SIMRAD

IS42J

Operator Manual

ENGLISH

www.simrad-yachting.com

Preface

Disclaimer

As Navico is continuously improving this product, we retain the right to make changes to the product at any time which may not be reflected in this version of the manual. Please contact your nearest distributor if you require any further assistance.

It is the owner's sole responsibility to install and use the equipment in a manner that will not cause accidents, personal injury or property damage. The user of this product is solely responsible for observing maritime safety practices.

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Governing language

This statement, any instruction manuals, user guides and other information relating to the product (Documentation) may be translated to, or has been translated from, another language (Translation). In the event of any conflict between any Translation of the Documentation, the English language version of the Documentation will be the official version of the Documentation.

Copyright

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Warranty

The warranty card is supplied as a separate document. In case of any queries, refer to the brand website of your unit or system:

www.simrad-yachting.com

Compliance statement

Navico declare under our sole responsibility that the product conforms with the requirements of:

- CE under EMC Directive 2014/30/EU

- Level 2 devices of the Radio communications (Electromagnetic Compatibility) standard 2017

The relevant declaration of conformity is available in the product's section at the following website:

- www.simrad-yachting.com

Warning

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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About this manual

This manual is a reference guide for operating the unit. It assumes that all equipment is installed and configured, and that the system is ready to use.

Some features may not be activated or available for screenshots in the manual. As a result, screenshots of menus and dialogs may not match the look of your unit.

Important text that requires special attention from the reader is emphasized as follows:

→ ***Note:*** Used to draw the reader's attention to a comment or some important information.

⚠ Warning: Used when it is necessary to warn personnel that they should proceed carefully to prevent risk of injury and/or damage to equipment/ personnel.

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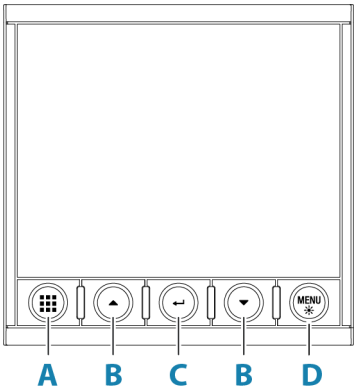
1 Basic operation

Front panel and keys



A Pages key

With no menu active:

- Press to scroll through the enabled pages
- Press and hold to display a list of enabled pages from where you can select directly the page to display

Menu and dialog operation:

- Press to return to previous menu level or to exit a dialog

B Arrow keys

- Press to move up and down in menus and dialogs
- Press to adjust a value

C Enter key

- Press to select a menu option and to enter the next menu level
- Press to activate/deactivate a menu/dialog option

D Menu/Backlight key

- Press once to display the page menu
- Double-press to display the settings dialog
- Press and hold to open the display setup dialog from where you can adjust the backlight

Turning the unit on and off

The unit is turned on by the power ON wire. Refer to the installation documentation for more information.

It is possible to put the unit in sleep mode, refer to *"Display setup"* on page 9.

Switch off the main power supply to turn the unit off.

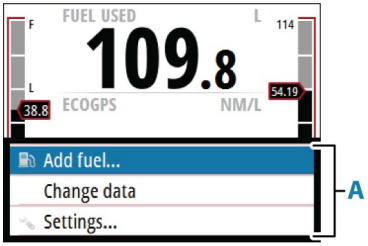
First time startup

When the unit is started for the first time, or after a factory default, the unit displays a series of dialogs. Respond to the dialog prompts to make fundamental settings.

You can perform further setup and later change settings using the system settings dialogs.

Menus

Not all pages have a page specific menu (**A**), but all page menus give access to the Settings dialog.



Activate the menu by pressing the Menu key from any page.

To navigate the menu:

- Use the arrow keys

To confirm a selection:

- Press the enter key

To return to the previous menu level:

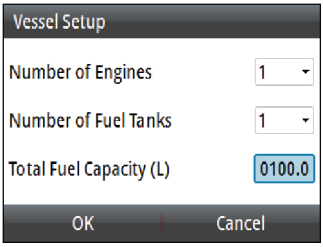
- Press the pages key

Editing a value

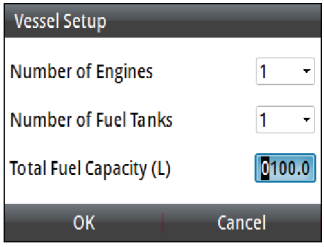
1. Press the enter key to turn the field into edit mode

- The left digit starts flashing

2. Use the arrow keys to set the value for the flashing digit
3. Press the enter key to move focus to the next digit
4. Repeat step 3 and 4 until all digits are set
5. Press the enter key to leave edit mode for the selected field



Selected field

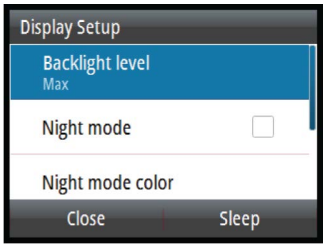


Field in edit mode

To cancel editing or leave a dialog:

- Press the pages key
- Press the menu key

Display setup



The display setup can be adjusted at any time from the Display setup dialog.

To access the dialog:

- Press and holding the menu key

→ ***Note:*** All changes made to the display setup will apply to all units belonging to the same display group. For more information about network groups, refer to *"Network groups"* on page 29.

Backlight level

Adjusts the backlight level.

