# Reference manual

## Simrad PI50
## Catch monitoring system


www.simrad.com

SIMRAD

TECHNOLOGY FOR SUSTAINABLE FISHERIES

# Simrad PI50

## Reference manual

Release 1.3.1.

This manual provides you with reference information required to operate and fully understand the commands, menus, presentation modes and options provided by the Simrad PI50. For user information in brief, refer to the *Simrad PI50 Operator manual*.

328458/C

## Revision status

| Document: 328458 / ISBN-13: 978-82-8066-120-3 / Rev.C | | |
|---|---|---|
| Rev.A | 2010-03-01 | First release with SW version 1.0.1. |
| Rev.B | 2013-01-10 | Changed to describe SW version 1.3.0. Information about new PX MultiSensor added. See **Record of changes** in chapter *About this manual* on page 9. |
| Rev.C | 2015-02-09 | Changed to describe SW version 1.3.1. Information about new PI60 Sensor Receiver with 10 channels. See **Record of changes** in chapter *About this manual* on page 9. |

## License information

| When you have obtained the necessary licenses to operate the PI50, we strongly advice that you write down the hardware ID and the license codes on this page. | | |
|---|---|---|
| **Function** | **Purpose** | **Code** |
| Hardware ID: | N/A | |
| License code | | |
| License code | | |
| License code | | |



## Disclaimer

Kongsberg Maritime AS endeavours to ensure that all information in this document is correct and fairly stated, but does not accept liability for any errors or omissions.

## Warning

**The equipment to which this manual applies must only be used for the purpose for which it was designed. Improper use or maintenance may cause damage to the equipment and/or injury to personnel. All users must be familiar with the contents of the appropriate manuals before attempting to install, operate, maintain or in any other way work on the equipment. Kongsberg Maritime AS disclaims any responsibility for damage or injury caused by improper installation, use or maintenance of the equipment.**

## Support information

If you require maintenance or repair, contact your local dealer. You can also contact us using the following address: simrad.support@simrad.com. If you need information about our other products, visit http://www.simrad.com. On this website you will also find a list of our dealers and distributors.


Kongsberg Maritime AS
www.kongsberg.com

# Table of contents

# About this manual

### Purpose

The purpose of this reference manual is to provide the descriptions, procedures and detailed parameter explanations required to allow for safe and efficient use of the Simrad PI50, as well as a thorough understanding of the system parameters and adjustments.

A good understanding of system functions and controls is essential to fully take advantage of the functionality provided. Sea conditions vary, sometimes drastically, and it is not possible to identify settings that will provide the best data at all times. Careful study of the information in this manual is highly recommended, preferably while exploring the system's functionality.

### Target audience

The manual is intended for all users of the Simrad PI50. Due to the nature of the descriptions and the level of detail provided by this manual, it is well suited for those who are – or wish to be – expert users.

We assume that you are familiar with the basic acoustic principles of sound in water, and that you have some experience with the operation of catch monitoring systems

### Click "Help"!

Installed on your Simrad PI50 you will find a comprehensive on-line help system. You may not find it in your language, but everything you can read in the *Simrad PI50 Reference manual* can also be found in the context sensitive on-line help.

To access this information click **[?]** on the **Title Bar**, or the **[?]** button in one of the dialog boxes.

Note that when you open the help system it will place itself on the top of the display presentation!

### Online information

### License information

The Simrad PI50 is a licensed product. In order to obtain a license, contact your local dealer.

### Software version

This manual complies to software version 1.3.1..

### Registered trademarks

Windows®, Windows XP®, and Windows® 7 are either registered trademarks, or trademarks of Microsoft Corporation in the United States and/or other countries.

Simrad®, SIMRAD® and the Simrad® logo are either registered trademarks, or trademarks of Kongsberg Maritime AS in Norway and other countries.

### Record of changes

**A** **2010-03-01**: First version of manual

**B** **2013-01-10**

- **a** Information about new PX MultiSensor added.
- **b** New procedures added to *Operational procedures* on page 42.
- **c** New procedures added to *Getting started* on page 20.
- **d** New procedures added to *Charging the catch monitoring sensors* on page 277.
- **e** New procedures added to *Testing the catch monitoring sensors* on page 287.
- **f** Changes in sensor configuration table. See *Default communication channels and update rates* on page 274.
- **g** Several minor corrections related to misprints and layout.

**C** **2015-02-09**

- **a** Information about new PI60 Sensor Receiver with 10 channels added.
- **b** Some minor corrections related to misprints and layout.

# Simrad PI50

Study this chapter to familiarize yourself with the Simrad PI50.

**Topics**

# Important

As with all other advanced instruments, there are a few important things that you must be aware of.

### Topics

- *When the PI50 is not used* on page 12
- *If something breaks down* on page 12
- *When you switch off the PI50* on page 12

## When the PI50 is not used

When you do not use the PI50, switch off the display and the computer.

If you know that you will not use the PI50 for a long time, we recommend that you also switch of the Sensor Receiver. Since this unit is provided with a power switch, you must disconnect the power cable.

### Related topics

- *Powering off the PI50* on page 21

## If something breaks down

If you believe that something has broken down, contact your local dealer. He will be able to assist.

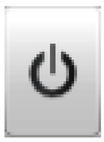
A list of all our dealers is provided on http://www.simrad.com. If you are unable to contact a dealer, observe the support information in this chapter.

### Related topics

- *Support information* on page 18

## When you switch off the PI50

You must NEVER switch off the PI50 by means of the on/off switch on the computer.



You must ALWAYS exit the PI50 application by clicking the **Exit** icon on the **Title Bar**.

If you power down the PI50 by means of the computer switch you may damage the software application and the interface parameters to external devices.

Important

Observe the procedure!

### Related topics

- *Powering off the PI50* on page 21

# System description

To know how your gear behaves is vital for efficient fishing. The Simrad PI50 system gives you all the details.

The Simrad PI50 is designed for the professional fishery community implementing the latest innovations and technology.

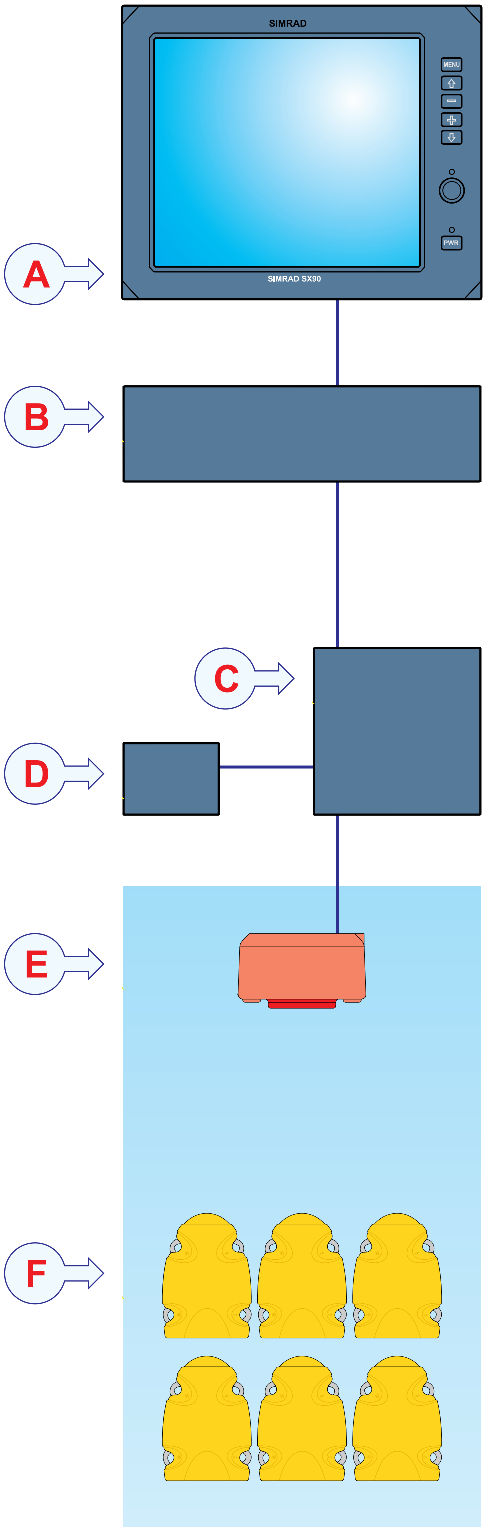
The system provides you with essential information, such as the stability of the trawl doors, the amount and quality of your catch, the behaviour of your bottom or pelagic trawl, or the correct timing of a purse seine.

As such, the catch monitoring system allows you to stay in full control of the gear and its behaviour.

The system is designed to be equally useful for all fishing types. Bottom trawlers, pelagic trawlers, purse or danish seiners - whatever kind of gear you use, all vessels can take advantage of the functionality provided by the PI50.

A large selection of wireless sensors is available for the Simrad PI50. Placed on the trawl, purse seine or danish seine they will provide you with valuable and accurate information about the gear, its behaviour and the environment.

# System diagram




The PI50 system units are small, and they can easily be fitted on all fishing vessels.

A basic PI50 system diagram is provided. Interface capabilities, power supplies and power cables are not shown.

The Simrad PI50 comprises the following units:

**A** *Colour display*

**B** *Processor Unit (computer)*

**C** *Sensor Receiver*

**D** *Power Supply*

**E** *Hydrophone*

**F** *Catch Monitoring Sensors*

The hydrophone is mounted under the vessel's hull.

Additional and/or optional units include:

- Sensor battery charger(s)
- Hydrophone selector
- Loudspeaker

Depending on which Sensor Receiver you use, the Simrad PI50 Catch monitoring system can receive six or ten measurements simultaneously from PS, PI or PX sensors. The sensors are powered by built-in rechargeable batteries. They are housed in titanium casings, and designed using advanced shock absorbing materials. The information collected by the sensors are sent through the water to the hydrophone by means of coded sound waves.

The Sensor Receiver amplifies and decodes the information, converts it to digital format, and sends it to the Processor Unit (computer). The computer interprets the information, and finally presents it to you.

A loudspeaker must be installed if you wish to hear the audible alarms. Note that a loudspeaker can not be connected directly to the computer. An amplifier is required.

# System units

The Simrad PI50 comprises the following main units.

**Topics**



## Colour display

A commercial display is used with the Simrad PI50 system.

Note that the display is not a standard part of the PI50 delivery.

## Processor Unit


The Simrad PI50 system is designed to be controlled by a commercial maritime computer. This computer must be based on the Microsoft Windows® 7 operating system. It must further be designed for rugged use, and should be able to withstand the vibrations and movements of a vessel.

The computer is normally mounted in the wheelhouse.

Note that the computer is not a standard part of the PI50 delivery. Simrad may provide a suitable maritime computer. Consult your dealer for more information.

## Sensor Receiver


The Simrad PI50 uses a custom built Sensor Receiver.

Two Sensor Receiver types are available:

- The PI50 Sensor Receiver supports six channels
- The PI60 Sensor Receiver supports ten channels

It is housed in a small cabinet. All necessary input and output sockets easily available. The unit is powered by a small external power supply. The Sensor Receiver provides the following interfaces:

- Serial line cable to the Processor Unit.
- One hydrophone
- External power supply

The maximum length of the serial line cable between the Sensor Receiver and the Processor Unit is 50 meters.

## Hydrophones

Two hull mounted hydrophones are available, one for purse seining operations, and one for trawl operations. You can install both, and then select active hydrophone by means of a selector box on the bulkhead.

### Purse seine hydrophone

The hull mounted hydrophone for purse seining operations has a 90 degrees horizontal beam and a 30 degrees vertical beam to provide the PI50 with optimal reception from the sensors on a purse seine.

This specific beam pattern is especially suited for purse seining and the wide coverage area reduces the need for careful alignment.

### Trawl hydrophone

The hull mounted hydrophone for trawling operations has a 50 degrees horizontal beam and a 30 degrees vertical beam to provide the PI50 with optimal reception from the sensors on a bottom or pelagic trawl.

This specific beam pattern is especially suited for trawling and the wide coverage area reduces the need for careful alignment.

### Portable hydrophone

A portable hydrophone is also available. It is designed as a temporary measure until a fixed hydrophone can be installed at the vessel's next planned dry docking. It has an omnidirectional beam and a 50 meter integrated cable.


The cable is sheathed in polyurethane providing robust external protection to compliment its 150 kg tensile strength.

The cable is supplied on a reel for convenient retrieval and stowage, and is equipped with a plug for easy attachment to the Sensor Receiver.

## Catch monitoring sensors

A large selection of catch monitoring sensors can be used with the PI50 system. The current software version supports the following sensors:

- PX MultiSensor
- PI Bottom Contact
- PI Catch
- PI Depth
- PI Spread
- PI Temperature
- PI Height
- PI Spread/Depth
- PI Twin Spread
- PI SeineSounder
- PI Geometry

**Related topics**

- *Sensor view descriptions* on page 124
- *Trend view descriptions* on page 151
- *Selection and configuration of sensor measurements* on page 52
- *About catch monitoring sensors* on page 241
- *About catch monitoring sensor configuration* on page 274
- *Charging the catch monitoring sensors* on page 277

# Network security

Equipment manufactured by Kongsberg Maritime are frequently connected to the ship's local area network. Connecting any computer to a network will always expose the data on that computer to all other computers connected to the network. Several threats may immediately occur:

- Remote computers can read the data.
- Remote computers can change the data.
- Remote computers can change the behaviour of the computer, for example by installing unwanted software.

Usually, two parameters are used to define the threat level:

- The likelihood that any remote connection will do any of the above.
- The damage done if a remote connection succeeds doing this.

Because Kongsberg Maritime has no information regarding the complete system installation on any vessel, we can not estimate the threat level and the need for network security. For this reason, we can not accept responsibility for network security. Systems provided by Kongsberg Maritime are regarded as stand-alone systems, even though they may be connected to a network for sensor interfaces and/or data distribution.

Important

No safety applications are installed on any Kongsberg Maritime computers to protect these against viruses, malware or unintentional access from external users.

Securing the PI50 itself has no meaning unless there is a policy in place that secures all computers in the network, including physical access by trained and trusted users. This must always be a task for the customer to implement.

# Support information

If you need technical support for your Simrad PI50 you must contact your local dealer, or one of our support departments. A list of all our dealers is provided on http://www.simrad.com.

### Norway (Main office)

- **Company name**: Kongsberg Maritime AS / Simrad
- **Address**: Strandpromenaden 50, 3190 Horten, Norway
- **Telephone**: +47 33 03 40 00
- **Telefax**: +47 33 04 29 87
- **E-mail address**: simrad.support@simrad.com
- **Website**: http://www.simrad.no

### Spain

- **Company name**: Simrad Spain
- **Address**: Poligono Partida Torres 38, 03570 Villajoyosa, Spain
- **Telephone**: +34 966 810 149
- **Telefax**: +34 966 852 304
- **E-mail address**: simrad.spain@simrad.com
- **Website**: http://www.simrad.es

### USA

- **Company name**: Kongsberg Underwater Technology Inc / Simrad Fisheries
- **Address**: 19210 33rd Ave W, Lynnwood, WA 98036, USA
- **Telephone**: +1 425 712 1136
- **Telefax**: +1 425 712 1193
- **E-mail address**: simrad.usa@simrad.com
- **Website**: http://www.simrad.com

### Malaysia

- **Company name**: Kongsberg Maritime Malaysia Sdn. Bhd
- **Address**: Unit 27-5 Signature Offices, The Boulevard, Mid Valley City, Lingkaran Syed Putra, 59200 Kuala Lumpur, Malaysia
- **Telephone**: +65 6411 7488
- **Telefax**: +60 3 2201 3359
- **E-mail address**: simrad.asia@simrad.com
- **Website**: http://www.simrad.com

# Getting started

This chapter describes how to get started with the basic operation of the PI50.

It contains a brief overview of the basic system operation and procedures. If you are a first time user, we recommend that you read through this chapter while operating the PI50 so that you can familiarize yourself with the menus, dialog boxes and display presentations.

### Are you going to power up the Simrad PI50 for the first time?

If you are about to switch on your Simrad PI50 system for the very first time, see first *Initial installation and setup procedures* on page 37. It provides relevant hardware and software procedures for initial start-up and configuration.

### Topics



### Related topics


- *Operational procedures* on page 42

# Power on/off procedures

These procedures explain how to switch the PI50 system on and off.

**Topics**



## Powering up the PI50

**Purpose**

This procedure explains how to power up the Simrad PI50 system.

**Procedure**

**1** Power up the Sensor Receiver.

The Sensor Receiver is not fitted with an on/off switch. You may leave the unit permanently powered up. If you are not using the PI50 for a long period of time, disconnect the power supply.

**2** Power up the colour display.

If required, refer to the instructions provided by the display manufacturer.

**3** Power up the Processor Unit (computer).

Wait for the operating system to start up.

**4** Double-click the PI50 icon on the desktop to start the program.

**5** Wait while the program starts on the computer.

**6** Choose user settings.

During the program load, a dialog box appears to let you choose from the current user settings available on the PI50.

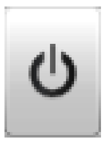
The dialog box is only visible a few seconds. You do not need to make a choice here. You can select user setting at any time by means of the **User Settings** dialog box on the **Main** menu.

**7** Observe that the program presentation fills the entire screen.

## Powering off the PI50

**Purpose**

This procedure explains how to power off the Simrad PI50.



Note

*You must never switch off the PI50 only by means of the on/off switch on the computer. This may damage the software or the interface parameters for external devices. You must ALWAYS use this procedure.*

### Procedure

**1** Click the **Exit** button in the program.

It is located on the top bar in the top right corner of the display presentation.

**2** Observe that the program closes down.

**3** If the computer does not switch itself off automatically, use the functionality provided by the operating system to switch it off manually.

**4** Switch off the colour display.

If required, refer to the instructions provided by the display manufacturer.

**5** Switch off the Sensor Receiver.

The Sensor Receiver is not fitted with an on/off switch. You may leave the unit permanently powered up. If you are not using the PI50 for a long period of time, disconnect the power supply.

# Operating principles

Like most computerized applications, the PI50 is operated using a mouse (or trackball) and an optional keyboard.

