adjust your boat speed until the SOG is at the desired calibration speed.
 - Press **ENTER** to confirm the calibration speed entry.
 - Repeat this for each calibration speed appropriate for your boat.
5. When you have completed the speed calibration, press **CANCEL** to return back through the menus.

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