When the dialog is active, you can cycle the preset backlight levels by short presses on the menu key.

Display group

Defines which network group the unit belongs to.

→ ***Note:*** All changes made to the display setup will apply to all units belonging to the same display group. For more information about network groups, refer to *"Network groups"* on page 29.

Night mode

Activates/deactivates the night mode color palette.

Night mode color

Sets the night mode color palette.

Invert day color

Changes the background color for the pages from default black to white.

Sleep mode

In Sleep mode, the backlight for the screen and keys are turned off to save power. The system continues to run in the background.

To exit Sleep mode:

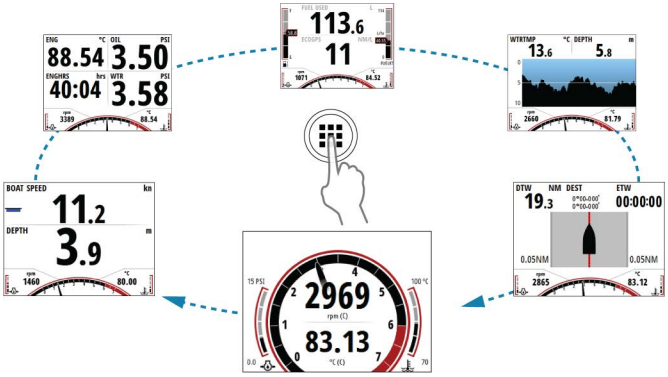
- Press the menu key

Selecting a page

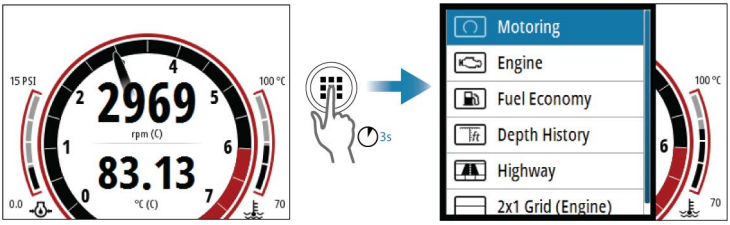
Scrolling through enabled pages

To scroll through the enabled data pages:

- Press the pages key



Directly selecting a page



To display the list of enabled pages:

- Press and hold the pages key

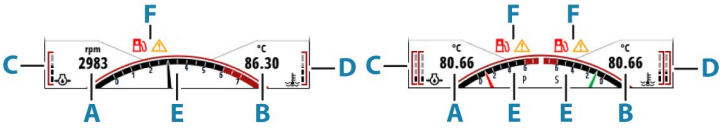
If you do not confirm your selection the menu will timeout and the highlighted page will be displayed.

2

Pages

Static gauge

Some pages have a static gauge at the bottom of the display showing engine data.

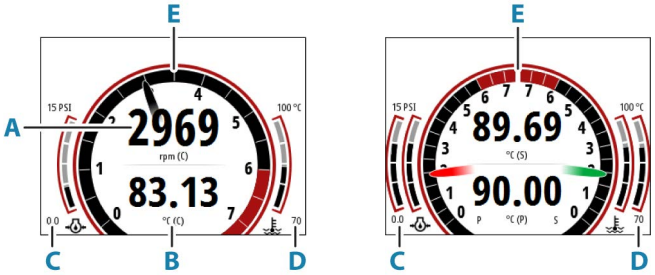


One engine ***Two engines***

	Description
A	Configurable field 1
B	Configurable field 2
C	Configurable field 3
D	Configurable field 4
E	RPM dial
F	Engine alarms

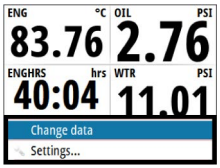
→ ***Note:*** For a dual engine setup, configurable field (**A**) and (**B**) in the static gauge can be configured to always show RPM. For more information refer to *"Engine setup"* on page 32.

Data shown in the configurable fields corresponds with the data shown on the motoring page, refer to *"Motoring"* on page 13.



One engine ***Two engines***

Changing page data

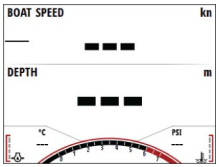


Some pages allow you to change which data is displayed on the page.

To change page data:

1. Press the menu key and select the change data option
2. If the page has multiple data fields, select the field you want to change
3. Select the data to be shown in the field
4. Repeat steps 2 and 3 to change additional fields
5. Press the menu key and save your changes

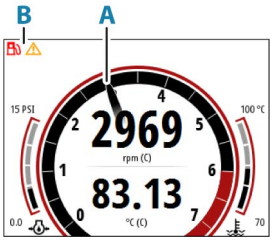
Missing or faulty data



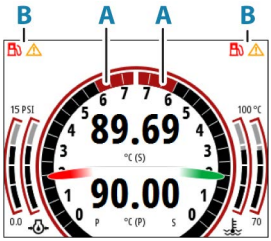
If a data type is missing or if the data is out of scale, there will be no data reading on the display. The example shows a page with missing information.