Important

In this manual, the phrase "click" means that you shall place the cursor over the specified button, field or function, and press the left mouse (or trackball) button once. The phrase "double-click" means that you shall press the mouse button twice rapidly.

The phrase "press" means that you shall press a physical button with your finger, for example a character button or the **Enter** key on the keyboard.

### Topics


- *Cursor* on page 22
- *Mouse* on page 23
- *Trackball* on page 23


### Related topics


- *The menu buttons* on page 28


## Cursor

The mouse (or trackball) controls the cursor movement on the PI50 presentation. By moving the cursor over the various information provided on the display, and clicking the left mouse button, you are able to control all operation.

Tip

If you are left-handed, the Windows operating system allows you to redefine the mouse buttons. You can then choose to click with the right button.

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The shape and purpose of the cursor change depending on its location.

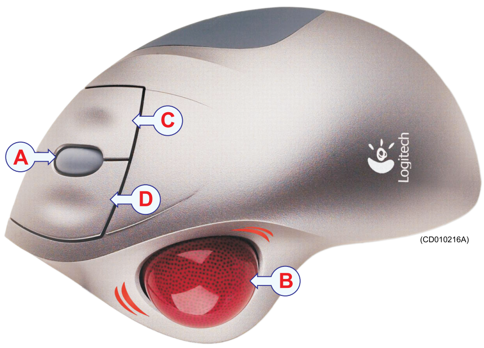
- Move the cursor over the **Title Bar** at the top of the presentation and **Status Bar** at the bottom, and left-click the icons and buttons to access the functionality provided.
- Move the cursor over the menu and menu buttons, and click to alter the operational parameters and open dialog boxes. Observe that the shape of the cursor changes over the menu buttons to indicates which choices you have to control these parameters.

## Mouse

The computer mouse can be used to control the functionality provided by the PI50. The mouse controls the movements of the cursor, and the buttons are used to click on buttons and select parameters.

## Trackball

All PI50 functions can be controlled with the trackball. The ball controls the movements of the cursor, and the buttons are used to click on buttons and select parameters. Trackballs come in several shapes and sizes. A generic version is shown as an example only.




**A** *Control wheel (not used)*

**B** *Trackball, use this to control the cursor's location on the screen*

**C** *Right mouse button (not used)*

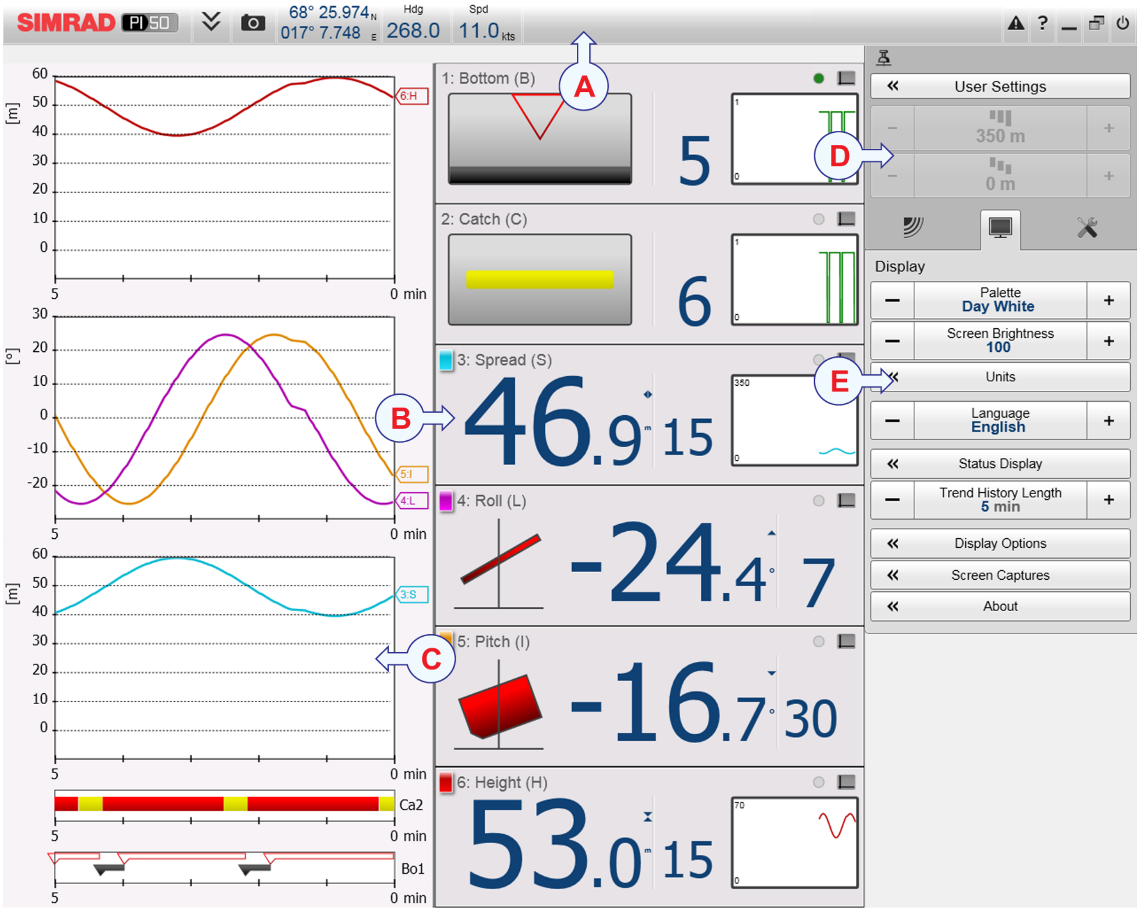
**D** *Left mouse button*

# Presentation overview

The display presentation offered by the Simrad PI50 system provides a number of sensor views. It also provide a **Title Bar** and a menu system to facilitate operation using a computer mouse or a trackball.

**Topics**

## Display organization




A typical PI50 display presentation is shown.

Note that the presentation is made using artificial sensor data from the built-in simulator.

**A Title Bar**

The **Title Bar** identifies Simrad as the manufacturer, and the name of the product (PI50). It also provides several information fields and buttons. These are used to hide or retrieve the menu system, provide navigational information, and to enable basic system functions.

**B Sensor views**

The information from each sensor is presented in a rectangle. “Dual” sensors use two channels, and they use two rectangles for presentation. The *Sensor* view holds the key information provided by sensor, as well as a *History* field. This is the small rectangle within the *Sensor* view. It offers the changes in the sensor data for the last 20 minutes.

**C Trend views**

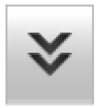
For each sensor, you can also open a *Trend* view. This is a graph providing the historic values from the sensor. Both the vertical and horizontal resolutions of the graph can be adjusted.

Click **Range** and **Range Start** on the **Main** menu to control the vertical resolution.

Click **Trend History Length** on the **Display** menu to control the horizontal resolution (5 to 1440 minutes).

**D Menu system**

The menu system is by default located on the right hand side of the presentation. To open any of the submenus, click the buttons under the **Main** menu. To hide or retrieve the entire menu system, click the **Menu** button on the **Title Bar**.



**E Submenus**

The submenus are opened and closed by clicking the buttons at the bottom of the **Main** menu.

The presentation of the various views are made automatically, and the size of each view depends on the space available. When no *Trend* views are open, the *Sensor* views will stretch from the left to the right edge of the presentation. When a *Trend* view is opened, it will position itself on the left side, and the size of the *Sensor* views will be reduced by removing the *History* field. If additional *Trend* views are opened, they will be positioned on top of each other, and the vertical size of each view is adjusted automatically.

The order of the *Sensor* views is defined by the setting made in the **Select Sensors** dialog box. The location of the *Trend* views do not follow his order. The first trend view fills the entire vertical space, the next are placed on top of the first in the same order they are opened.

### Related topics


- *Title Bar* on page 117
- *Menu system* on page 123


## Title Bar

The PI50 **Title Bar** is located on the top of the display presentation, and it is stretched from the far left to the far right side.

The purpose of the **Title Bar** is to give you fast access to key functionality and navigational information.

It provides buttons to hide or show the menu, to make a screen capture, to open the **Messages** dialog box, and to open the context sensitive on-line help. It also provides a few buttons related to operating system features.


**A** **Logo and product name.**

This element identifies the Simrad as the manufacturer of the PI50, and the product name.

**B** **Menu**

Click this button to hide or recall the menu system.

**C** **Screen capture**

This button is provided to make it easy to make a screen capture.

**D** **Navigation field**

These are not buttons, but information fields providing current data related to the vessel movements.

**E** **Message**

Click this button to open the **Messages** dialog box. This button will flash to indicate that a message is posted.

**F** **Help**

Click this button to open the context sensitive on-line help.

**G** **Function** buttons

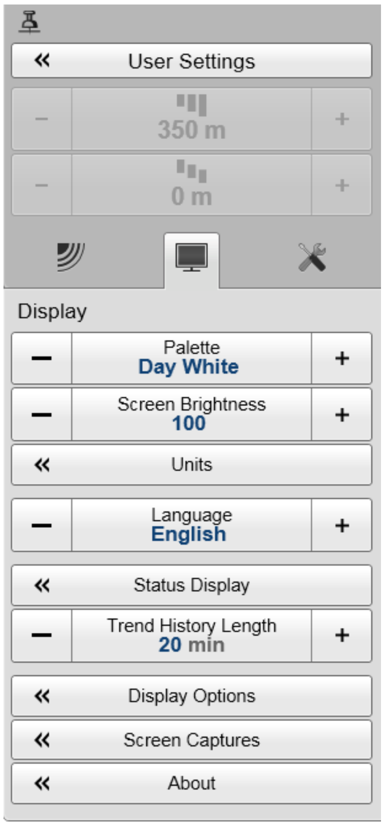
These buttons are used to control basic system functions.

- **Minimize** and **Resize**: Click these buttons to adjust the size of the PI50 presentation.
- **Exit**: Click this button to close down the PI50 application.

## Related topics


- *Powering up the PI50* on page 43
- *Powering off the PI50* on page 43
- *Messages dialog box* on page 238
- *Logo and product name* on page 119
- *Menu button* on page 119
- *Screen Capture button* on page 119
- *Navigation Field* on page 119
- *Function buttons* on page 121

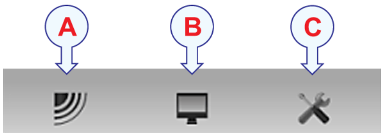
## The menu system




The menu system is by default located on the right hand side of the PI50 presentation.

The selection of operational parameters on the PI50 is done using a tree structure with a main menu, a set of submenus, and several menu buttons. Some of the menu buttons open dialog boxes or submenus to offer additional choices.

The **Main** menu provides the parameters most frequently used during normal operation.



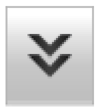

Below the main menu, dedicated buttons are used to open the submenus. These are (from left):

**A** The **Operation** menu controls the main operational parameters.

**B** The **Display** menu controls the visual aspects of the system, such as parameters related to the display presentation.

**C** The **Setup** menu allows you to control the configuration of the signal processing, as well as system installation and maintenance, and the interfaces to peripheral devices.

### Tip



You can hide the menu from view if you do not need it. Click the **Menu** button on the **Title Bar** to hide the menu. Click one more time to retrieve it.

The text in the buttons can be changed to suit your preference by clicking **Language** on the **Display** menu.

You can also place the menu on the left side of the PI50 presentation by clicking **Menu on the right side** in the **Display Options** dialog box.

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A detailed breakdown of the commands and parameters available in the menu system is provided in the *Menu system* chapter.

### Related topics


- *Selecting menu language* on page 47
- *The menu system* on page 160
- *Display Options dialog box* on page 190

## The menu buttons

Each menu contains several menu buttons. Each button shows the function of the button, some of them also display the current parameter setting. The majority of the buttons in each menu provide one or more of these functions.

**a** You can increase and decrease parameter values by clicking the [+] and [–] fields on the button.

**b** You can change parameter values by clicking on the button, holding the mouse depressed, and then moving the cursor sideways.

**c** You can change parameter values by means of the scroll wheel on the mouse or trackball.

**d** You can enter parameter values from the keyboard (if you have one).

**e** You can select parameter value from the button's submenu.

**f** You can open a dedicated dialog box.

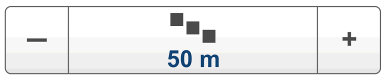
### How to select a numerical parameter using the +/- buttons

**1** Move the cursor to either side of the button, and observe that the background colour changes.

  **a** Click on the left side of the button to decrease the numerical value.

  **b** Click on the right side of the button to increase the numerical value.

### How to select a numerical parameter by moving the cursor horizontally




**1** Place the cursor on the middle of the button.

**2** Click and hold the left mouse button depressed.

**3** Move the cursor horizontally: left to decrease the value, or right to increase it.

**4** Release the mouse button when the requested value is shown.

### How to select a numerical parameter by means of the scroll wheel


**1** Place the cursor on the middle of the button.

**2** Spin the scroll wheel in either direction to increase or decrease the value.

**3** Release the scroll wheel when the requested value is shown.

### How to select a numerical parameter using the keyboard

**1** Click the middle section of the button to open a text field.

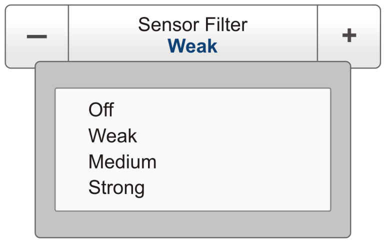
**2** Type the numerical value into the text field.

  If the numerical value exceeds the permitted range for the parameter, the frame in the text field will be red.

  You will then not be able to keep that value.

**3** Press the **Enter** key.

### How to select a parameter using a submenu




1. Click the middle section of the button to open a submenu, then click the requested command, option or button.

   The chosen value is applied, and the submenu is automatically closed.

2. Whenever applicable, you can also access the submenu by clicking the left and right side of the button. This method will not show you the choices on the submenu.

   a. Click on the left side of the button to select a 'lower' submenu choice.

   b. Click on the right side of the button to select a 'higher' submenu choice.

### How to select parameters using a dialog box


1. Click anywhere on the button to open a separate dialog box.

# Starting normal operation

Once you have powered up the complete PI50 system, you are ready to start the actual operation.

When started up, the PI50 will automatically apply its previous setup parameters.

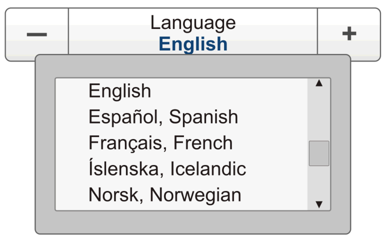
These procedures are partly provided to get you acquainted with the basic functionality provided by the PI50, partly to set up the system for normal use, and partly to start normal operation.

### Topics

- *Selecting menu language* on page 29
- *Choosing PI50 factory default settings* on page 30
- *Selecting which sensors to use* on page 31
- *Saving the current user settings* on page 34
- *Calibration of the depth sensors* on page 35

## Selecting menu language

### Purpose




The menu buttons – as well as other texts – in the PI50 presentation are available in several languages. This procedure explains how to select a different language.

### Related topics

- *Display menu* on page 166
- *Language function* on page 184

### Procedure

1 Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

2 Click the **Display** button to open the menu.

This button is located under the **Main** menu. It is used to open the **Display** submenu.

3 Click the middle of the **Language** button to open a submenu with the available languages.


You can also click the [+] and [–] characters on the button to leaf through the list of available languages.

4 Click once on the language you wish to use.

5 Observe that the submenu closes, and that all text in the menu buttons change to the selected language.

Important

To ensure that all texts are replaced with the chosen language, restart the PI50 application.

The context sensitive on-line help file may also be available in your language. To change the language in the on-line help, you must restart the PI50. If your language is *not* offered, the English on-line help will appear.

## Choosing PI50 factory default settings

### Purpose

This procedure explains how to choose the factory or saved parameter settings. Use this if you need to reset the PI50 to known settings.

### Procedure

1 Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

2 On the **Main** menu, click **User Settings** to open the **User Settings** dialog.


The **User Settings** dialog box allows you to save the current user settings (parameter selections), and to retrieve factory or previously saved user settings.

→ *User Settings dialog box* on page 170

3 In the **Factory Settings** list, click the requested factory setting.

4 Click **Activate Selected Setting**.

5 Click **Close** to exit.

# Selecting which sensors to use

### Purpose

This procedure describes how you can select which sensor to use for a specific measurement, and how you can set up the sensor parameters.

### Description

The PI50 allows you to put the entire PI and PX sensor range to use. However, you must select the sensors that you wish to use, set them up in the order you wish to see them on the screen, and select the operational parameters. Both the sensor selection and the parameter setup are done in the **Select Sensors** dialog box.

Tip

If you have several sensor configurations dedicated for different gears or different tasks, we strongly recommend that you save these for future use. Use the **User Settings** dialog box on the **Main** menu.

### Related topics

- *Saving the current user settings* on page 34
- *Sensor view descriptions* on page 124
- *User Settings dialog box* on page 170
- *Select Sensors dialog box* on page 197
- *Default communication channels and update rates* on page 274

### Procedure

**1** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**2** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**3** Click **Select Sensors** to open the **Select Sensors** dialog box.


**4** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**5** Click once a sensor type to select it.

**6** Click the [▶] button to copy the chosen sensor to the **Selected Sensors** list.

**7** Repeat to select all requested sensors.

The PI50 system will keep track of the quantity of sensors you are adding to the **Selected Sensors** list. If you try to add too many sensors, a message will let you know.

If you need to remove a sensor from the **Selected Sensors** list, click on it, and then click the [◀] button.

**8** In the **Select Sensors** dialog box, observe the items in the **Selected Sensors** list.

Tip

The order of the sensors in this list is also reflected to the order of the sensor view rectangles.

---

**9** Click once a sensor type to select it.

**10** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

**11** Observe the list of sensors in the **Sensor Configuration** field at the bottom of the dialog.

**12** For each sensor in the **Sensor Configuration** field:

**a** Select **Label ID** (identification).

This number is used to identify the catch monitoring sensor.

The **Label ID** must be unique for each sensor, and we recommend that you let it match the physical label placed on the sensor. The number you choose will be used in the *Sensor* view.