Predefined pages

Motoring



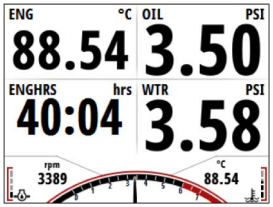
One engine



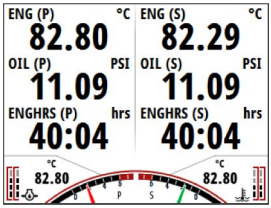
Two engines

	Description
A	RPM dial
B	Engine alarms

Engine

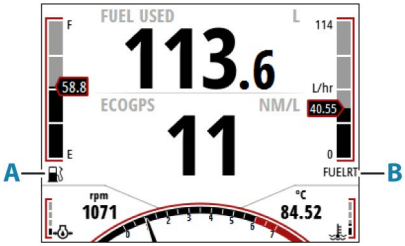


One engine



Two engines

Fuel economy



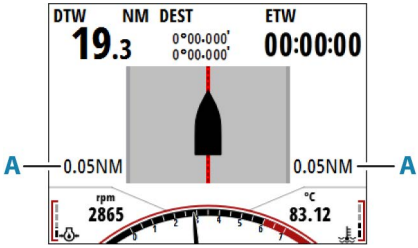
	Description
A	Remaining vessel fuel
B	Fuel rate

Page menu

From the page menu you can access the refuel dialog by pressing the add fuel option. For more information, refer to *"Fuel"* on page 17.

Highway

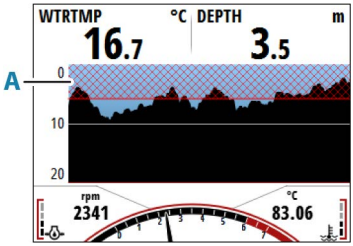
Shows navigation information, including visualization of the boat´s position on the track. The cross track error limit (**A**) is shown on the page.



→ ***Note:*** Requires a compatible navigational source connected to the network.

Depth history

Shows current water temperature, depth and a histogram of recorded depth data. The shallow water alarm limit (**A**) is visualized on the page.

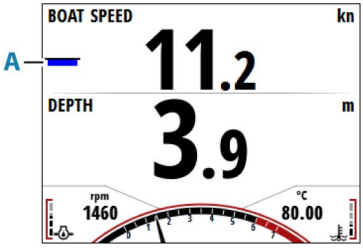


Page menu

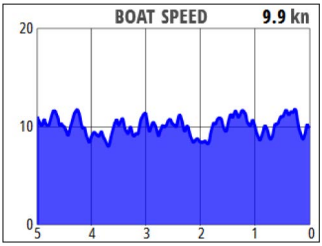
From the page menu you can change the history time range.

Basic speed/depth

The speed field includes an acceleration bar (**A**).



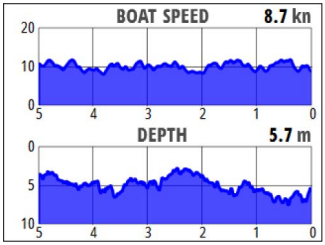
Single time plot



Page menu

From the page menu you can change the history time range.

Dual time plot



Page menu

From the page menu you can change the history time range and/or shown data.

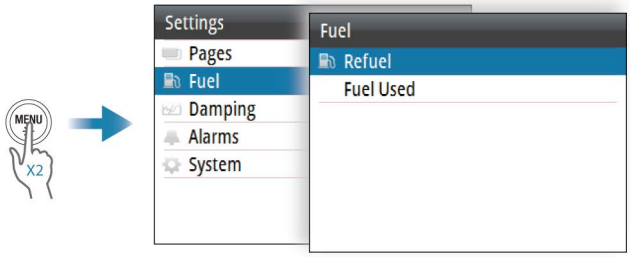
3 Fuel

Requirements

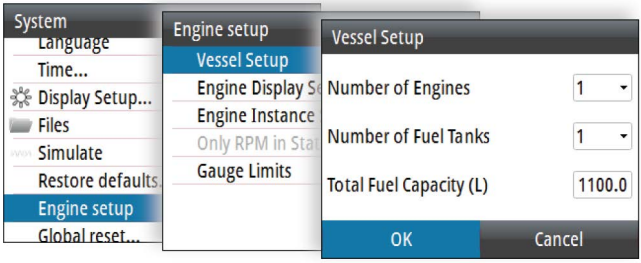
To use the fuel utility, a Navico fuel data storage device must be fitted to the vessels NMEA 2000 network.

Fuel management

Fuel settings can be found in the settings dialog.

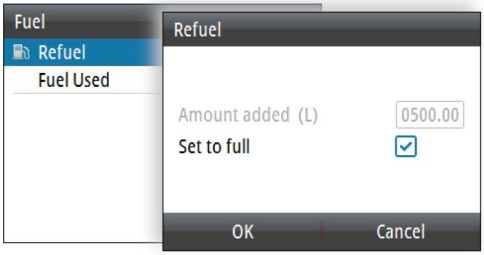


Make sure that the vessel setup is completed and the number of tanks and total fuel capacity is set to the correct value.



Adding fuel

Enter the amount of fuel added to the tank, or select the set to full option when filling the tank to its maximum capacity.



Fuel used

The fuel used dialog shows the amount of fuel used since the last fill, from trip reset and seasonal usage.

If the vessel is configured with multiple engines, the fuel used data shown is the total for all engines. It also lists data for each engine.

The reset option in the dialog allows resetting the fuel used data. You can reset all engines or each engine separately.