Tip

The *order* in which the *Sensor* views are presented is defined by the order in the **Selected Sensors** list.

---

**b** Select **Label Name**.

By default, the **Label Name** is the same as the sensor name listed with the **Available sensors**.

Click in the field to enter another name.

The **Label Name** is only shown in this dialog box, and you can use it to distingush between otherwise identical sensors in the **Selected Sensors** list.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

**c** Select **Update Rate**.

This parameter is used to select the sensor's update rate. This is how often the PI50 can expect to receive information from the sensor.

The default update rates for the various sensors are listed in chapter *About catch monitoring sensors* on page 241, see *Default communication channels and update rates* on page 274.

Important

The Simrad PX MultiSensor is permanently set to *Normal* update rate.

To change the update rate for a PI sensor, use the **PI Configurator** program.

Note

*The **Update Rate** parameter is vital. The update rate you choose here must comply to the update rate programmed into the sensor. If these do not match, the communication will not work.*

*If you use the PX MultiSensor, the **Update Rate** is fixed, and you must always choose Normal update rate.*

**d** Select **Sensor Value Name**.

By default, the **Sensor Value Name** is the same as the sensor name listed in the **Available Sensors** list. If you have a keyboard connected to the PI50 computer, you can click in the field, and enter another name. You can also open the on-screen keyboard.

The **Sensor Value Name** is used in the *Sensor* views. If you are setting up a dual sensor, you can enter two different names, for example “Port door” and “Starboard door”.

*Example 1 Sensor Value Name*

If you have three catch sensors on your trawl, you can name them “20 Ton”, “40 Ton” and “60 Ton”.

**e** Select **Channel Number**.

This is the communication channel used between the catch monitoring sensor and the PI50 system.

If you use more than one sensors of the same type at the same time, the channel number of one of the sensors must be changed to make it unique for the sensor. This must be changed both in the actual sensor, and in the **Select Sensors** dialog box during configuration.

The default communication channels for the various sensors are listed in chapter *About catch monitoring sensors* on page 241, see *Default communication channels and update rates* on page 274.

To change the channel number in the sensor, use either the **PI Configurator** or the **PX Configurator** program.

Note

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

**f** Observe the **Offset** value.

Sensors measuring spread and depth can have an offset value.

The offset value for the depth sensors are determined during calibration.

The offset value for the spread sensor must be entered manually based on your knowledge about the physical locations of the sensors and the properties of the gear.

**13** Click **Apply** to save the sensor configuration.

**14** Check that all sensors are shown in the PI50 presentation.

**15** Click **OK** to save the current settings and close the dialog box.

**16** If you have several sensor configurations dedicated for different gears or different tasks, we strongly recommend that you save these for future use. Use the **User Settings** dialog box on the **Main** menu.

## Saving the current user settings

### Purpose

This procedure explains how to save the current configuration and parameter settings.

If you have several different sensor configurations dedicated for various gears or different tasks, we also strongly recommend that you save these.

### Description

The settings saved using the **User Settings** functionality includes all receiver settings, interface parameters, as well as the currently selected sensors and their communication parameters. This is useful if you operate a combined trawler and seiner using different sensor setup on the different gears.

### Related topics

- *User Settings dialog box* on page 170

### Procedure

**1** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**2** On the **Main** menu, click **User Settings** to open the **User Settings** dialog box.


The **User Settings** dialog box allows you to save the current user settings (parameter selections), and to retrieve factory or previously saved user settings.

**3** Click **Save Current Setting**.

**4** Type a name for the new setting.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

**5** Click **OK** to save the settings with the chosen name.

**6** Observe that the name you have chosen appears on the **Saved Settings** list.

**7** Click **OK** to save the current settings and close the dialog box.

## Calibration of the depth sensors

### Purpose

This procedure explains how to calibrate the depth sensor.

### Description

Only depth sensors can be calibrated. The purpose is to make sure that the depth reported by the sensor is as accurate as possible. This procedure is done on board the vessel.

Note

*In order to calibrate the sensor, it must be submerged in salt water.*

---

The software provided for calibration assumes that the sensor is lowered to 1 meter deep. If you need to lower it even deeper, you will need to add this additional depth to the **Offset** value when you select and set up the sensor in the **Select Sensors** dialog.

*Example 2 Depth sensor calibration*

If you lower your sensor to 5 meters depth for calibration, you must enter 4 (meters) into the **Offset** for the sensor.

### Related topics

- *Select Sensors dialog box* on page 197

### Procedure

**1** Mount a rope to the top fastening lugs on the sensor.

**2** Tighten the rope, and measure one meter from the bottom of the sensor to a spot on the rope. Place a visual marker on the rope at that location.

**3** Lower the sensor over the side of the vessel and into the water. Lower it until the visual marker on the rope is even with the surface.

You may wish to use a different depth reference than the sea surface. If this is the case, change the marking on the rope to fit you preference, for example the depth of the keel or the depth of an echo sounder transducer.

It is also possible to attach the sensor 1 meter under a floating device. Test this arrangement before you use, and make sure that the pressure sensor on the depth sensor is located 1 meter below the sea surface when lowered into the water.

**4** Observe the numerical presentation of the sensor depth, and allow the reading to stabilize itself.

**5** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**6** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**7** Click **Calibration**.


The purpose of the **Calibration** dialog box is to accept and apply the calibration information from the depth sensor calibration.

**8** In the **Calibration** dialog, click **Start Calibration**.

**9** Wait for the PI50 system to do the calibration.

When the **Calibration** dialog box closes, the calibration has finished. Click **Close** to close the dialog box.

**10** Observe the numerical presentation of the sensor depth, and verify that it reads 1 m.

**11** Retrieve the sensor from the water.

# Context sensitive on-line help

The PI50 is provided with an extensive context sensitive on-line help system. All information of the *PI50 Reference manual* is also provided in the on-line help. The on-line help is located in a single proprietary Microsoft CHM file. This CHM file will also run on any other computer provided that the computer runs a Microsoft operating system.

To open the help system, click the **Help** button in any dialog box. This will provide instantaneous information about the relevant dialog box with links to related procedures and other topics.

Navigation in the on-line help file is made by means of the menu system on the left side, as well as the interactive links in the document.

### Related topics


- *Opening the context sensitive on-line help* on page 51
- *Updating the context sensitive on-line help* on page 97


# Initial installation and setup procedures

These are the specific procedures required to get you started with the Simrad PI50. Normally, you will only need to do these procedures once.

We recommend that you allow your dealer – with the assistance from a shipyard – to do the physical installation, install the software, obtain a valid license, and get you started.

### Topics


- *Installation of the PI50 software* on page 37
- *Obtaining and installing the PI50 software license* on page 38
- *Setting up the interface between the Processor Unit computer and the Sensor Receiver* on page 39


## Installation of the PI50 software

### Purpose

Use this procedure when you wish to install the PI50 software on a computer.

Note

*Note that minimum hardware and software requirements must be met by the computer.*

---

### Related topics

### Procedure

**1** Power up the computer.

**2** Insert the PI50 software media.

If the PI50 software is provided on a CD or DVD, and your computer is not fitted with a suitable drive, copy the files from the CD/DVD to a USB flash drive.

**3** Use a file manager application on the computer to access the software.

**4** Double-click on the **Setup.exe** file to start the installation.

**5** Allow the installation program to run. Follow the instructions provided.

**6** Once the installation has been completed, double-click the program icon on the desktop to start the program.

**7** If you use **Windows 7** operating system:

**a** Observe that **Windows 7 Firewall** will open a dialog box requesting information about the network.

Select *Public*, and click **Allow access**.

**b** The operating system may also open other dialog boxes to verify that the PI50 software can run on the computer. You must permit this.

**8** Observe the relevant start-up procedure.

## Obtaining and installing the PI50 software license

### Purpose

The PI50 requires a valid license to operate. This procedure explains how to obtain a license, and how to install it on your PI50 computer.

Without a license you will not be able to communicate with the Sensor Receiver.

Note

*If you replace your computer, or if you replace major components inside your computer, you will need a new license code.*

*We strongly advice you to record the license code for safe keeping. You may for example write it down in the beginning of this manual.*

---

### Related topics

- *Software License dialog box* on page 226

### Procedure

**1** Double-click the PI50 icon on the desktop to start the application.

**2** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**3** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**4** Click **Installation** to open the **Installation** submenu.


On the submenu, click **Software License** to open the **Software License** dialog box.


The purpose of the **Software License** dialog box is to allow you to enter a license code (text string) to unlock the PI50 functionality. In order to obtain the license code(s) required, contact your dealer.

**5** Write down the **Hardware ID** provided by the **Software License** dialog box.

**6** Contact your dealer to order the software license.

Your dealer will need the following information from you to place the order:

- Vessel name and call sign
- Vessel type (trawler, purse seiner, etc.)
- Vessel owner's name, address and contact information
- Serial number on the Sensor Receiver
- Hardware ID (as provided in the **Software License** dialog box)

**7** When the software license is returned to you, start the PI50, open the **Software License** dialog box, and click **Enter Licence String**.

**8** Write down the code, and click **Ok**.

**9** Click **OK** to save the current settings and close the dialog box.

## Setting up the interface between the Processor Unit computer and the Sensor Receiver

### Purpose

This procedure explains how to set up the communication between the Simrad PI50 computer and the Sensor Receiver. This is normally done only one time.

### Description

Communication with the Sensor Receiver is based on a serial line and proprietary telegrams. You can only set up this communication with a licensed version of the PI50 software.

Important

If you purchase the PI50 Maritime computer, serial port A (1) is set up and activated for this interface. If you use your own computer, make sure that it is equipped with an RS-232 serial port. This is the only way you can communicate with the Sensor Receiver.

### Related topics

- *I/O Setup dialog box* on page 222
- *Select Inputs dialog box* on page 235
- *Serial Port Setup dialog box* on page 232

### Physical cabling

The first step (with sub-steps) in this procedure explains how to do the physical cabling using the relevant connection. The remaining steps describe how to set up the interface parameters in the PI50 software.

### Procedure

**1** Connect the PI50 computer to the Sensor Receiver using a serial line.

   **a** Locate a free serial port that can be used for this communication.

   **b** On the chosen serial line socket on the PI50 computer (male connector), connect the RS-232 cable as follows:

   - Receive signal **Rx** on pin 2.
   - Transmit signal **Tx** on pin 3.
   - Common **Ground** on pin 5.

   **c** On the Sensor Receiver, use the only serial line socket available (female connector). Connect the RS-232 cable in a 1:1 configuration.

   Note

   *The connection between the computer and the Sensor Receiver uses a 1:1 serial cable. A suitable cable with length 2 m is provided with the Transceiver Unit. If you need a longer cable, you can extend this cable, or make your own.*

   **d** Ensure that the total length of the serial line cable does not exceed approximately 50 meters.

   If a longer cable is required, you may need to use buffer amplifiers on the serial line.

**2** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.


**3** Click the **Installation** button to open the **Installation** sub-menu.


On the menu provided, click **I/O Setup** to open the **I/O Setup** dialog box.


**4** In the **I/O Setup** dialog, select which serial port to use for this communication.

**5** Click on the chosen port to select it, then click the **Input** button to open the **Select Inputs** dialog box.

6 In the **Select Inputs** dialog, locate **PI50** on the left side, and click the [▶] button to connect it.

7 Click **OK** to save the current settings and close the dialog box.

8 In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Setup** button to open the **Serial Port Setup** dialog box.

9 In the **Serial Port Setup** dialog, enter the relevant parameters to set up the port.

- Baud rate: 4800
- Data bits: 8
- Parity: None

Important

If you use your own computer, you may need to verify these settings in the operating system.

In Windows XP, right-click **My Computer** on the desktop. Then, click **Properties →Hardware →Device manager →Ports**.

In Windows 7, open **Computer** from the "Start" icon. Then, click **System properties →Advanced system settings Hardware →Device manager →Ports**.

Right-click on **Ports** to view and/or define communication properties.

10 Click **OK** to save the current settings and close the dialog box.

11 In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Monitor** button to open the **Port Monitor** dialog box.

12 Check the data flow on the input communication line.

In order to monitor this data flow, the peripheral system must be active and transmitting information to the PI50.

13 If the data flow is operational, close all dialog boxes.

# Operational procedures

This chapter contains several operational procedures explaining how you can put your PI50 to use.

Menu navigation employed by Simrad PI50 is similar to the other Simrad applications which follow the user interface standards developed by Simrad. The main menu is normally located at the right side of the screen, and by means of dedicated icons at the bottom of the main menu, you can open the relevant submenus or dialog boxes. Menu choices shown in dark colours are not available for the current operation or operational mode.

Are there any procedures missing? Are you doing an operation that we have not explained? Write an e-mail to simrad.support@simrad.com and let us know. We may then include the procedure in the next version of this manual.

### Topics


- *Power on/off procedures* on page 43
- *User setting procedures* on page 45
- *User preference procedures* on page 47
- *Selection and configuration of sensor measurements* on page 52
- *Sensor presentation procedures* on page 82
- *Alarms and messages procedures* on page 92
- *Test and maintenance procedures* on page 95
- *External interface procedures* on page 104


### Related topics


- *Starting normal operation* on page 29

# Power on/off procedures

These procedures explain how to switch the PI50 system on and off.

### Topics

- *Powering up the PI50* on page 43
- *Powering off the PI50* on page 43

## Powering up the PI50

### Purpose

This procedure explains how to power up the Simrad PI50 system.

### Procedure

**1** Power up the Sensor Receiver.

The Sensor Receiver is not fitted with an on/off switch. You may leave the unit permanently powered up. If you are not using the PI50 for a long period of time, disconnect the power supply.

**2** Power up the colour display.

If required, refer to the instructions provided by the display manufacturer.

**3** Power up the Processor Unit (computer).

Wait for the operating system to start up.

**4** Double-click the PI50 icon on the desktop to start the program.

**5** Wait while the program starts on the computer.

**6** Choose user settings.

During the program load, a dialog box appears to let you choose from the current user settings available on the PI50.

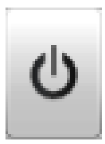
The dialog box is only visible a few seconds. You do not need to make a choice here. You can select user setting at any time by means of the **User Settings** dialog box on the **Main** menu.

**7** Observe that the program presentation fills the entire screen.

## Powering off the PI50

### Purpose

This procedure explains how to power off the Simrad PI50.



Note

*You must never switch off the PI50 only by means of the on/off switch on the computer. This may damage the software or the interface parameters for external devices. You must ALWAYS use this procedure.*

### Procedure

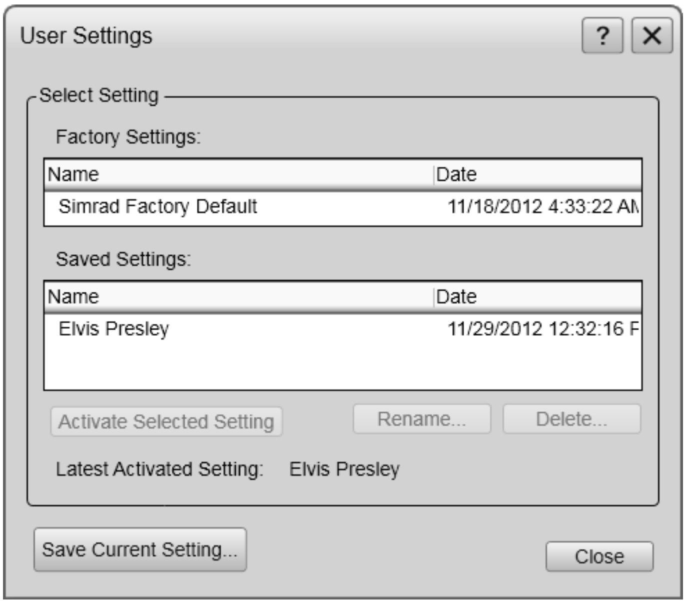
1. Click the **Exit** button in the program.

   It is located on the top bar in the top right corner of the display presentation.
2. Observe that the program closes down.
3. If the computer does not switch itself off automatically, use the functionality provided by the operating system to switch it off manually.
4. Switch off the colour display.

   If required, refer to the instructions provided by the display manufacturer.
5. Switch off the Sensor Receiver.

   The Sensor Receiver is not fitted with an on/off switch. You may leave the unit permanently powered up. If you are not using the PI50 for a long period of time, disconnect the power supply.

# User setting procedures




The PI50 allows you to save user settings. You can save as many settings as you like, the number is only limited by the size of your hard disk.

All parameters you have chosen to set up the PI50 to suit your preferences are saved. You can use any name - including your own - to identify the saved settings. Whenever required, you can retrieve any saved setting, and continue your work.

To reset the entire PI50, you can also retrieve the factory default settings.

### Topics

- *Saving the current user settings* on page 45
- *Using previously saved settings* on page 46
- *Choosing PI50 factory default settings* on page 46

### Related topics

- *User Settings dialog box* on page 170

## Saving the current user settings

### Purpose

This procedure explains how to save the current configuration and parameter settings.

If you have several different sensor configurations dedicated for various gears or different tasks, we also strongly recommend that you save these.

### Description

The settings saved using the **User Settings** functionality includes all receiver settings, interface parameters, as well as the currently selected sensors and their communication parameters. This is useful if you operate a combined trawler and seiner using different sensor setup on the different gears.

### Related topics

- *User Settings dialog box* on page 170

### Procedure

1 Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**2** On the **Main** menu, click **User Settings** to open the **User Settings** dialog box.


The **User Settings** dialog box allows you to save the current user settings (parameter selections), and to retrieve factory or previously saved user settings.

**3** Click **Save Current Setting**.

**4** Type a name for the new setting.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

**5** Click **OK** to save the settings with the chosen name.

**6** Observe that the name you have chosen appears on the **Saved Settings** list.

**7** Click **OK** to save the current settings and close the dialog box.

## Using previously saved settings

### Purpose

If you have saved operational parameters and/or configurations dedicated for different gears or tasks, you can retrieve these for fast and efficient parameter setup.

### Related topics

- *User Settings dialog box* on page 170

### Procedure

**1** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**2** On the **Main** menu, click **User Settings** to open the **User Settings** dialog box.


The **User Settings** dialog box allows you to save the current user settings (parameter selections), and to retrieve factory or previously saved user settings.

**3** In the **User Setting** dialog box, click once on the requested saved setting in the **Saved Settings** list.

**4** Click **Activate Selected Setting**.

**5** Click **OK** to save the current settings and close the dialog box.

## Choosing PI50 factory default settings

### Purpose

This procedure explains how to choose the factory or saved parameter settings. Use this if you need to reset the PI50 to known settings.

### Procedure

**1** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**2** On the **Main** menu, click **User Settings** to open the **User Settings** dialog.


The **User Settings** dialog box allows you to save the current user settings (parameter selections), and to retrieve factory or previously saved user settings.

→ *User Settings dialog box* on page 170

**3** In the **Factory Settings** list, click the requested factory setting.

**4** Click **Activate Selected Setting**.

**5** Click **Close** to exit.

# User preference procedures

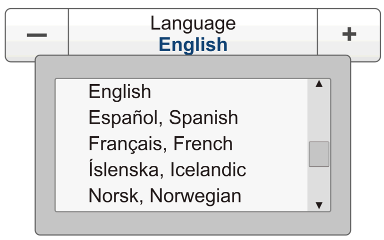
This section provides procedures related to user preferences and individual customizing.

### Topics

- *Selecting menu language* on page 47
- *Choosing colour presentation theme (palette)* on page 48
- *Choosing screen brightness* on page 49
- *Selecting measurement units* on page 50
- *Controlling the order of the sensor views* on page 50
- *Opening the context sensitive on-line help* on page 51

## Selecting menu language

### Purpose




The menu buttons – as well as other texts – in the PI50 presentation are available in several languages. This procedure explains how to select a different language.

### Related topics

- *Display menu* on page 166
- *Language function* on page 184

### Procedure

**1** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**2** Click the **Display** button to open the menu.

This button is located under the **Main** menu. It is used to open the **Display** submenu.

**3** Click the middle of the **Language** button to open a submenu with the available languages.


You can also click the [+] and [–] characters on the button to leaf through the list of available languages.

**4** Click once on the language you wish to use.

**5** Observe that the submenu closes, and that all text in the menu buttons change to the selected language.

Important

To ensure that all texts are replaced with the chosen language, restart the PI50 application.

The context sensitive on-line help file may also be available in your language. To change the language in the on-line help, you must restart the PI50. If your language is *not* offered, the English on-line help will appear.

## Choosing colour presentation theme (palette)

### Purpose

The PI50 presentation may be set up using one of several colour themes. In the menu system, these are called *palettes*.

### Description

The **Palette** function provides you with options for the colour scheme used on the PI50 display presentation. Select the background colour and brightness to suit the ambient light conditions and your preferences.

The choice you make here does not have any effect on the PI50 performance.

### Related topics

- *Display menu* on page 166

### Procedure

**1** Click the **Display** button to open the menu.

This button is located under the **Main** menu. It is used to open the **Display** submenu.

**2** On the **Display** menu, click **Colour Setup** to open the **Colour Setup** dialog box.


The purpose of the **Colour Setup** dialog box is to control the presentation colours used by the PI50.

**3** Click the palette you wish to use.

To test your choice, make a selection, and click **Apply**.

**4** Click **OK** to save the current settings and close the dialog box.

## Choosing screen brightness

### Purpose

This procedure explains how to reduce the intensity of the light emitted from the display.

### Description

When the bridge is dark, the light emitted by the PI50 display can affect your night vision. In order to compensate for this, you can reduce the intensity. The **Screen Brightness** allows you to reduce the this brightness, and hence make the display darker.

The intensity of light emitted by the display can be reduced from 100% to 0% in steps of 10.

### Related topics

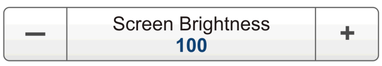
- *Display menu* on page 166
- *Screen Brightness function* on page 183
- *Display Options dialog box* on page 190

### Procedure

**1** Click the **Display** button to open the menu.

This button is located under the **Main** menu. It is used to open the **Display** submenu.

**2** Click either side of the **Screen Brightness** button to make the adjustment.



# Selecting measurement units

### Purpose

This procedure explains how to change the measurement units in the PI50 presentations.

### Description

The PI50 is prepared to work with several standards for units of measurements.

Use the **Units** dialog box to set up the various units of measurements you wish to work with. The PI50 will use these in all presentations. Normally, you will only need to define these once.

### Related topics

- *Display menu* on page 166
- *Units dialog box* on page 183

### Procedure

1 Click the **Display** button to open the menu.

This button is located under the **Main** menu. It is used to open the **Display** submenu.

2 Click **Units** to open the **Units** dialog box.


3 Make the necessary adjustments.

4 Click **OK** to save the current settings and close the dialog box.

# Controlling the order of the sensor views

### Purpose

You can control the vertical order of the sensor view rectangles. This is configuration is made in the **Select Sensors** dialog box.

### Related topics

- *Setup menu* on page 167
- *Select Sensors dialog box* on page 197
- *Select Sensors; Selected Sensors* on page 199

### Procedure

1 Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

2 Click **Select Sensors** to open the **Select Sensors** dialog box.


3 Observe the list of sensors in the **Selected Sensors** field.

4 In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**5** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

**6** Click **OK** to save the current settings and close the dialog box.

## Opening the context sensitive on-line help

### Purpose

This procedure explains how to access the context sensitive on-line help.

### Description

The PI50 is provided with an extensive context sensitive on-line help system. All information of the *PI50 Reference manual* is also provided in the on-line help. The on-line help is located in a single proprietary Microsoft CHM file. This CHM file will also run on any other computer provided that the computer runs a Microsoft operating system.

To open the help system, click the **Help** button in any dialog box. This will provide instantaneous information about the relevant dialog box with links to related procedures and other topics.

Navigation in the on-line help file is made by means of the menu system on the left side, as well as the interactive links in the document.

### Related topics


- *Context sensitive on-line help* on page 37
- *Updating the context sensitive on-line help* on page 97


### Procedure

**1** **Method 1:**

Click the [?] icon on the **Title bar**. This will open the on-line help file on its start page.

**2** **Method 2:**

Click the **Help** button in any dialog box. The description of the related dialog box will appear in the help window.

# Selection and configuration of sensor measurements

This section provides the procedures to set up the measurements made by the various catch monitoring sensors supported by the PI50. A generic procedure is offered, as well as separate procedures for each measurement. All measurements are set up using the **Select Sensors** dialog box.

### Topics



## Generic procedure for sensor and measurement selection

### Purpose

This procedure describes how you can select which sensor to use for a specific measurement, and how you can set up the sensor parameters.

### Description

The PI50 allows you to put the entire PI and PX sensor range to use. However, you must select the sensors that you wish to use, set them up in the order you wish to see them on the screen, and select the operational parameters. Both the sensor selection and the parameter setup are done in the **Select Sensors** dialog box.

Tip

If you have several sensor configurations dedicated for different gears or different tasks, we strongly recommend that you save these for future use. Use the **User Settings** dialog box on the **Main** menu.

## Related topics

- *Saving the current user settings* on page 34
- *Sensor view descriptions* on page 124
- *User Settings dialog box* on page 170
- *Select Sensors dialog box* on page 197
- *Default communication channels and update rates* on page 274

## Procedure

1. Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.
2. Click the **Setup** icon.

   This icon is located under the **Main** menu. It is used to open the **Setup** menu.

3. Click **Select Sensors** to open the **Select Sensors** dialog box.


4. Observe the **Available Sensors** list on the upper left side of the dialog box.

   It lists all the sensor types supported by the PI50.
5. Click once a sensor type to select it.
6. Click the [►] button to copy the chosen sensor to the **Selected Sensors** list.
7. Repeat to select all requested sensors.

   The PI50 system will keep track of the quantity of sensors you are adding to the **Selected Sensors** list. If you try to add too many sensors, a message will let you know.

   If you need to remove a sensor from the **Selected Sensors** list, click on it, and then click the [◄] button.
8. In the **Select Sensors** dialog box, observe the items in the **Selected Sensors** list.

   Tip

   The order of the sensors in this list is also reflected to the order of the sensor view rectangles.

9. Click once a sensor type to select it.
10. Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

    Tip

    The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

**11** Observe the list of sensors in the **Sensor Configuration** field at the bottom of the dialog.

**12** For each sensor in the **Sensor Configuration** field:

**a** Select **Label ID** (identification).

This number is used to identify the catch monitoring sensor.

The **Label ID** must be unique for each sensor, and we recommend that you let it match the physical label placed on the sensor. The number you choose will be used in the *Sensor* view.

Tip

The *order* in which the *Sensor* views are presented is defined by the order in the **Selected Sensors** list.

---

**b** Select **Label Name**.

By default, the **Label Name** is the same as the sensor name listed with the **Available sensors**.

Click in the field to enter another name.

The **Label Name** is only shown in this dialog box, and you can use it to distingush between otherwise identical sensors in the **Selected Sensors** list.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

**c** Select **Update Rate**.

This parameter is used to select the sensor's update rate. This is how often the PI50 can expect to receive information from the sensor.

The default update rates for the various sensors are listed in chapter *About catch monitoring sensors* on page 241, see *Default communication channels and update rates* on page 274.

Important

The Simrad PX MultiSensor is permanently set to *Normal* update rate.

---

To change the update rate for a PI sensor, use the **PI Configurator** program.

Note

*The **Update Rate** parameter is vital. The update rate you choose here must comply to the update rate programmed into the sensor. If these do not match, the communication will not work.*

*If you use the PX MultiSensor, the **Update Rate** is fixed, and you must always choose Normal update rate.*

**d** Select **Sensor Value Name**.

By default, the **Sensor Value Name** is the same as the sensor name listed in the **Available Sensors** list. If you have a keyboard connected to the PI50 computer, you can click in the field, and enter another name. You can also open the on-screen keyboard.

The **Sensor Value Name** is used in the *Sensor* views. If you are setting up a dual sensor, you can enter two different names, for example “Port door” and “Starboard door”.

*Example 3 Sensor Value Name*

If you have three catch sensors on your trawl, you can name them “20 Ton”, “40 Ton” and “60 Ton”.

**e** Select **Channel Number**.

This is the communication channel used between the catch monitoring sensor and the PI50 system.

If you use more than one sensors of the same type at the same time, the channel number of one of the sensors must be changed to make it unique for the sensor. This must be changed both in the actual sensor, and in the **Select Sensors** dialog box during configuration.

The default communication channels for the various sensors are listed in chapter *About catch monitoring sensors* on page 241, see *Default communication channels and update rates* on page 274.

To change the channel number in the sensor, use either the **PI Configurator** or the **PX Configurator** program.

Note

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

**f** Observe the **Offset** value.

Sensors measuring spread and depth can have an offset value.

The offset value for the depth sensors are determined during calibration.

The offset value for the spread sensor must be entered manually based on your knowledge about the physical locations of the sensors and the properties of the gear.

**13** Click **Apply** to save the sensor configuration.

**14** Check that all sensors are shown in the PI50 presentation.

**15** Click **OK** to save the current settings and close the dialog box.

**16** If you have several sensor configurations dedicated for different gears or different tasks, we strongly recommend that you save these for future use. Use the **User Settings** dialog box on the **Main** menu.

## Selecting a sensor for bottom contact measurement

### Purpose

This procedure explains how to select and set up the a bottom contact sensor.

The following Simrad catch monitoring sensors can be used to measure bottom contact:

- PI Bottom Contact
- PS Bottom Contact

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** Click once on **Bottom Contact** in the list, then click the [▶] button to copy the sensor to the **Selected Sensors** list.

**5** Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

**8** In the **Sensor Configuration** field, choose:

**a** **Label ID**

**b** **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

**c** **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

**d** **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

**e** **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

**9** If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics


- *'Bottom contact' sensor view description* on page 124
- *'Bottom contact' trend view description* on page 151
- *Selecting a sensor for bottom contact measurement* on page 56
- *Bottom contact measurements and sensors* on page 242
- *Select Sensors dialog box* on page 197


## Selecting a sensor for catch measurement

### Purpose

This procedure explains how to select and set up a catch sensor.

Note

*This procedure is also used to set up the rip measurement.*

---

The following Simrad catch monitoring sensors can be used to measure catch:

- PS Catch
- PI Catch
- PX MultiSensor

Important

The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

### Procedure

1 Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

2 Click **Select Sensors** to open the **Select Sensors** dialog box.


3 Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

4 Click once on **Catch** in the list, then click the [►] button to copy the sensor to the **Selected Sensors** list.

5 Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

6 In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

7 Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

8 In the **Sensor Configuration** field, choose:

a **Label ID**

b **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

c **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

d **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

**e** **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

**9** If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

---

**10** If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics


- *'Catch' sensor view description* on page 126
- *'Catch' trend view description* on page 152
- *Selecting a sensor for catch measurement* on page 57
- *Catch measurements and sensors* on page 244
- *Select Sensors dialog box* on page 197


## Selecting a sensor for depth measurement

### Purpose

This procedure explains how to select and set up a depth sensor.

The following Simrad catch monitoring sensors can be used to measure depth:

- PS Depth
- PI Depth
- PI Spread/Depth
- PI Height/Depth
- PI Remote/Depth
- PI SeineSounder
- PX MultiSensor

  Important

  The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

---

**Note**

*Dedicated procedures are provided for selection and configuration of the dual measurement PI sensors. The two measurements provided by the PX MultiSensor can set up individually, or according to the "dual sensor" procedures.*

---

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** If you use a PI or PS sensor, click once on the relevant **Depth** range in the list.

If you use a PX MultiSensor, click once on the **Depth 1000 m** in the list.

Then, click the [►] button to copy the chosen sensor to the **Selected Sensors** list.

With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.

**Important**

When you set up the Simrad PX MultiSensor to measure depth, make sure that you select the 1000 m depth version. If you select the wrong depth range, the measurements will be wrong!

---

**5** Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

**Tip**

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

8 In the **Sensor Configuration** field, choose:

a **Label ID**

b **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

c **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

d **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

e **Channel Number**

Note

*It is very important that the* ***Channel number*** *and* ***Update Rate*** *parameters defined for each sensor in the* ***Select Sensors*** *dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The* ***Channel number*** *must be unique for each sensor in simultaneous use.*

9 If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

10 Select offset for the depth measurement.

The offset for the depth sensor is calculated automatically by means of the calibration procedure. If you already know the offset value, you can type it in directly.

11 Click the **Advanced Sensor Configuration** button.

Observe that additional choices are added to the **Sensor Configuration** field.

12 If you have a height sensor in use, and it is physically mounted near the depth sensor, you can set up a connection to it.

In the **Sensor Linking** list, select the relevant height sensor.

This will allow the PI50 to show you the gear related to both surface and bottom. The PI50 can also calculate and display the total water depth.

13 If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics


- *'Depth' sensor view description* on page 127
- *'Depth' trend view description* on page 152
- *Selecting a sensor for depth measurement* on page 59
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Calibration of the depth sensors* on page 95
- *Depth measurements and sensors* on page 246
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197


## Selecting a sensor for height measurement

### Purpose

This procedure explains how to select and set up a height sensor.

The following Simrad catch monitoring sensors can be used to measure height:

- PI Height
- PI Height/Depth
- PI SeineSounder
- PX MultiSensor

Note

*Dedicated procedures are provided for selection and configuration of the dual measurement PI sensors. The two measurements provided by the PX MultiSensor can set up individually, or according to the "dual sensor" procedures.*

---

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** Click once on **Height** in the list, then click the [▶] button to copy the sensor to the **Selected Sensors** list.

5 Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

6 In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

7 Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

8 In the **Sensor Configuration** field, choose:

a **Label ID**

b **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

c **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

d **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

e **Channel Number**

Note

*It is very important that the* ***Channel number*** *and* ***Update Rate*** *parameters defined for each sensor in the* ***Select Sensors*** *dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The* ***Channel number*** *must be unique for each sensor in simultaneous use.*

---

9 If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

---

10 Click the **Advanced Sensor Configuration** button.

Observe that additional choices are added to the **Sensor Configuration** field.

11 Type the trawl opening.

This will allow the trawl opening to be shown in the *Height* trend view.

12 If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics

- *'Height' sensor view description* on page 130
- *'Height' trend view description* on page 153
- *Selecting a sensor for height measurement* on page 62
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Setting up the height sensor to show the trawl opening* on page 87
- *Height measurements and sensors* on page 249
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197

## Selecting a sensor for spread measurement

### Purpose

This procedure explains how to select and set up a spread sensor.

Note

*Dedicated procedures are provided for selection and configuration of the dual measurement PI sensors. The two measurements provided by the PX MultiSensor can set up individually, or according to the "dual sensor" procedures.*

The following Simrad catch monitoring sensors can be used to measure single and dual spread:

- PI Spread (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PI Spread/Depth (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PX MultiSensor

  Tip

  When the PX MultiSensor is used to measure spread, the remote sensor must be a second PX MultiSensor. The PI Remote sensor can not be used.

### Procedure

1 Click the **Setup** icon.

  This icon is located under the **Main** menu. It is used to open the **Setup** menu.

2 Click **Select Sensors** to open the **Select Sensors** dialog box.


3 Observe the **Available Sensors** list on the upper left side of the dialog box.

  It lists all the sensor types supported by the PI50.

**4** Click once on **Spread** in the list, then click the [▶] button to copy the sensor to the **Selected Sensors** list.

Tip

With both the PI Spread sensors and the Simrad PX MultiSensor, two versions are available. They can be set up for standard or extended (XT) spread range. This configuration can be changed in the relevant sensor configuration program.

---

**5** Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

**8** In the **Sensor Configuration** field, choose:

**a** **Label ID**

**b** **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

**c** **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

**d** **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

**e** **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

**9** Select offset for the spread sensor.

The offset for the spread sensor must be entered manually based on your knowledge about the sensor installation and the properties of the gear. You can enter a value between +99 and –99 meters.

**10** If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

---

**11** Click the **Advanced Sensor Configuration** button.

Observe that additional choices are added to the **Sensor Configuration** field.

**12** Connect the spread sensor to a port and/or starboard depth sensor.

This will allow you to set up the system to measure vertical geometry. Refer to the dedicated procedure.