4 Alarms

System alarms

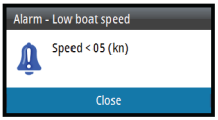
Type of messages

The messages are classified according to how the reported situation affects your vessel. The following color codes are used:

Color	Importance
Red	Critical alarm
Orange	Important alarm
Yellow	Standard alarm
Blue	Warning
Green	Lite warning

Alarm indication

An alarm situation is indicated with an alarm pop-up. If you have enabled the siren, the alarm message is followed by an audible alarm.

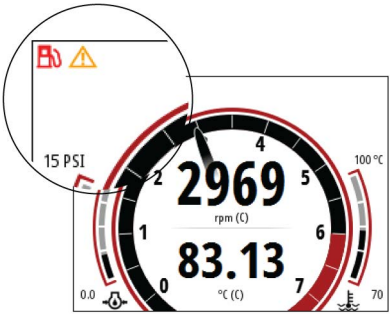


A single alarm is displayed with the name of the alarm as the title, and details for the alarm.

If more than one alarm is activated simultaneously, the alarm pop-up can display 3 alarms. The alarms are listed in the order they occur with the last activated alarm at the top. The remaining alarms are available in the alarms dialog.

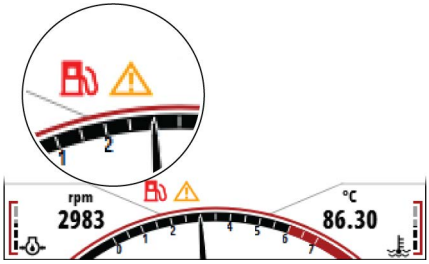
Engine alarms

For engine specific alarms, an icon will appear on the motoring page. The icon will remain active as long as that alarm instance is still valid.



→ ***Note:*** For dual engine configuration, the alarm icon will appear on the side of the display that the engine is configured.

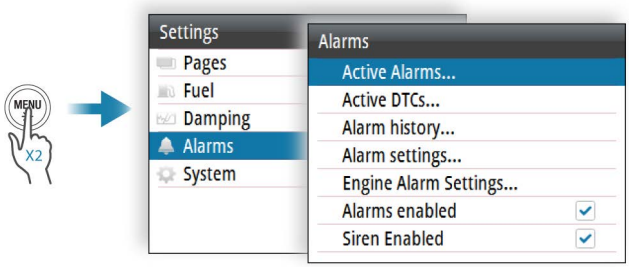
Pages that have a static gauge will also show engine alarms.



Icon	Alarm description
	Power / Charge indicator
	Check engine / General engine faults / Engine or its related system faults
	High engine temperature
	Warning - Engine malfunction - Check active alarms / DTCs for available information
	Water in fuel

Icon	Alarm description
	Low fuel pressure
	Check oil system

Accessing the alarms dialog

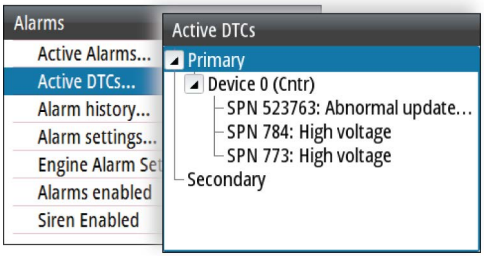


Active alarms

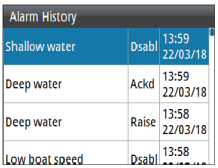
Lists all active alarms.

Active DTCs (Diagnostic Trouble Code)

Lists all active DTCs, to show details select the desired DTC.



Alarms history



The Alarm history dialog stores alarm messages until they are manually cleared.

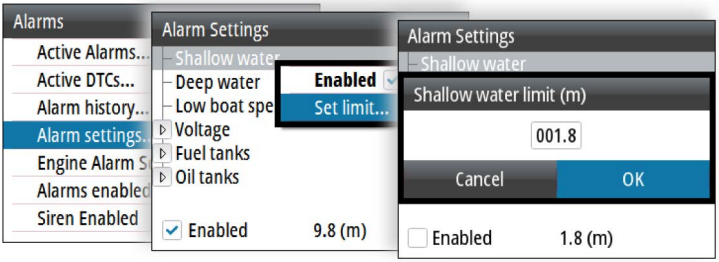
To show alarm details or to clear all alarms:

- Press the menu key and select the desired action

Alarm settings

To show the menu from where you can set the alarm limit and enable/disable an alarm:

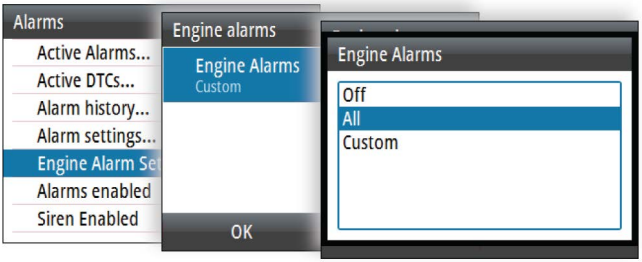
- Press the menu key



Engine alarm settings

Allows you to enable/disable engine alarms.

If you have more than one engine, use the custom option to make individual engine settings.



Alarms enabled

Enables/disables all alarms.

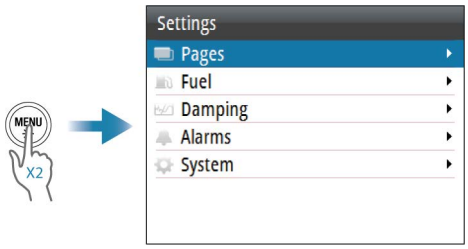
Siren enabled

Enables/disables the alarm siren.