**13** If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics


- *'Spread' sensor view description* on page 131
- *'Spread' trend view description* on page 154
- *Selecting a sensor for spread measurement* on page 64
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Spread measurements and sensors* on page 251
- *Select Sensors dialog box* on page 197


- *Select Sensors dialog box* on page 197


## Selecting a sensor for twin spread measurement

### Purpose

This procedure explains how to select and set up a sensor for twin spread measurements.

Note

*This is a "dual" measurement. The sensor system will seize two communication channels on your PI50.*

---

The following Simrad catch monitoring sensors can be used to measure single and dual spread:

- PI Spread (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PI Spread/Depth (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PX MultiSensor

  Tip

  When the PX MultiSensor is used to measure spread, the remote sensor must be a second PX MultiSensor. The PI Remote sensor can not be used.

---

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** Click once on **Twin Spread** in the list, then click the [▶] button to copy the sensor to the **Selected Sensors** list.

**5** Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

**8** In the **Sensor Configuration** field, choose:

**a** **Label ID**

**b** **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

**c** **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

**d** **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

**e** **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

**9** Select offset for the spread sensor.

The offset for the spread sensor must be entered manually based on your knowledge about the sensor installation and the properties of the gear. You can enter a value between +99 and –99 meters.

**10** If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

---

**11** If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics


- *'Twin Spread' sensor view description* on page 133
- *'Twin spread' trend view description* on page 155
- *Selecting a sensor for twin spread measurement* on page 66
- *Twin spread measurements and sensors* on page 254
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197


## Selecting a sensor for temperature measurement

### Purpose

This procedure explains how to select and set up a temperature sensor.

The following Simrad catch monitoring sensors can be used to measure temperature:

- PS Temperature
- PI Temperature
- PX MultiSensor

Important

The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

---

Note

*Dedicated procedures are provided for selection and configuration of the dual measurement PI sensors. The two measurements provided by the PX MultiSensor can set up individually, or according to the "dual sensor" procedures.*

---

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** Click once on **Temperature** in the list, then click the [►] button to copy the sensor to the **Selected Sensors** list.

**5** Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

**8** In the **Sensor Configuration** field, choose:

**a** **Label ID**

**b** **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

**c** **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

**d** **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

**e** **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

**9** If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

---

**10** If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics


- *'Temperature' sensor view description* on page 138
- *'Temperature' trend view description* on page 155
- *Selecting a sensor for temperature measurement* on page 68
- *Temperature measurements and sensors* on page 260
- *Select Sensors dialog box* on page 197


- *Select Sensors dialog box* on page 197


## Selecting a sensor for geometry measurement

### Purpose

This procedure explains how to select and set up a geometry sensor.

The following Simrad catch monitoring sensors can be used to measure geometry:

- PX MultiSensor

  You need three sensors. One must be set up as the "geometry" sensor and placed behind the headrope. The two others must be set up as "remote" sensors and placed on each trawl door.

  Important

  When a PX MultiSensor is placed on the trawl door for geometry measurements, it must be placed "backwards" with the tip of the sensor pointing towards the headrope.

  ---

  Tip

  You can also use one PX MultiSensor behind the headrope and two PI Mini-R transponders on the trawl doors.

  ---

- PI Geometry

  You need one PI Geometry sensor, and two PI Mini-R transponders. The PI Geometry sensor is placed behind the headrope, while the two PI Mini-R transponders are mounted on the trawl doors (or trawl wings).

### Description

When you select a geometry sensor in the **Select Sensor** dialog box, you are presented with the following choices:

**a** **Geometry Fine**

High resolution mode to detect smaller changes.

**b** **Geometry Coarse**

Low resolution mode to detect larger changes.

**c** **Geometry XT Fine**

Extended range, high resolution mode to detect smaller changes.

**d** **Geometry XT Coarse**

Extended range, low resolution mode to detect larger changes.

**e** **Geometry Differential Fine**

Differential measurement (uses only one communication channel), high resolution mode to detect smaller changes.

**f** **Geometry Differential Coarse**

Differential measurement (uses only one communication channel), low resolution mode to detect larger changes.

**Geometry Fine** or **Geometry Coarse** are the standard and most common configurations. Both distance measurements, as well as the difference between them, are provided by the sensor. This standard range configuration is used when the distance between the sensor and the trawl doors is less than 300 meters, and will provide the best accuracy for shorter distances.

**Geometry XT Fine** and **Geometry XT Coarse** are the extended range versions. Both distance measurements, as well as the difference between them, are provided by the sensor. These extended configurations can be used for distances up to maximum 600 meters. They not provide the same accuracy as the standard configurations.

Tip

Use extended range this only if the standard configuration can not be used.

---

Important

The PX MultiSensor does not support the extended range configurations.

---

**Geometry Differential Fine** and **Geometry Differential Coarse** both work on standard ranges. In these configurations, however, only the difference between the two measurements is provided by the sensor. This saves battery, and it will only require one channel on the host PI system.

Important

In order to use the differential configurations, you must use the PI or PX Configuration programs to set up the sensor accordingly.

---

## Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** Click once on one of the **Geometry** options in the list, then click the [▶] button to copy the chosen sensor to the **Selected Sensors** list.

Note

*The two Geometry Differential views are both "single" views. The other geometry views are all "dual". These sensors will seize two communication channels on your PI50.*

**5** Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

**8** In the **Sensor Configuration** field, choose:

**a** **Label ID**

**b** **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

**c** **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

**d** **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

**e** **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

**9** If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

**10** If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics

- *'Geometry' sensor view description* on page 141
- *'Geometry Differential' sensor view description* on page 143
- *'Geometry' trend view description* on page 156
- *Selecting a sensor for geometry measurement* on page 70
- *Geometry measurements and sensors* on page 263
- *Select Sensors dialog box* on page 197

## Selecting a sensor for roll angle measurement

### Purpose

This procedure explains how to select and set up a sensor for roll angle measurements.

The following Simrad catch monitoring sensors can be used to measure roll:

- PX MultiSensor

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** Click once on **Roll Angle** in the list, then click the [►] button to copy the sensor to the **Selected Sensors** list.

5 Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

6 In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

7 Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

8 In the **Sensor Configuration** field, choose:

a **Label ID**

b **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

c **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

d **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

e **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

9 If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

---

10 Select wether the sensor is located on the port or starboard trawl door.

11 If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics

- *'Roll' sensor view description* on page 149
- *'Roll' trend view description* on page 157
- *Selecting a sensor for roll angle measurement* on page 73
- *Roll measurements and sensors* on page 271
- *Select Sensors dialog box* on page 197

## Selecting a sensor for pitch angle measurement

### Purpose

This procedure explains how to select and set up a sensor for pitch angle measurements.

The following Simrad catch monitoring sensors can be used to measure pitch:

- PX MultiSensor

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** Click once on **Pitch Angle** in the list, then click the [►] button to copy the sensor to the **Selected Sensors** list.

**5** Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

**8** In the **Sensor Configuration** field, choose:

**a** **Label ID**

b **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

c **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

d **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

e **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

**9** If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

---

**10** Select wether the sensor is located on the port or starboard trawl door.

**11** If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics


- *'Pitch' sensor view description* on page 148
- *'Pitch' trend view description* on page 157
- *Selecting a sensor for pitch angle measurement* on page 75
- *Pitch measurements and sensors* on page 269
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197


## Selecting a dual sensor for height and depth measurements

### Purpose

This procedure explains how to select and set up a dual sensor for height and depth measurements. This measurement was originally designed for the PI SeineSounder sensor.

Note

*One PX MultiSensor can also be set up to provide height and depth measurements simultaneously. A PX sensor can be set up as two individual sensors, or as a dual sensor according to this procedure.*

---

Note

*This is a "dual" measurement. The sensor system will seize two communication channels on your PI50.*

---

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Select Sensors** to open the **Select Sensors** dialog box.


**3** Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

**4** Click once on one of the three **Height/Depth** or **SeineSounder** options in the list, then click the [▶] button to copy the chosen sensor to the **Selected Sensors** list.

With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.

Important

When you set up the Simrad PX MultiSensor to measure depth, make sure that you select the 1000 m depth version. If you select the wrong depth range, the measurements will be wrong!

---

**5** Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

**8** In the **Sensor Configuration** field, choose:

**a** **Label ID**

b **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

c **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

d **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

e **Channel Number**

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

**9** If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

**10** Select offset for the depth measurement.

The offset for the depth sensor is calculated automatically by means of the calibration procedure. If you already know the offset value, you can type it in directly.

**11** If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics


- *'Height/Depth' sensor view description* on page 145
- *Selecting a dual sensor for height and depth measurements* on page 76
- *Height/Depth measurements and sensors* on page 266
- *Select Sensors dialog box* on page 197


## Selecting a dual sensor for spread and depth measurements

### Purpose

This procedure explains how to select and set up a dual sensor for spread and depth measurements. This measurement was originally designed for the PI Spread/Depth sensor.

Note

*One PX MultiSensor can also be set up to provide spread and depth measurements simultaneously. A PX sensor can be set up as two individual sensors, or as a dual sensor according to this procedure.*

Note

*This is a "dual" measurement. The sensor system will seize two communication channels on your PI50.*

### Procedure

1 Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

2 Click **Select Sensors** to open the **Select Sensors** dialog box.


3 Observe the **Available Sensors** list on the upper left side of the dialog box.

It lists all the sensor types supported by the PI50.

4 Click once on one of the **Spread/Depth** options in the list, then click the [▶] button to copy the sensor to the **Selected Sensors** list.

With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.

Tip

With both the PI Spread sensors and the Simrad PX MultiSensor, two versions are available. They can be set up for standard or extended (XT) spread range. This configuration can be changed in the relevant sensor configuration program.

Important

When you set up the Simrad PX MultiSensor to measure depth, make sure that you select the 1000 m depth version. If you select the wrong depth range, the measurements will be wrong!

5 Observe that an error message appears if you try to add too many sensors to the **Selected Sensors** field.

Depending on which Sensor Receiver you use, the PI50 can handle maximum six or ten measurements. Remember that dual sensors each seize two communication channels.

**6** In the **Selected Sensors** field, click once on the sensor/measurement name to select it.

**7** Click one of the [▲] or [▼] buttons to move the sensor up or down on the list in the **Selected Sensors** field.

Tip

The order in this list also controls the order in which the sensors are presented in the **Sensor Configuration** field, as well as the vertical order of the sensor view rectangles in the PI50 display presentation.

---

**8** In the **Sensor Configuration** field, choose:

**a** **Label ID**

**b** **Label Name** (The name you choose here is only shown in the **Selected Sensors** list.)

**c** **Update Rate** (Note that the Simrad PX MultiSensor only supports *Normal* update rate.)

**d** **Sensor Value Name** (The name you choose here is shown in the sensor view rectangle.)

**e** **Channel Number**

Note

*It is very important that the* ***Channel number*** *and* ***Update Rate*** *parameters defined for each sensor in the* ***Select Sensors*** *dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The* ***Channel number*** *must be unique for each sensor in simultaneous use.*

---

**9** Select offset for the depth measurement.

The offset for the depth sensor is calculated automatically by means of the calibration procedure. If you already know the offset value, you can type it in directly.

**10** Select offset for the spread sensor.

The offset for the spread sensor must be entered manually based on your knowledge about the sensor installation and the properties of the gear. You can enter a value between +99 and –99 meters.

**11** If you are using a Simrad PX MultiSensor:

Important

Make sure that you have set the **Update Rate** to *Normal*.

---

**12** Click the **Advanced Sensor Configuration** button.

Observe that additional choices are added to the **Sensor Configuration** field.

13 Connect the dual spread/depth sensor with starboard depth sensor.

This will allow you to set up the system to measure vertical geometry. Refer to the dedicated procedure.

14 If this is the only sensor you wish to set up, or the last sensor, click **Ok** to save the settings and close the dialog.

### Related topics

- *'Spread/Depth' sensor view description* on page 135
- *Selecting a dual sensor for spread and depth measurements* on page 78
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Spread/Depth measurements and sensors* on page 257
- *Select Sensors dialog box* on page 197

# Sensor presentation procedures

This section provides the procedures required to calibrate sensors, reset timers, apply filters and set up special presentations.

### Topics

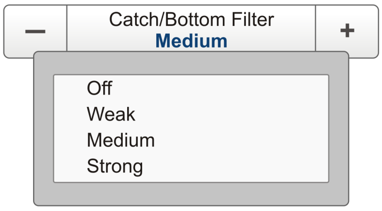

- *Smoothing out the bottom and catch readings* on page 82
- *Improving the data reception* on page 83
- *Removing noise from the sensor data* on page 84
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Setting up the height sensor to show the trawl opening* on page 87


### Related topics


- *Calibration of the depth sensors* on page 95
- *Resetting the sensor counters* on page 97


## Smoothing out the bottom and catch readings

### Purpose




This procedure explains how you can improve the information provided by the catch and bottom contact sensors by smoothening out the readings.

### Description

The **Catch/Bottom Filter** is used to restrict the change of state from the catch and bottom contact sensors. This will reduce jitter in the presentation.

When the filter is switched off any change in measurement status will immediately be shown on the display.

When set to *Weak* filtering, the change in status must last and remain stable for at least two sensor transmissions before the display is updated.

When *Strong* filtering is applied, the change in status must last and remain stable for at least eight sensor transmissions before the updated is shown on the PI50 display.

The **Catch/Bottom Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu.

Tip

You can control the filter by means of the **Catch/Bottom Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

---

### Related topics


- *Catch/Bottom Filter function* on page 177
- *Receiver dialog box* on page 206

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Receiver** to open the **Receiver** dialog box.

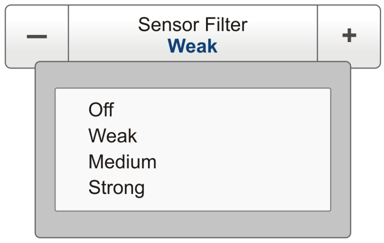

The **Receiver** dialog box allows you to set up the detailed communication parameters. It provides parameters to “fine tune” the receiver circuitry for optimal performance in various sea conditions, and for various gear types.

**3** Change the status of the **Catch/Bottom Filter**.

**4** Click **OK** to save the current settings and close the dialog box.

## Improving the data reception

### Purpose




This procedure explains how you can use the **Sensor Filter** to improve the reception.

### Description

The **Sensor Filter** can be used if you have problems with the reception. It will average the data received from the sensors.

The PI50 is designed to quickly update data.

After the sensors have been submerged, the receiver requires only three consecutive pings from individual sensors to calculate and display their respective information. However, if you experience problems with the reception, you may try this filter.

The **Sensor Filter** offers four different settings. *Weak* filtering will average the data received by the last four sensor transmissions, while *Strong* filtering averages the data received by the last 16 transmissions.

The **Sensor Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu.

Tip

You can control the filter by means of the **Sensor Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

---

### Related topics

- *Sensor Filter function* on page 176
- *Receiver dialog box* on page 206

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Receiver** to open the **Receiver** dialog box.


The **Receiver** dialog box allows you to set up the detailed communication parameters. It provides parameters to "fine tune" the receiver circuitry for optimal performance in various sea conditions, and for various gear types.

**3** Change the status of the **Sensor Filter**.

Tip

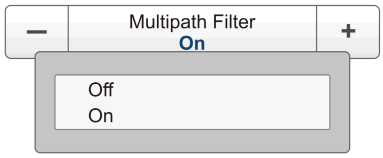
We recommend that you use *Weak* filtering if there are large fluctuations in the displayed data, or if the rate of change is small. Reduced filtering is preferable, since this shortens the delay between updating the changes in sensor data, and the corresponding displayed information.

---

**4** Click **OK** to save the current settings and close the dialog box.

## Removing noise from the sensor data

### Purpose




This procedure explains how you can use the **Multipath Filter** to remove noise.

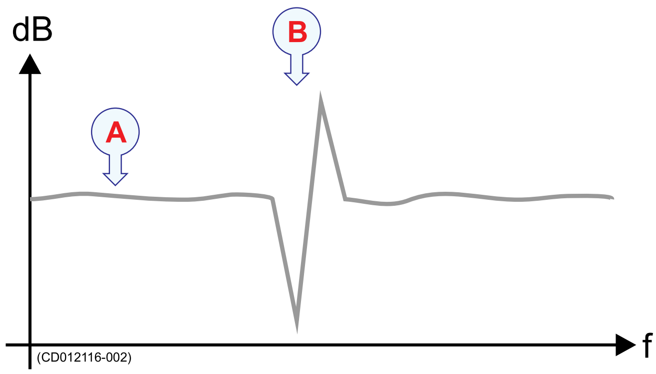
### Description

The **Multipath Filter** is designed to remedy for reflections, spikes and time-lag in the sensor data. These problems may occur if neighbouring channels are used, or if the PI50 is disturbed by other hydroacoustic systems in use on your own or other vessels.

The **Multipath Filter** can be switched on or off.

When you operate in areas with substantial reverberation due to the bottom conditions, or in shallow waters, you may experience "jumps" or spikes in the data received from the sensors.

Such errors can also be caused by other types of hydroacoustic




**A** *Stable data reading*

equipment operating on the PI50 frequency range. This filter has been implemented to remedy for such interference problem as well.

**B** *Spike caused by reflections, time-lag, reverberation or interference*

The **Multipath Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu

Tip

You can control the filter by means of the **Multipath Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

---

### Related topics

- *Multipath Filter function* on page 179
- *Receiver dialog box* on page 206

### Procedure

**1** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**2** Click **Receiver** to open the **Receiver** dialog box.


The **Receiver** dialog box allows you to set up the detailed communication parameters. It provides parameters to "fine tune" the receiver circuitry for optimal performance in various sea conditions, and for various gear types.

**3** Change the status of the **Multipath Filter**.

Tip

We recommend that you switch this filter *On* if there are large fluctuations in the displayed data, or if the rate of change is small. No filtering is preferable if instantaneous readings are required, since this shortens the delay between updating the changes in sensor data, and the corresponding displayed information.

---

The default setting of the **Multipath Filter** is *On*.