5 User settings

Accessing the settings dialog

The software setup is done from the settings dialog.



Pages

Predefined pages

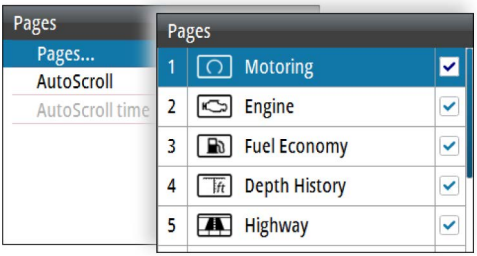
Pre-defined pages		Template pages	
	Motoring	000.0	Full screen
	Engine		2x1 Grid
	Fuel economy		2x2 Grid
ft	Depth history		2x2 Grid Offset
	Highway		3x2 Grid
	Basic Speed/Depth		3x3 Grid
	Single Time Plot		
	Dual Time Plot		

Enable/disable a page

To make a page available for display it has to be enabled.

To enable/disable a page:

- Select the desired page and press the enter key

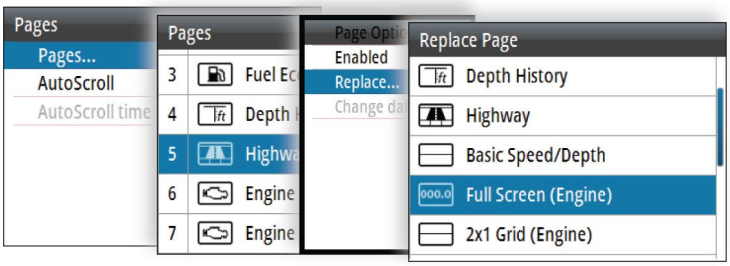


Replace a page

Pages can be replaced with one of the other predefined pages, or by a template page if you want to create a custom page.

To replace a page:

1. Highlight the desired page and press the menu key
2. Select the replace option and then select the preferred page



Creating and editing a custom page

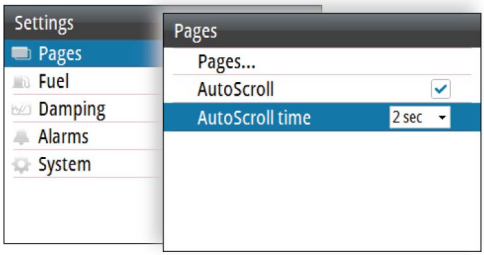
A custom page is created in a two steps process:

1. Replace one of the active pages with a template page, refer to *"Replace a page"* on page 25
2. Select the data to be shown in the page´s data field(s), refer to *"Changing page data"* on page 13

Automatic scrolling pages

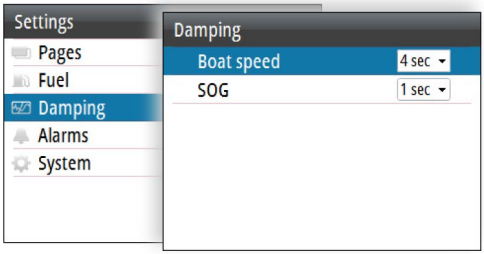
The system can automatically scroll through all enabled pages at a defined time interval.

Select the desired time interval when the automatic scroll is enabled. The time interval can be changed later, if needed.



Damping

If data appears erratic or too sensitive, damping may be applied to make the information appear more stable. With damping set to off, the data is presented in raw form with no damping applied.



6 Software setup

Software setup sequence

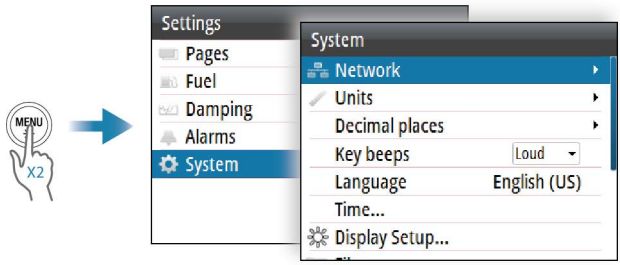
1 **General settings**
- Make general settings as desired

2 **Source selection** - refer to *"Network settings"* on page 27.
- Make sure that the proper external data sources have been selected

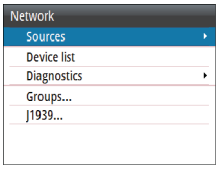
3 **Engine and vessel setup** - refer to *"Engine setup"* on page 32.
- Review the configurations made in the first time startup wizard
- Set the gauge limits to fit your equipment

Accessing the system settings dialog

The setup is done from the System settings dialog.



Network settings



Sources

Data sources provide live data to the system.

When a device is connected to more than one source providing the same data, the user can choose the preferred source. Before

commencing with source selection make sure all external devices and networks are connected and turned on.

Device list

The device list shows all NMEA 2000 devices.

Selecting a device in this list will bring up additional details and options for the device.

All devices allow allocation of an instance number in the configure option. Set unique instance numbers on any identical devices on the network to allow the unit to distinguish between them. The data option shows all data being output by the device. Some devices will show additional options specific to the device.

➔ ***Note:*** Setting the instance number on a 3rd party product is typically not possible.