**4** Click **OK** to save the current settings and close the dialog box.

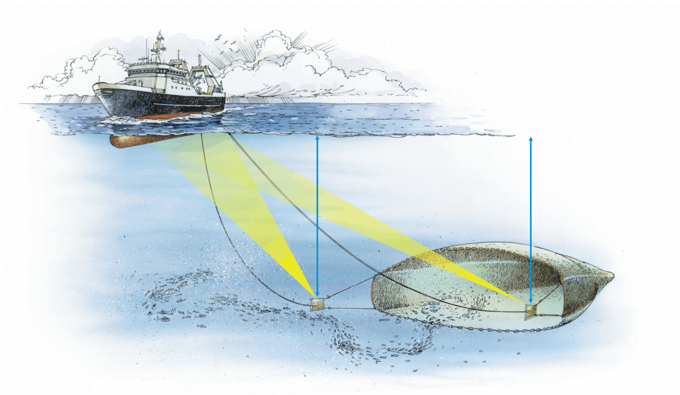
## Setting up spread and depth sensors to measure vertical geometry

### Purpose

This procedure explains how you can use two depth sensors – one on each trawl door – to measure vertical geometry.

## Description

If you have one depth sensor mounted on each trawl door, you can make the PI50 calculate the vertical geometry. The system will then read each of the two depth values, subtract one from the other, and show you the difference.


(CD012223-001)

The configuration of the vertical geometry measurement is made in the **Select Sensors** dialog box during the configuration of a spread sensor.

Note

*You must have one depth sensor on each trawl door to measure vertical geometry.*

The following Simrad catch monitoring sensors can be used to measure depth:

- PS Depth
- PI Depth
- PI Spread/Depth
- PI Height/Depth
- PI Remote/Depth
- PI SeineSounder
- PX MultiSensor

  Important

  The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

## Related topics

- *Selecting a sensor for depth measurement* on page 59
- *Selecting a dual sensor for height and depth measurements* on page 76
- *Selecting a sensor for spread measurement* on page 64
- *Selecting a dual sensor for spread and depth measurements* on page 78
- *'Vertical geometry' sensor view description* on page 129
- *Select Sensors dialog box* on page 197

## Procedure

**1** Set up the depth sensor as described in the relevant procedure.

**2** Set up the spread sensor as described in the relevant procedure.

**3** For the dedicated spread sensor, click **Advanced Sensor Configuration**.

**4** Connect the spread sensor to one or two depth sensors.

The available depth sensors will automatically be listed.

**5** Click **OK** to save the current settings and close the dialog box.

**6** Observe that the vertical geometry is shown as a sensor view.

## Setting up depth and height sensors to measure total water depth

### Purpose

This procedure explains how you can use one depth sensor and one height sensor to read the total water depth.

### Description

If you have both a depth sensor and a height sensor mounted on the gear, you can make the PI50 calculate the total depth. The system will then read each of the two sensor values, add one to the other, and show you the sum.

The configuration of the water depth measurement is made in the **Select Sensors** dialog box during the configuration of a depth sensor.

Note

*You must have both sensors on you gear. They must be physically located next to each other to make the total depth value correct.*

---

### Related topics

- *Selecting a sensor for height measurement* on page 62
- *Selecting a sensor for depth measurement* on page 59
- *'Depth' trend view description* on page 152
- *Select Sensors dialog box* on page 197

### Procedure

**1** Set up the height sensor as described in the dedicated procedure.

**2** Set up the depth sensor as described in the dedicated procedure.

**3** For the dedicated depth sensor, click **Advanced Sensor Configuration**.

The available height sensors will automatically be listed.

**4** Click **OK** to save the current settings and close the dialog box.

**5** Observe that the total depth is shown in the depth trend view.

## Setting up the height sensor to show the trawl opening

### Purpose

This procedure explains how to define the trawl opening so that you can see it in the trend view.

### Description

The PI Height sensor may be set up to display the trawl opening in the trend view.

The configuration of this function is made in the **Select Sensors** dialog during the configuration of a PI Height sensor.

The following Simrad catch monitoring sensors can be used to measure height:

- PI Height
- PI Height/Depth
- PI SeineSounder
- PX MultiSensor

### Related topics


- *Selecting a sensor for height measurement* on page 62
- *'Height' trend view description* on page 153
- *Select Sensors dialog box* on page 197


### Procedure

**1** Set up the height sensor as described in the dedicated procedure.

**2** Click **Advanced Sensor Configuration**.

**3** Type the height of the trawl door.

**4** Click **OK** to save the current settings and close the dialog box.

**5** Observe that the height of the trawl opening is shown in the height trend view.

# Receiver settings

This section provides procedures related to receiver sensitivity, interference and receiver filters.

### Topics

- *Adjusting the receiver sensitivity* on page 89
- *Suppressing interference* on page 90

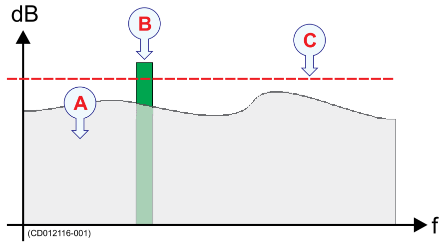
### Related topics

- *Smoothing out the bottom and catch readings* on page 82
- *Improving the data reception* on page 83
- *Removing noise from the sensor data* on page 84

## Adjusting the receiver sensitivity

### Purpose

This procedure explains how to adjust the receiver sensitivity.




**A** *Noise*

**B** *Signal from sensor*

**C** *Detection threshold*

### Description

The parameter used to adjust the receiver sensitivity is the **Detection Threshold (DT)**. It is adjusted in the **Receiver** dialog box.

Sensor signals below the threshold level will not be detected by the PI50, while signals above the threshold will be detected. If the threshold level is set too low, the sensor signal will be buried in the noise, and this may cause false signals to be detected.

If the detection threshold is set too high, the signal from the sensor will not be detected.

### Related topics

- *Receiver dialog box* on page 206

### Procedure

1 Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.


2 Click **Receiver** to open the **Receiver** dialog box.


The **Receiver** dialog box allows you to set up the detailed communication parameters. It provides parameters to “fine tune” the receiver circuitry for optimal performance in various sea conditions, and for various gear types.

3 Adjust the level of the **Detection Threshold (DT)**.

For PI50 two different parameter ranges are used:

- **3 to 14**: By increasing the parameter value, the threshold level is increased.

  This range should normally not be used for PI50.

  During special operations where extreme range is required, and the interference sources are minor, the parameter may be set to 8. If interference is present, the parameter can by increased up to maximum 14.
- **15 to 20**: By increasing the parameter value, the threshold level is decreased.

  This is the main parameter range to be used with the PI50.

The default value for **Detection Threshold (DT)** is *17*.

4 Click **OK** to save the current settings and close the dialog box.

## Suppressing interference

### Purpose

This procedure explains how to suppress interference.

### Description

Interference is normally identified in the sensor views by readings “jumping” up and down, and deviating from their expected values. Some times you may even be provided with steady readings that are obviously wrong.

To fight this disturbance, you can adjust the **Detection Threshold (DT)** parameter provided by the **Receiver** dialog box.

### Related topics

- *Receiver dialog box* on page 206

### Procedure

1 Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

2 Click **Receiver** to open the **Receiver** dialog box.


The **Receiver** dialog box allows you to set up the detailed communication parameters. It provides parameters to “fine tune” the receiver circuitry for optimal performance in various sea conditions, and for various gear types.

3 Adjust the level of the **Detection Threshold (DT)**.

Tip

Make sure that the **Interference Filter** is switched off.

**a** For normal ranges up to approximately 1500 meters:

If you experience poor reception with the sensors in the sea, try to increase the detection threshold until the data reception appears completely random. Then, decrease the parameter until you have stable data reception. If you have interference problems while no sensors have been deployed, try to decrease the detection threshold until you have a stable data reception.

**b** For long ranges above approximately 1500 meters:

Initially, use the same strategy as for normal range. However, if those actions are not enough to provide stable readings, try to set the detection threshold to 8. If your vessel's self noise and interference is lower than normal, you may achieve a range enhancement by using this value. If interference cause problems, try to increase the detection threshold value until the interference disappears, while still able to receive data from the sensors.

---

**4** Click **OK** to save the current settings and close the dialog box.

# Alarms and messages procedures

This section provides procedures related to alarms and messages generated by the PI50.

### Topics



## Handling system messages

### Purpose

This procedure explains how to read and acknowledge messages from the PI50.

### Description

A system message has been created when the **Message** icon on the **Title bar** change colour and/or flashes. The colour of the **Message** icon indicates the seriousness of the message type that is currently issued.

Messages can be acknowledged or deleted individually, or all messages displayed on a tab can be deleted.

Tip

All messages provided by the PI50 system are stored in log files on the hard disk. If you experience abnormal behaviour, these files may prove useful for Simrad's support organization. Observe the relevant procedure to copy these log files to a USB memory stick.

---

The following message types are available:

1. **Errors**: These are fatal errors. Operation of the PI50 can not continue.
2. **System alarms**: These are messages related to the PI50 system, or to major software components.
3. **Operational alarms**: These are messages related to environment conditions, interface or other non-software events.
4. **Warnings**: These are operation warnings.
5. **Information**: These messages are notifications of operational events.

Note

*If a serious error message occurs, this dialog will automatically be shown. Critical error conditions may cause the PI50 to shut down in a controlled manner.*

---

### Related topics


- *Accessing the log files to copy and/or delete them* on page 94
- *Messages dialog box* on page 238
- *Alarm Limits dialog box* on page 204

### Procedure

1 Click the **Message** icon on the **Title bar** to open the **Message** dialog box.

2 Observe that the **Message** dialog box contains one tab for each message type.

3 Select the appropriate tab.

4 Click on a message to read the full text in the field below the message listing.

   a Click **Acknowledge** to accept the chosen message.

   b Click **Acknowledge All** to accept all current messages.

   c Click **Delete** to delete the chosen message.

   d Click **Delete All** to delete the all the message under the chosen tab.

## Setting up catch sensor alarms

### Purpose

This procedure explains how to set up sensor alarms.

### Description

The **Alarm Limits** dialog box allows you to define alarms related to the information provided by the relevant catch monitoring sensors.

Each measurement has an individual alarm setting. To enable an alarm, you must define minimum and maximum limits within the sensor's range, and enable message and/or audio notification.

If the alarm is triggered, an audible signal may thus be provided, and/or you will receive a message indicating which sensor that caused the alarm.

Once an alarm has been triggered, it is automatically disabled after 20 seconds. After this time it may be triggered again unless the alarm situation has been rectified, or you have disabled the alarm.

The bottom contact and catch sensors can only provide alarms when they are activated.

The alarm settings you specify are automatically saved for the current session. If you also wish to keep them for future use – with the sensor configuration you have specified – click the **User Setting** button to save.

Tip

In order to hear an audible alarm, you must either place the PI50 computer in a position where the internal loudspeaker can be heard, or you must install a separate loudspeaker system.

### Related topics

- *User Settings dialog box* on page 170
- *Alarm Limits dialog box* on page 204

### Procedure

1 Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

2 Click **Alarm Limits** to open the **Alarm Limits** dialog.


Observe that the **Alarm Limits** dialog is dynamic. It lists the sensors you have currently selected in the **Select Sensors** dialog, and placed them in the order you have defined. The **Label ID** and **Sensor Value Name** provided are the same as those you selected in the **Select Sensors** dialog.

3 For each sensor:

**a** Set up the maximum and minimum alarm limits in the spin boxes.

**b** Click to enable message and/or audio notification

4 To disable all alarms, remove all **Message** and **Audio** selections.

5 Click **OK** to save the current settings and close the dialog box.

## Accessing the log files to copy and/or delete them

### Purpose

This procedure describes how to access the log files on the Simrad PI50.

### Description

Whenever the PI50 issues a message, it is shown in the **Messages** dialog box. Simultaneously, all messages are stored in a number of logging files on the hard disk. If you experience abnormal behavior, and wish to consult your dealer and/or Simrad, these logging files are very useful. The following procedure explains how to access these files.

Important

This procedure assumes that you are familiar with the Microsoft® XP® and/or Microsoft® 7 operating system utilities for file handling.

---

### Related topics

- 
- *Screen Captures function* on page 193

### Procedure

1 Click the **Display** button to open the menu.

This button is located under the **Main** menu. It is used to open the **Display** submenu.

2 Click **Screen Captures** to open an operating system folder.


By default, the folder name is:

`c:\documents and settings\All Users\Application data\Simrad\PI50\ScreenDumps`

3 In the folder, go one step "back" (up) to:

Windows 7: `c:\programdata\Simrad\PI50`

4 Observe that a folder named **Log** is now visible.

5 Open the **Log** folder.

The folder contains all recent log files containing the PI50 messages.

6 Using the functionality provided by the operating system, copy the log files to a USB memory stick.

Whenever possible, send the files to your dealer.

7 Close the folder.

# Test and maintenance procedures

These procedures are provided for on-board test and maintenance of the Simrad PI50.

### Topics

- *Calibration of the depth sensors* on page 95
- *Resetting the sensor counters* on page 97
- *Updating the context sensitive on-line help* on page 97
- *Software installation procedures* on page 99
- *Transducer handling and maintenance* on page 101

## Calibration of the depth sensors

### Purpose

This procedure explains how to calibrate the depth sensor.

### Description

Only depth sensors can be calibrated. The purpose is to make sure that the depth reported by the sensor is as accurate as possible. This procedure is done on board the vessel.

Note

*In order to calibrate the sensor, it must be submerged in salt water.*

---

The software provided for calibration assumes that the sensor is lowered to 1 meter deep. If you need to lower it even deeper, you will need to add this additional depth to the **Offset** value when you select and set up the sensor in the **Select Sensors** dialog.

*Example 4   Depth sensor calibration*

If you lower your sensor to 5 meters depth for calibration, you must enter 4 (meters) into the **Offset** for the sensor.

### Related topics

- *Select Sensors dialog box* on page 197

### Procedure

**1** Mount a rope to the top fastening lugs on the sensor.

**2** Tighten the rope, and measure one meter from the bottom of the sensor to a spot on the rope. Place a visual marker on the rope at that location.

**3** Lower the sensor over the side of the vessel and into the water. Lower it until the visual marker on the rope is even with the surface.

You may wish to use a different depth reference than the sea surface. If this is the case, change the marking on the rope to fit you preference, for example the depth of the keel or the depth of an echo sounder transducer.

It is also possible to attach the sensor 1 meter under a floating device. Test this arrangement before you use, and make sure that the pressure sensor on the depth sensor is located 1 meter below the sea surface when lowered into the water.

**4** Observe the numerical presentation of the sensor depth, and allow the reading to stabilize itself.

**5** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**6** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**7** Click **Calibration**.


The purpose of the **Calibration** dialog box is to accept and apply the calibration information from the depth sensor calibration.

**8** In the **Calibration** dialog, click **Start Calibration**.

**9** Wait for the PI50 system to do the calibration.

When the **Calibration** dialog box closes, the calibration has finished. Click **Close** to close the dialog box.

**10** Observe the numerical presentation of the sensor depth, and verify that it reads 1 m.

**11** Retrieve the sensor from the water.

## Resetting the sensor counters

### Purpose

This procedure explains how to reset the sensor timers.

### Description

The catch and bottom contact sensor presentations both have a timer feature. Each timer indicates how many times the sensor has been activated during a tow. To reset the timers to zero -0- prior to a new tow, or during a tow, click this button once.

Note that you will not be asked for confirmation.

### Related topics

- *Reset Counters function* on page 180

### Procedure

**1** Click the **Operation** icon.

This icon is located under the **Main** menu. It is used to open the **Operation** menu.

**2** Click **Reset Counters**.


The **Reset Counters** function allows you to reset the built-in timer function.

## Updating the context sensitive on-line help

### Purpose

This procedure explain how to update the context sensitive on-line help system on the PI50.

### Description

The on-line help for the Simrad PI50 is provided on the CHM file format. This is a proprietary format created by Microsoft for this purpose. It also means that the CHM files can only be used on computers with a Microsoft operating system. The entire help system for the PI50 consists of one single CHM file for each language.

The on-line help for the Simrad PI50 can be updated independent of the PI50 software. You must then download the CHM file from www.simrad.com and replace it with the "old" file presently used on the PI50 computer.

Tip

Please note that Microsoft has decided that CHM files neither can be opened from a web page, nor from a server on your network. You must download the CHM file to your harddisk before you can open it.

Important

This procedure assumes that you are familiar with the Microsoft® XP® and/or Microsoft® 7 operating system utilities for file handling.

## Related topics

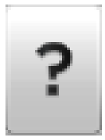
- *Context sensitive on-line help* on page 37
- *Opening the context sensitive on-line help* on page 51

## Procedure

1 Start the PI50.

2 Check the version of your existing on-line help file.

   **a** Click the **Help** button on the **Title bar** to open the on-line help.

   **b** If necessary, click the [+] symbol in the menu on the left hand side of the help page to open the table of contents.

   **c** Click **Document information**.

   **d** Observe the version of your existing on-line help file.

3 Stop the PI50.

4 Start a file manager program on the computer.

5 To download the updated on-line help file, go to:

   www.simrad.com/pi50

6 Change the file name to `PI50.chm`.

   The same file name is used for all languages.

7 Copy the CHM file to a USB memory device, and insert the USB device into a vacant slot on the computer.

8 Access the program folders on the computer's hard disk.

9 Navigate to the following folder:

   Windows 7: `c:\program files\Simrad\NGE\PI50\Language`

10 Observe that the folder may hold one or more sub-folders. Each of these sub-folders hold the CHM on-line help file in different languages. Examples are:

   - **es** = Spanish
   - **en** = English

11 Open the language folder you wish to update.

12 Rename the existing (old) CHM file in the language folder to `old_PI50.chm`.

13 Using the functionality provided by the operating system to copy the downloaded file `PI50.chm` from the USB memory stick to the correct language folder.

14 Close all folders.

15 Close the file manager program.

16 Restart the PI50.

# Software installation procedures

These sections explain how to install and maintain the main operational software on the Simrad PI50.

### Topics



## Installation of the PI50 software

### Purpose

Use this procedure when you wish to install the PI50 software on a computer.