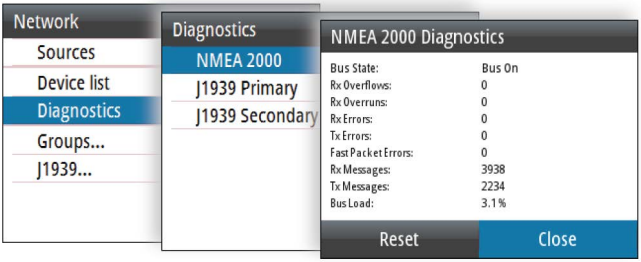
Diagnostics

Provides information useful for identifying an issue with the network.

NMEA 2000

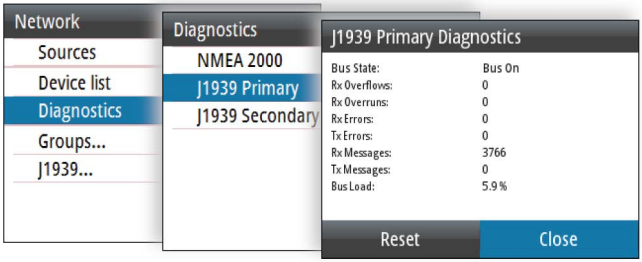
Provides information on NMEA 2000-bus activity.

➔ ***Note:*** The following information may not always indicate an issue that can be simply resolved with minor adjustment to network layout or connected devices and their activity on the network. However, Rx and Tx errors are most likely indicating issues with the physical network, which may be resolved by correcting termination, reducing backbone or drop lengths, or reducing the number of network nodes (devices).



J1939

Provides information on J1939-bus activity.

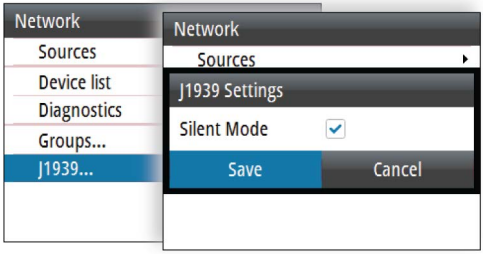


Network groups

This function is used to control parameter settings, either globally or in groups of units. The function is used on larger vessels where several units are connected to the NMEA 2000 network. By assigning several units to the same group, a parameter update on one unit will have the same effect on the rest of the group members.

If any of the settings require discrete control, set the group to None.

J1939 settings



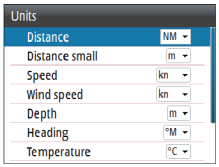
Silent mode

When enabled the unit only listens to the J1939 port(s).

When disabled the unit sends a request to the connected device for specific data.

→ ***Note:*** For communication details refer to the engine manufacturer.

Units settings



Used for specifying the units of measurement displayed.

Decimal places

Defines number of decimals used for speed and sea temperature.

Key beeps

Controls the loudness of the beep sound when a key is pressed.

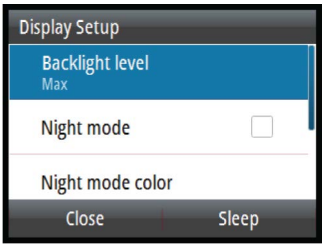
Language

Controls the language used on this unit for panels, menus, and dialogs. Changing the language causes the unit to restart.

Time

Controls the local time zone offset, and the format of the time and date.

Display setup



Backlight level

Adjusts the backlight level.

When the dialog is active, you can cycle the preset backlight levels by short presses on the menu key.

Display group

Defines which network group the unit belongs to.

→ ***Note:*** All changes made to the display setup will apply to all units belonging to the same display group. For more information about network groups, refer to *"Network groups"* on page 29.

Night mode

Activates/deactivates the night mode color palette.

Night mode color

Sets the night mode color palette.

Invert day color

Changes the background color for the pages from default black to white.

Sleep mode

In Sleep mode, the backlight for the screen and keys are turned off to save power. The system continues to run in the background.

To exit Sleep mode:

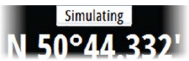
- Press the menu key

Files

File management system, used to browse the contents of the unit's internal memory and storage devices connected to the unit.

For more information refer to *"Files"* on page 34.

Simulate

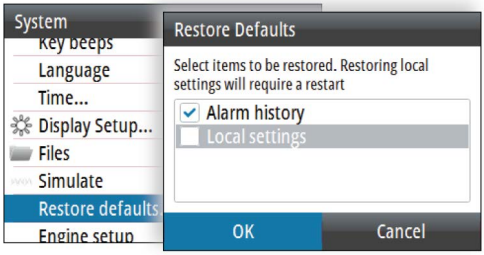


Runs the display with simulated data. Use the simulator to become familiar with your unit before using it on the water.

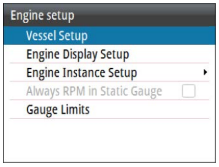
When activated, the simulator mode is indicated on the display.

Restore defaults

Restores selected settings to default factory values.



Engine setup



Vessel setup

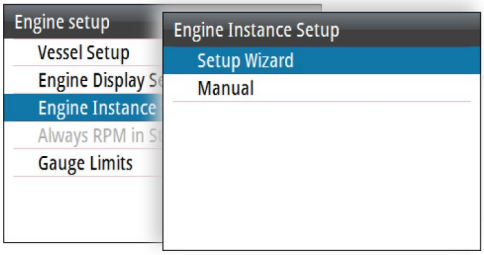
Set the number of engines, fuel tanks and total fuel capacity.