Note

*Note that minimum hardware and software requirements must be met by the computer.*

---

### Related topics

### Procedure

1. Power up the computer.
2. Insert the PI50 software media.

   If the PI50 software is provided on a CD or DVD, and your computer is not fitted with a suitable drive, copy the files from the CD/DVD to a USB flash drive.
3. Use a file manager application on the computer to access the software.
4. Double-click on the **Setup.exe** file to start the installation.
5. Allow the installation program to run. Follow the instructions provided.
6. Once the installation has been completed, double-click the program icon on the desktop to start the program.
7. If you use **Windows 7** operating system:
   a. Observe that **Windows 7 Firewall** will open a dialog box requesting information about the network.

      Select *Public*, and click **Allow access**.
   b. The operating system may also open other dialog boxes to verify that the PI50 software can run on the computer. You must permit this.
8. Observe the relevant start-up procedure.

## Obtaining the PI50 software license

### Purpose

The PI50 requires a valid license to operate. This procedure explains how to obtain a license, and how to install it on your PI50 computer.

Without a license you will not be able to communicate with the Sensor Receiver.

**Note**

*If you replace your computer, or if you replace major components inside your computer, you will need a new license code.*

*We strongly advice you to record the license code for safe keeping. You may for example write it down in the beginning of this manual.*

### Related topics

- *Software License dialog box* on page 226

### Procedure

**1** Double-click the PI50 icon on the desktop to start the application.

**2** Observe the **Main** menu. It is normally located on the right hand side of the PI50 presentation.

**3** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**4** Click **Installation** to open the **Installation** submenu.


On the submenu, click **Software License** to open the **Software License** dialog box.


The purpose of the **Software License** dialog box is to allow you to enter a license code (text string) to unlock the PI50 functionality. In order to obtain the license code(s) required, contact your dealer.

**5** Write down the **Hardware ID** provided by the **Software License** dialog box.

**6** Contact your dealer to order the software license.

Your dealer will need the following information from you to place the order:

- Vessel name and call sign
- Vessel type (trawler, purse seiner, etc.)
- Vessel owner's name, address and contact information
- Serial number on the Sensor Receiver
- Hardware ID (as provided in the **Software License** dialog box)

**7** When the software license is returned to you, start the PI50, open the **Software License** dialog box, and click **Enter Licence String**.

**8** Write down the code, and click **Ok**.

**9** Click **OK** to save the current settings and close the dialog box.

## Upgrading the PI50 software

### Purpose

Use this procedure when you wish to upgrade the PI50 software on a computer.

#### Related topics

- *Installation of the PI50 software* on page 99

#### Procedure

**1** Observe the procedure for software installation: *Installation of the PI50 software* on page 99

Unless you have made any hardware changes on your computer, the existing software license will be used.

### Removing the PI50 software from the Processor Unit computer

#### Purpose

You may wish to remove the PI50 software from your computer.

#### Procedure

**1** Observe the operating system's functionality for software removal.

## Transducer handling and maintenance

You MUST observe the following rules for handling, cleaning, maintenance and painting transducers and hydrophones.

#### Topics

- *Rules for transducer handling* on page 101
- *Rules for transducer maintenance* on page 102
- *Approved anti-fouling paints for transducers* on page 103

### Rules for transducer handling

Note

*All transducers must be handled as delicate items. Any wrongful handling may damage the transducer beyond repair.*

***Do not*** *activate the transducer when it is out of the water.*

***Do not*** *handle the transducer roughly, avoid impacts.*

***Do not*** *expose the transducer to direct sunlight or excessive heat.*

***Do not*** *use high pressure water, sand blasting or metal tools to clean the transducer face.*

***Do not*** *use strong solvents to clean the transducer face.*

---

#### *Transport protection*

Some transducers are delivered with a cover plate on the face for protection during transport. Let this plate stay on as long as possible, but do not forget to remove it before the vessel goes into the sea.

### Cleaning the transducer face

Whenever opportunity arise, for example when the vessel is dry docked, the transducer face may be cleaned for shells and other marine fouling.

Be careful not to make cuts in the transducer face.

Use a piece of soft wood or a very fine grade emery paper.

***WARNING***

***Do not use high pressure water or sand blasting.***

---

### Special rules for acoustic windows

Arctic tanks have acoustic windows made of polycarbonate.

These must neither be painted nor cleaned with chemicals.

Acoustic windows must not be exposed to direct sunlight.

### Painting the transducer face

An anti-fouling paint may be applied to the transducer face. Because some paint types may be aggressive to the polyurethane in the transducer face, consult Simrad's list of approved paints.

**Related topics**

- *Approved anti-fouling paints for transducers* on page 103

## Rules for transducer maintenance

Once installed, the transducer is maintenance free. However, when the vessel is docked, it is highly recommended to clean the transducer face to remove marine growth.

**1** Perform a thorough visual check of the transducer.

**2** If necessary, clean the transducer

- **a** To clean the transducer, use normal synthetic soap and water.
- **b** To remove marine growth, use fine-grade sandpaper or emery paper.

Important

Observe the rules for transducer handling!

---

**3** If necessary, apply a new layer of anti-fouling paint to the transducer face.

Because some paint types may be aggressive to the polyurethane in the transducer face, please consult Simrad's list of approved paints.

**Related topics**

- *Rules for transducer handling* on page 101
- *Approved anti-fouling paints for transducers* on page 103

## Approved anti-fouling paints for transducers

This is Simrad's list of approved antifouling paints on polyurethane transducer housing.

Please note that the products offered from these manufacturers are changed. Old products are removed, and new are offered. Consult the manufacturer's websites for up-to-date information. In case of doubt, contact Simrad for advice.

Refer to the manufacturer's documentation and data sheets for a complete product information and applicable procedures.

### Jotun

**Head office address**: P.O.Box 2021, N-3248 Sandefjord, Norway

**Website**: www.jotun.com.

1. Racing
2. Non-stop
3. Safeguard Universal primer (125 micron) with Antifouling SeaQuantum Ultra (125 micron)
4. Antifouling Seaguardian

### International Marine Coatings

**Address**: World-wide offices

**Website**: www.international-marine.com.

1. Intersleek tie coat + 425 FCS
   - BXA386/BXA390/BXA391 Grey
   - HKA563/HKA570/HKA571 Yellow
   - Mix BXA386, BXA390 and BXA391 first, then apply. When dry, mix HKA563, HKA570 and HKA571, apply.
2. Intersmooth 360 Ecoloflex SPC
3. Micron Extra

### Hempel IFA Coatings

**Head office address**: Hempel A/S, Lundtoftevej 150, Kgs. Lyngby, DK-2800 Copenhagen, Denmark

**Website**: www.hempel.com.

1. Hempel A/F Classic 76550

# External interface procedures

This section describes how to set up the various interfaces provided by the PI50. The interfaces are set up to transmit and/or receive information by means of Ethernet and/or serial lines.

### Topics



## Setting up catch sensor data output

### Purpose

The PI50 will provide catch sensor information on an output line.

The following telegram formats are supported:

→ *PSIMP-D1 PI Sensor data* on page 302

### Related topics


- *Setup menu* on page 167
- *I/O Setup dialog box* on page 222
- *Select Outputs dialog box* on page 237
- *Serial Port Setup dialog box* on page 232
- *Port Monitor dialog box* on page 233
- *Standard NMEA 0183 communication parameters* on page 295
- *PSIMP-D1 PI Sensor data* on page 302


### Physical cabling

The first step (with sub-steps) in this procedure explains how to do the physical cabling using the relevant connection. The remaining steps describe how to set up the interface parameters in the PI50 software.

### Procedure

**1** Connect the PI50 to the peripheral system using a serial line.

  **a** Locate a free serial port that can be used for this communication.

**b** On the serial line socket on the PI50 computer, connect an RS-232 cable as follows:

- Receive signal **Rx** on pin 2.
- Transmit signal **Tx** on pin 3.
- Common **Ground** on pin 5.

Tip

If the computer is not fitted with a suitable serial line connector, use a USB to serial converter. Several types are commercially available.

**c** On the external system, wire as described in the relevant documentation.

**d** Ensure that the total length of the serial line cable does not exceed approximately 50 meters.

If a longer cable is required, you may need to use buffer amplifiers on the serial line.

**2** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**3** Click the **Installation** button to open the **Installation** submenu.


**4** In the **I/O Setup** dialog box, select which serial line to use to export the catch sensor information.

**5** Click on the chosen port to select it, then click the **Output** button to open the **Select Outputs** dialog box.

**6** In the **Select Outputs** dialog, locate the **PI_NMEA** option on the left side, and click the [▶] button to connect it.

**7** Click once on the **PI_NMEA** option on the left side, then click **Configure Output**.


**8** Observe that the **PI Data Output** dialog opens.

**9** In the **PI Data Output** dialog box, click to enable the data telegrams to be exported.

**10** Click **OK** to save the current settings and close the dialog box.

**11** Observe that you are back in the **Select Outputs** dialog.

**12** Click **OK** to save the current settings and close the dialog box.

**13** In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Setup** button to open the **Serial Port Setup** dialog box.

**14** In the **Serial Port Setup** dialog box, enter the relevant parameters to set up the port.

**15** Click **OK** to save the current settings and close the dialog box.

**16** In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Monitor** button to open the **Port Monitor** dialog box.

**17** Observe the data flow on the output communication line.

In order to monitor the data flow, the PI50 must be active and transmitting information out on the serial line.

**18** If the data flow is operational, close all dialog boxes.

## Setting up the input from the Simrad ITI

### Purpose

This procedure explains how the PI50 can be set up to receive ITI and FS information on a serial port.

### Description

Communication with the Simrad ITI (Integrated Trawl Instrumentation) and Simrad FS70 is based on NMEA and proprietary telegrams.

The following telegram formats are supported:

→ *DBS Depth below surface* on page 296

→ *DBS Depth of trawl below surface* on page 302

→ *HFB Trawl headrope to footrope and bottom* on page 302

### Related topics


- *Setup menu* on page 167
- *I/O Setup dialog box* on page 222
- *Select Inputs dialog box* on page 235
- *Serial Port Setup dialog box* on page 232
- *Port Monitor dialog box* on page 233
- *Standard NMEA 0183 communication parameters* on page 295


### Physical cabling

The first step (with sub-steps) in this procedure explains how to do the physical cabling using the relevant connection. The remaining steps describe how to set up the interface parameters in the PI50 software.

### Procedure

**1** Connect the PI50 to the ITI using a serial line.

**a** Locate a free serial port that can be used for this communication.

**b** On the serial line socket on the PI50 computer, connect an RS-232 cable as follows:

- Receive signal **Rx** on pin 2.
- Transmit signal **Tx** on pin 3.
- Common **Ground** on pin 5.

Tip

If the computer is not fitted with a suitable serial line connector, use a USB to serial converter. Several types are commercially available.

---

**c** On the ITI transceiver, use connector **Serial A**. Connect the cable as follows:

- Receive signal **Rx** on pin 2.
- Transmit signal **Tx** on pin 3.
- Common **Ground** on pin 5.

**d** Ensure that the total length of the serial line cable does not exceed approximately 50 meters.

If a longer cable is required, you may need to use buffer amplifiers on the serial line.

**2** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**3** Click the **Installation** button to open the **Installation** sub-menu.


On the menu provided, click **I/O Setup** to open the **I/O Setup** dialog box.


**4** In the **I/O Setup** dialog box, select which serial line to use to accept ITI information.

**5** Click on the chosen port to select it, then click the **Input** button to open the **Select Inputs** dialog box.

**6** In the **Select Inputs** dialog box, click **ITI-FS** on the left side, and click the [▶] button to connect it.

**7** Click **OK** to save the current settings and close the dialog box.

**8** In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Setup** button to open the **Serial Port Setup** dialog box.

**9** In the **Serial Port Setup** dialog box, enter the relevant parameters to set up the port.

**10** Click **OK** to save the current settings and close the dialog box.

**11** In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Monitor** button to open the **Port Monitor** dialog box.

**12** Check the data flow on the input communication line.

In order to monitor this data flow, the peripheral system must be active and transmitting information to the PI50.

**13** If the data flow is operational, close all dialog boxes.

## Setting up the input from a Simrad echo sounder

### Purpose

This procedure explains how the PI50 can be set up to receive depth information on a serial port.

Communication with the Simrad echo sounder systems is based on NMEA and proprietary telegrams. Depth information is also accepted from other echo sounders, provided that one of the listed datagram formats are used.

The following telegram formats are supported:

→ *DBS Depth below surface* on page 296

### Related topics


- *Setup menu* on page 167
- *I/O Setup dialog box* on page 222
- *Select Inputs dialog box* on page 235
- *Serial Port Setup dialog box* on page 232
- *Port Monitor dialog box* on page 233
- *Standard NMEA 0183 communication parameters* on page 295
- *PSIMP-D1 PI Sensor data* on page 302


### Physical cabling

The first step (with sub-steps) in this procedure explains how to do the physical cabling using the relevant connection. The remaining steps describe how to set up the interface parameters in the PI50 software.

### Procedure

**1** Connect the PI50 to the echo sounder using a serial line.

**a** Locate a free serial port that can be used for this communication.

**b** On the serial line socket on the PI50 computer, connect an RS-232 cable as follows:

- Receive signal **Rx** on pin 2.
- Transmit signal **Tx** on pin 3.
- Common **Ground** on pin 5.

Tip

If the computer is not fitted with a suitable serial line connector, use a USB to serial converter. Several types are commercially available.

**c** On the echo sounder computer, use a similar serial line output. Connect the RS-232 cable as follows:

- Receive signal **Rx** on pin 2.
- Transmit signal **Tx** on pin 3.
- Common **Ground** on pin 5.

Note

*Remember that the transmit signal on the echo sounder computer is the receive signal on the PI50 computer.*

**d** Ensure that the total length of the serial line cable does not exceed approximately 50 meters.

If a longer cable is required, you may need to use buffer amplifiers on the serial line.

**2** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**3** Click the **Installation** button to open the **Installation** sub-menu.


On the menu provided, click **I/O Setup** to open the **I/O Setup** dialog box.


**4** In the **I/O Setup** dialog box, select which serial line to use to accept the depth information.

**5** Click on the chosen port to select it, then click the **Input** button to open the **Select Inputs** dialog box.

**6** In the **Select Inputs** dialog box, locate **EchoNMEA** on the left side, and click the [►] button to connect it.

**7** Click **OK** to save the current settings and close the dialog box.

**8** In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Setup** button to open the **Serial Port Setup** dialog box.

**9** In the **Serial Port Setup** dialog box, enter the relevant parameters to set up the port.

**10** Click **OK** to save the current settings and close the dialog box.

**11** In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Monitor** button to open the **Port Monitor** dialog box.

**12** Check the data flow on the input communication line.

In order to monitor this data flow, the peripheral system must be active and transmitting information to the PI50.

**13** If the data flow is operational, close all dialog boxes.

## Setting up the input from a navigation system

### Purpose

This procedure explains how to connect a GPS system to the PI50 using serial line or Ethernet communication.

Most Global Positioning System (GPS) receivers provide NMEA 0183 telegrams containing speed, heading and sailed distance as well as geographical latitude and longitude.

Supported telegram formats for heading:

→ *HDG Heading, deviation and variation* on page 298

→ *HDT Heading, true* on page 299

→ *HDM Heading, magnetic* on page 298

→ *VHW Water speed and heading* on page 300

Supported telegram formats for distance:

→ *RMC Recommended minimum specific GNSS data* on page 299

→ *VHW Water speed and heading* on page 300

→ *VLW Dual ground/water distance* on page 300

→ *VTG Course over ground & ground speed* on page 301

Supported telegram formats for positioning:

→ *GLL Geographical position latitude/longitude* on page 296

→ *GGA Global positioning system fix data* on page 297

→ *RMC Recommended minimum specific GNSS data* on page 299

Supported telegram formats for speed:

→ *RMC Recommended minimum specific GNSS data* on page 299

→ *VHW Water speed and heading* on page 300

→ *VTG Course over ground & ground speed* on page 301

### Related topics

- *Setup menu* on page 167
- *Navigation dialog box* on page 211

### Physical cabling

The first step (with sub-steps) in this procedure explains how to do the physical cabling using the relevant connection. The remaining steps describe how to set up the interface parameters in the PI50 software.

### Procedure

**1** Connect the PI50 to the GPS system using a serial line or an Ethernet line.

#### Serial line

**a** Locate a free serial port that can be used for this communication.

**b** On the serial line socket on the PI50 computer, connect an RS-232 cable as follows:

- Receive signal **Rx** on pin 2.
- Transmit signal **Tx** on pin 3.
- Common **Ground** on pin 5.

Tip

If the computer is not fitted with a suitable serial line connector, use a USB to serial converter. Several types are commercially available.

**c** On the serial line socket on the PI50 computer, connect an RS-422 cable as follows:

- Receive signal **RXD+** on pin 1.
- Receive signal **RXD-** on pin 4.
- Transmit signal **TXD+** on pin 2.
- Transmit signal **TXD-** on pin 3.
- Common **Ground** on pin 5.

Tip

If the computer is not fitted with a suitable serial line connector, use a USB to serial converter. Several types are commercially available.

**d** On the GPS system, wire as described in the relevant documentation.

**e** Ensure that the total length of the serial line cable does not exceed approximately 50 meters.

If a longer cable is required, you may need to use buffer amplifiers on the serial line.

### Ethernet line

**a** Locate the Ethernet port you wish to use.

If no Ethernet port is available, an Ethernet switch may be inserted between the computer and the transceiver.

**b** Connect an Ethernet cable from the PI50 computer to the peripheral system.

We strongly recommend that you use high quality Ethernet cables, minimum CAT-5.

**2** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**3** Click **Navigation** to open the **Navigation** dialog box.


The **Navigation** dialog box controls how the PI50 receives information from external peripherals, such as navigation and gyro compass systems.

**4** For each tab:

**a** Select which port to use.

**b** Click **Setup** for the selected port to define the communication parameters.

**c** Select which **NMEA Sentence** to use.

If you choose *Auto*, the PI50 will automatically choose among the incoming information according to a predefined priority list.