Engine display setup

A maximum of two engine's data can be shown on each gauge.

The Engine display setup defines which engine's data should be displayed on a gauge if you have more than 2 engines.

Engine instance setup

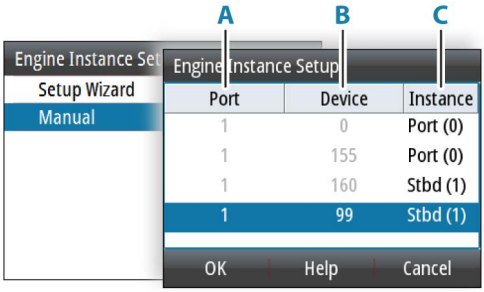


Setup wizard

The setup wizard will guide you through a series of steps to configure engine setup. Follow the instructions in the dialogs.

Manual

You can manually configure the engine instance setup. Select a device to change the instance settings for the device.



	Description
A	Indicates to which port the engine´s electronic control unit is connected to
B	J1939 unique ID or address
C	NMEA 2000 instance

Always RPM in static gauge

This option is only available if the unit is configured to show data from dual engines.

When this option is enabled the static gauge will always show RPM for both engines independently of the motoring page configuration.

Gauge limits

Used to set visual gauge limits.

→ ***Note:*** These limits are a visual guide on the data pages. They do not set any alarms.

Global reset

Resets the source selection on all displays connected to the network.

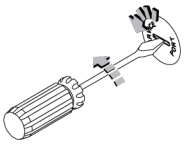
About

Displays copyright information, software version, and technical information for this unit.

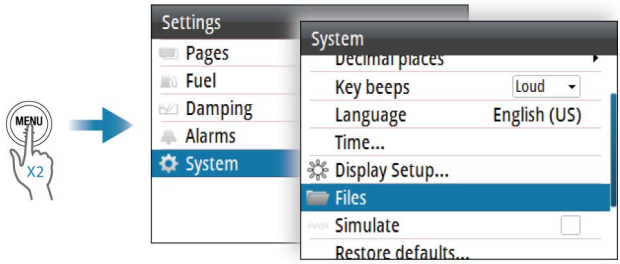
7 Files

USB mass storage device

The USB port can be used to connect a USB mass storage device.



Accessing the files dialog



Software update

You can update the unit's software and NMEA 2000 devices' software that are connected to the network, from the unit.

Download the latest software

The latest software is available for download from our website:

- www.simrad-yachting.com

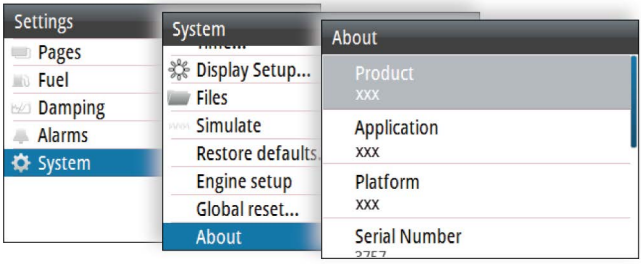
Update the unit's software

1. Download and save the latest software update file for the unit to a storage device
2. Make sure that the unit is turned off
3. Connect the storage device to the unit

4 Turn the unit ON, the update procedure will start automatically

5 When the update is completed, remove the storage device from the unit

You can check the unit´s software version from the About dialog.



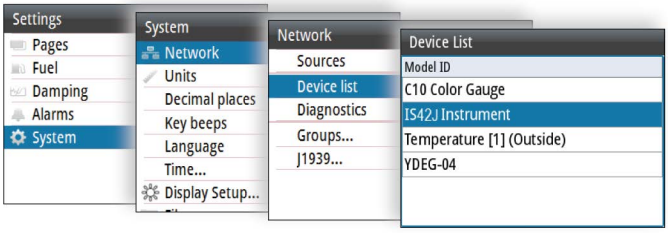
Remote device software update

1 Download and save the latest software update file for the remote device to a storage device

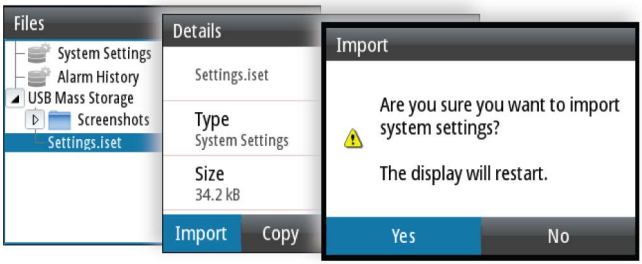
2 Connect the storage device to the unit

3 To start the update, select the update file from the storage device

The software version for connected NMEA 2000 sensors is available in the Device list.



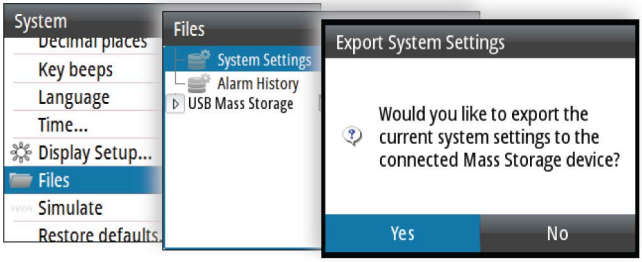
Import system settings



1. Connect a storage device to the unit
2. Brows the memory and select the desired backup file to start the import

> ⚠ Warning: Importing system settings overwrites all existing system settings.

Export system settings



1. Connect a storage device to the unit
2. Select the system settings option to initiate the export

8 Maintenance

Preventive maintenance

The unit does not contain any field serviceable components. Therefore, the operator is required to perform only a very limited amount of preventative maintenance.

If a sun cover is available, it is recommended that you always fit it when the unit is not in use.

Cleaning the display unit

To clean the screen:

- A micro-fiber or a soft cotton cloth should be used to clean the screen. Use plenty of water to dissolve and take away salt remains. Crystallized salt, sand, dirt, etc. can scratch the protective coating if using a damp cloth. Use a light fresh water spray then wipe the unit dry with a micro-fiber or a soft cotton cloth. Do not apply pressure with the cloth.

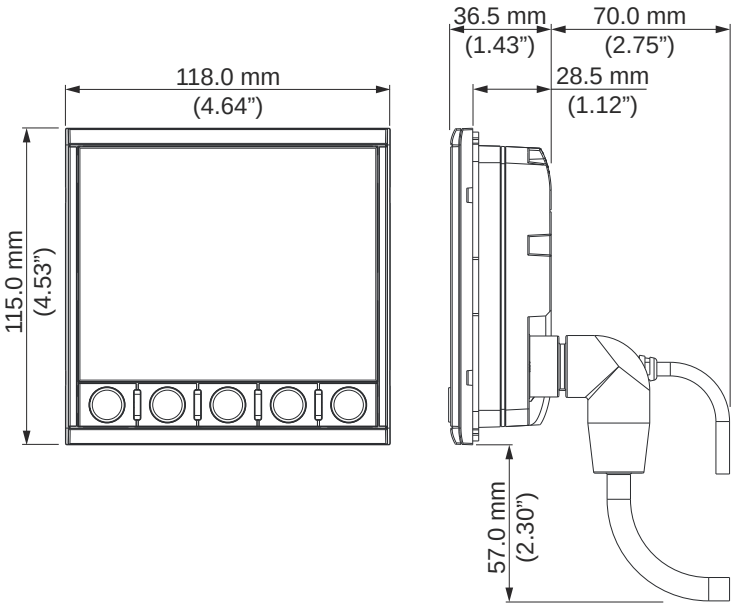
To clean the housing:

- Use warm water with a dash of liquid dish soap or detergent.

Avoid using abrasive cleaning products or products containing solvents (acetone, mineral turpentine, etc.), acid, ammonia, or alcohol as they can damage the display and plastic housing.

Do not use a jet or high pressure wash. Do not run your unit through a car wash.

9 Dimensional drawings



10 Technical specifications

Dimensions	Refer to *"Dimensional drawings"* on page 38
Electrical	
Supply voltage	12 V DC (10 - 15 V DC)
Fuse rating	3 A
Power consumption max	2.16 W (160 mA at 13.5 V DC)
Network load	1 LEN
Display	
Size	4.1" diagonal, 4:3 Aspect ratio
Resolution	320 x 240 pixels
Brightness	1200 nits
Viewing angles	80° top/bottom, 80° left/right
Environmental	
Waterproof rating	IPx7
Operating	-25° to +65°C (-13°F to +149 °F)
Storage	-40° to +85°C (-40°F to +185 °F)

11 Supported data

NMEA 2000

Receive

59392	ISO Acknowledgement
59904	ISO Request
60928	ISO Address Claim
126208	ISO Command Group Function
126992	System Time
126996	Product Info
127488	Engine Parameters, Rapid Update
127489	Engine Parameters, Dynamic
127505	Fluid Level
127508	Battery Status
128259	Speed, Water referenced
128267	Water Depth
129026	COG & SOG, Rapid Update
129033	Time & Date
130316	Temperature. Extended Range

Transmit

59904	ISO Request
60928	ISO Address Claim
126208	ISO Command Group Function
126996	Product Info
127258	Magnetic Variation

→ ***Note:*** For transmitted engine parameters, refer to *"J1939"* on page 41.

J1939

PGN/SPN list

J1939 SPN/PGN	Description	NMEA2000 PGN
190 / 61444	Engine Speed	127488
102 / 65270	Engine Turbocharger Boost Pressure	127488
100 / 65263	Engine Oil Pressure	127489
175 / 65262	Engine Oil Temperature 1	127489
110 / 65262	Engine Coolant Temperature	127489
167 / 65271	Alternator Potential (Voltage)	127489
183 / 65266	Engine Fuel Rate	127489
247 / 65253	Engine Total Hours of Operation	127489
109 / 65263	Engine Coolant Pressure	127489
94 / 65263	Engine Fuel Delivery Pressure	127489
92 / 61443	Engine Percent Load at Current Speed	127489
513 / 61444	Actual Engine - Percent Torque	127489
189 / 65214	Engine Rated Speed	127498
237 / 65260	Vehicle Identification Number	127498
234 / 65242	Software Identification	127498
523 / 61445	Transmission Current Gear	127493
127 / 65272	Transmission Oil Pressure	127493
177 / 65272	Transmission Oil Temperature	127493

➔ ***Note:*** The unit will act as a gateway and resend received J1939 PGN/SPN over NMEA 2000.

➔ ***Note:*** Some data are only sent when requested, refer to *"J1939 settings"* on page 29. For communication details refer to the engine manufacturer.

988-12231-001

SIMRAD