**d** If applicable, define the **Talker ID**.

**5** Click **OK** to save the current settings and close the dialog box.

## Setting up the interface between the Processor Unit computer and the Sensor Receiver

### Purpose

This procedure explains how to set up the communication between the Simrad PI50 computer and the Sensor Receiver. This is normally done only one time.

### Description

Communication with the Sensor Receiver is based on a serial line and proprietary telegrams. You can only set up this communication with a licensed version of the PI50 software.

Important

If you purchase the PI50 Maritime computer, serial port A (1) is set up and activated for this interface. If you use your own computer, make sure that it is equipped with an RS-232 serial port. This is the only way you can communicate with the Sensor Receiver.

---

### Related topics

- *I/O Setup dialog box* on page 222
- *Select Inputs dialog box* on page 235
- *Serial Port Setup dialog box* on page 232

### Physical cabling

The first step (with sub-steps) in this procedure explains how to do the physical cabling using the relevant connection. The remaining steps describe how to set up the interface parameters in the PI50 software.

### Procedure

**1** Connect the PI50 computer to the Sensor Receiver using a serial line.

  **a** Locate a free serial port that can be used for this communication.

  **b** On the chosen serial line socket on the PI50 computer (male connector), connect the RS-232 cable as follows:

  - Receive signal **Rx** on pin 2.
  - Transmit signal **Tx** on pin 3.
  - Common **Ground** on pin 5.

  **c** On the Sensor Receiver, use the only serial line socket available (female connector). Connect the RS-232 cable in a 1:1 configuration.

  Note

  *The connection between the computer and the Sensor Receiver uses a 1:1 serial cable. A suitable cable with length 2 m is provided with the Transceiver Unit. If you need a longer cable, you can extend this cable, or make your own.*

  **d** Ensure that the total length of the serial line cable does not exceed approximately 50 meters.

  If a longer cable is required, you may need to use buffer amplifiers on the serial line.

**2** Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

**3** Click the **Installation** button to open the **Installation** sub-menu.


On the menu provided, click **I/O Setup** to open the **I/O Setup** dialog box.


**4** In the **I/O Setup** dialog, select which serial port to use for this communication.

**5** Click on the chosen port to select it, then click the **Input** button to open the **Select Inputs** dialog box.

**6** In the **Select Inputs** dialog, locate **PI50** on the left side, and click the [▶] button to connect it.

**7** Click **OK** to save the current settings and close the dialog box.

**8** In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Setup** button to open the **Serial Port Setup** dialog box.

**9** In the **Serial Port Setup** dialog, enter the relevant parameters to set up the port.

- Baud rate: 4800
- Data bits: 8
- Parity: None

Important

If you use your own computer, you may need to verify these settings in the operating system.

In Windows XP, right-click **My Computer** on the desktop. Then, click **Properties →Hardware →Device manager →Ports**.

In Windows 7, open **Computer** from the “Start” icon. Then, click **System properties →Advanced system settings Hardware →Device manager →Ports**.

Right-click on **Ports** to view and/or define communication properties.

**10** Click **OK** to save the current settings and close the dialog box.

**11** In the **I/O Setup** dialog box, click on the chosen port to select it, then click the **Monitor** button to open the **Port Monitor** dialog box.

**12** Check the data flow on the input communication line.

In order to monitor this data flow, the peripheral system must be active and transmitting information to the PI50.

**13** If the data flow is operational, close all dialog boxes.

# Display views

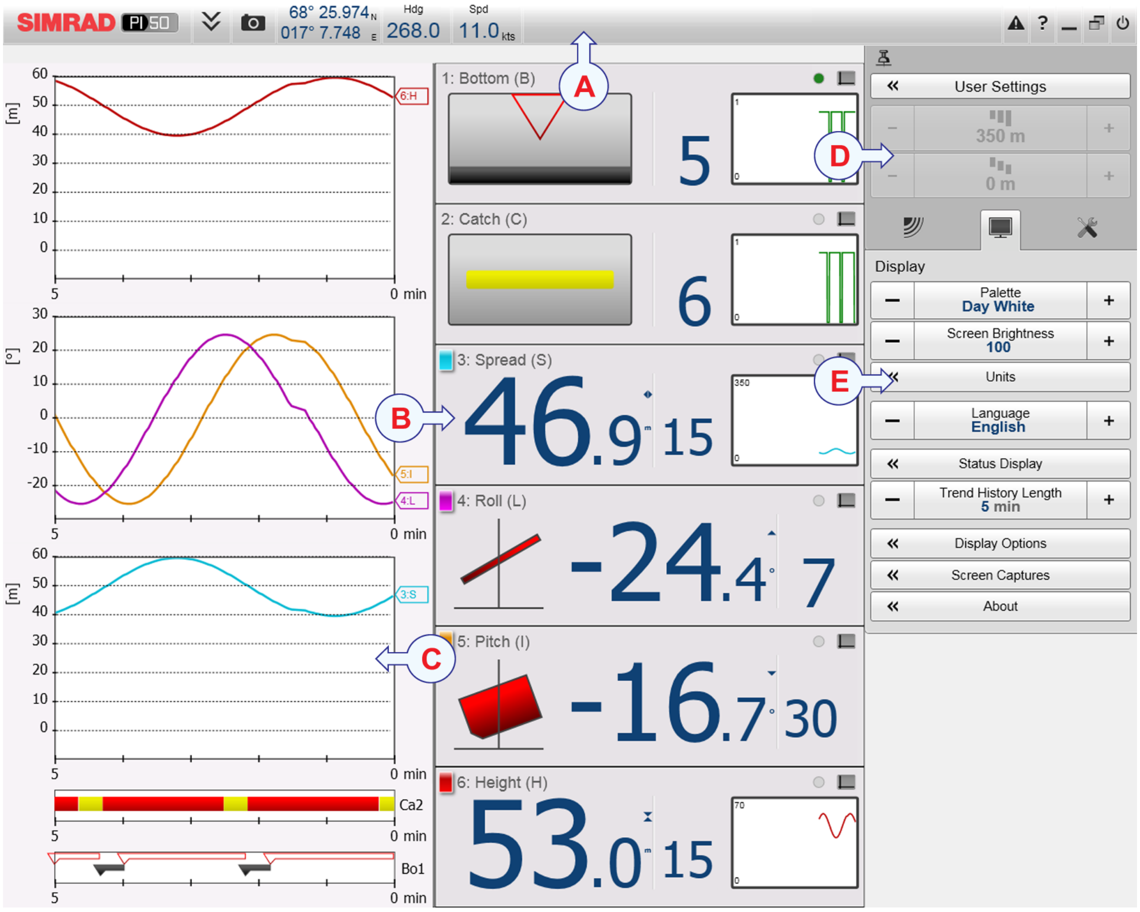
The display views provided by the Simrad PI50 are based on the award winning design of the Simrad ME70 multibeam echo sounder. The menu system, presentation of data in the operational modes, and the user interface elements, have been created in close cooperation with designers and users.

This chapter provides a brief overview of the information displayed by the Simrad PI50, and how the information is organized.

**Topics**

# Display organization

By default, the PI50 display presentation covers the entire screen view.




A typical PI50 display presentation is shown.

Note that the presentation is made using artificial sensor data from the built-in simulator.

**A Title Bar**

The **Title Bar** identifies Simrad as the manufacturer, and the name of the product (PI50). It also provides several information fields and buttons. These are used to hide or retrieve the menu system, provide navigational information, and to enable basic system functions.

**B Sensor views**

The information from each sensor is presented in a rectangle. "Dual" sensors use two channels, and they use two rectangles for presentation. The *Sensor* view holds the key information provided by sensor, as well as a *History* field. This is the small rectangle within the *Sensor* view. It offers the changes in the sensor data for the last 20 minutes.

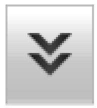
**C Trend views**

For each sensor, you can also open a *Trend* view. This is a graph providing the historic values from the sensor. Both the vertical and horizontal resolutions of the graph can be adjusted.

Click **Range** and **Range Start** on the **Main** menu to control the vertical resolution.

Click **Trend History Length** on the **Display** menu to control the horizontal resolution (5 to 1440 minutes).

**D Menu system**



The menu system is by default located on the right hand side of the presentation. To open any of the submenus, click the buttons under the **Main** menu. To hide or retrieve the entire menu system, click the **Menu** button on the **Title Bar**.

**E Submenus**

The submenus are opened and closed by clicking the buttons at the bottom of the **Main** menu.

The presentation of the various views are made automatically, and the size of each view depends on the space available. When no *Trend* views are open, the *Sensor* views will stretch from the left to the right edge of the presentation. When a *Trend* view is opened, it will position itself on the left side, and the size of the *Sensor* views will be reduced by removing the *History* field. If additional *Trend* views are opened, they will be positioned on top of each other, and the vertical size of each view is adjusted automatically.

The order of the *Sensor* views is defined by the setting made in the **Select Sensors** dialog box. The location of the *Trend* views do not follow his order. The first trend view fills the entire vertical space, the next are placed on top of the first in the same order they are opened.

### Related topics


- *Title Bar* on page 117
- *Menu system* on page 123


# Title Bar

The PI50 **Title Bar** is located on the top of the display presentation, and it is stretched from the far left to the far right side.

### Topics


- *Purpose and description* on page 118
- *Logo and product name* on page 119
- *Operational buttons* on page 119
- *Navigation Field* on page 119
- *Function buttons* on page 121

## Purpose and description

The PI50 **Title Bar** is located on the top of the display presentation, and it is stretched from the far left to the far right side.

The purpose of the **Title Bar** is to give you fast access to key functionality and navigational information.

It provides buttons to hide or show the menu, to make a screen capture, to open the **Messages** dialog box, and to open the context sensitive on-line help. It also provides a few buttons related to operating system features.


**A** **Logo and product name**.

This element identifies the Simrad as the manufacturer of the PI50, and the product name.

**B** **Menu**

Click this button to hide or recall the menu system.

**C** **Screen capture**

This button is provided to make it easy to make a screen capture.

**D** **Navigation field**

These are not buttons, but information fields providing current data related to the vessel movements.

**E** **Message**

Click this button to open the **Messages** dialog box. This button will flash to indicate that a message is posted.

**F** **Help**

Click this button to open the context sensitive on-line help.

**G** **Function** buttons

These buttons are used to control basic system functions.

- **Minimize** and **Resize**: Click these buttons to adjust the size of the PI50 presentation.
- **Exit**: Click this button to close down the PI50 application.

### Related topics


- *Logo and product name* on page 119
- *Operational buttons* on page 119
- *Navigation Field* on page 119
- *Function buttons* on page 121
- *Messages dialog box* on page 238

## Logo and product name

The **Logo and Product name** is located on the left side of the **Title Bar** at the top of the PI50 presentation.

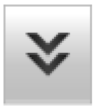
The Simrad logo and the product name (PI50) is shown.

Double-click the Simrad logo to reduce the size of the PI50 presentation. Double-click one more time to restore the original size.

## Operational buttons

A number of operational buttons are available on the **Title Bar**.

### Menu button



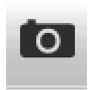
The **Menu** button is located on the left side of the **Title Bar** at the top of the PI50 presentation.

Click once on the **Menu** button to hide the menu, and one more time to bring it back again. When the menu is hidden, it will temporarily be shown on the left or right hand side of the display if you move the cursor to that position.

**Related topics**

- *The menu system* on page 160

### Screen Capture button



The **Screen Capture** button is located on the left side of the **Title Bar** at the top of the PI50 presentation.

Click this button once to create a screen capture of the current sensor presentation. To view the recorded images, click **Screen Capture** on the **Display** menu.

**Related topics**

- *Screen captures* on page 159

## Navigation Field

The navigational information is located on the **Title Bar** at the top of the PI50 display presentation.

These are not buttons, but fields providing useful information related to the vessel movements. You can choose which information is to be displayed if you open the **Display Options** dialog box from the **Display** submenu.

Note

*This information on the **Title Bar** must not be used for vessel navigation!*

## Geographical location (latitude and longitude)


The **Geographical location** information is provided in the **Navigation Field** on the **Title Bar** at the top of the PI50 display presentation.

Provided that a GPS system is connected to the PI50, this field on the **Title Bar** will display the vessel's geographical position in longitude and latitude.

The communication with the external GPS system is set up using the **Navigation** button on the **Setup** menu.

### Related topics

- *Navigation dialog box* on page 211

## Heading


The **Heading** information is provided in the **Navigation Field** on the **Title Bar** at the top of the PI50 display presentation.

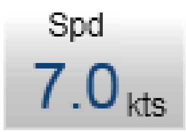
Provided that the relevant sensor is connected to the PI50, this field on the **Title Bar** will display the vessel's current heading.

The communication with the external GPS system is set up using the **Navigation** button on the **Setup** menu.

### Related topics

- *Navigation dialog box* on page 211

## Speed




The **Speed** information is provided in the **Navigation Field** on the **Title Bar** at the top of the PI50 display presentation.

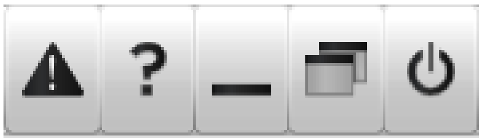
Provided that a GPS or speed log system is connected to the PI50, this field on the **Title Bar** will display the vessel's current speed.

The communication with the external GPS system or speed sensor is set up using the **Navigation** button on the **Setup** menu.

### Related topics

- *Navigation dialog box* on page 211

# Function buttons

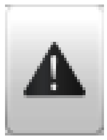


The **Function** buttons are located on the right side of the **Title Bar** at the top of the PI50 presentation.

### Topics

- *Message button* on page 121
- *Help button* on page 121
- *Minimize button* on page 122
- *Resize button* on page 122
- *Exit button* on page 122

## Message button



The **Message** button is located at the right side of the **Title Bar** at the top of the PI50 presentation.

Click the button to open the **Messages** dialog box.

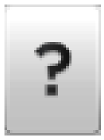
By flashing, this **Message** button indicates that the PI50 system has issued a message.

If you hold the mouse cursor over the button, a tooltip rectangle will provide a list of the messages that you have not acknowledged.

### Related topics

- *Messages dialog box* on page 238

## Help button



The **Help** button is located at the right side of the **Title Bar** at the top of the PI50 presentation.

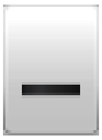
Click this button to open the PI50 context sensitive on-line help. The button opens the help system's start page.

Context sensitive on-line help is also available from the various dialog boxes in the PI50. Click any **Help** button [**?**] in the top right corner of any dialog box to open the help system.

### Related topics

- *Context sensitive on-line help* on page 37

### Minimize button

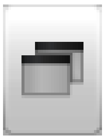


The **Minimize** button is located at the right side of the **Title Bar** at the top of the PI50 presentation.

Click this button to minimize the PI50 display presentation. This is an operating system function.

To restore the presentation to its previous size, click the PI50 button on the operating system's **Status Bar**.

### Resize button

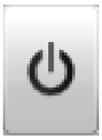


The **Resize** button is located at the right side of the **Title Bar** at the top of the PI50 presentation.

Click this button to change the size of the PI50 display presentation. This is an operating system function.

To restore the presentation to its previous size, click the **Resize** button again.

### Exit button



The **Exit** button is located at the right side of the **Title Bar** at the top of the PI50 presentation.

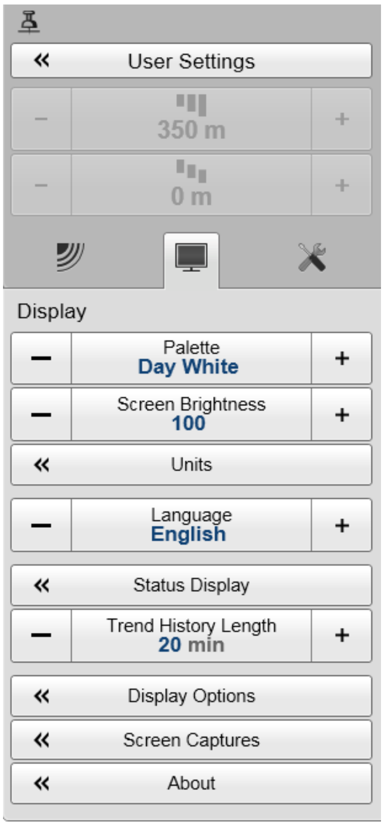
Click this button to close the PI50 program.

Observe the dedicated procedure to power down the PI50 system.

#### Related topics

- *Powering off the PI50* on page 21

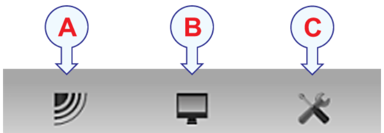
# Menu system




The menu system is by default located on the right hand side of the PI50 presentation.

The selection of operational parameters on the PI50 is done using a tree structure with a main menu, a set of submenus, and several menu buttons. Some of the menu buttons open dialog boxes or submenus to offer additional choices.

The **Main** menu provides the parameters most frequently used during normal operation.



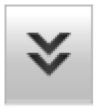

Below the main menu, dedicated buttons are used to open the submenus. These are (from left):

**A** The **Operation** menu controls the main operational parameters.

**B** The **Display** menu controls the visual aspects of the system, such as parameters related to the display presentation.

**C** The **Setup** menu allows you to control the configuration of the signal processing, as well as system installation and maintenance, and the interfaces to peripheral devices.

Tip



You can hide the menu from view if you do not need it. Click the **Menu** button on the **Title Bar** to hide the menu. Click one more time to retrieve it.

The text in the buttons can be changed to suit your preference by clicking **Language** on the **Display** menu.

You can also place the menu on the left side of the PI50 presentation by clicking **Menu on the right side** in the **Display Options** dialog box.

---

A detailed breakdown of the commands and parameters available in the menu system is provided in the *Menu system* chapter.

### Related topics

- *Selecting menu language* on page 47
- *The menu system* on page 160
- *Display Options dialog box* on page 190

# Sensor view descriptions

Each sensor providing measurement information to the PI50 system uses a dedicated rectangle – a *Sensor* view – to display this information.

The *Sensor* view rectangles are dynamic. This means that they change their size automatically. The text font and the amount of information in the rectangle will change as the rectangle is made larger or smaller. All the size adjustments are made automatically depending on how many sensors you have in use, and how much information you wish to see.

### Topics



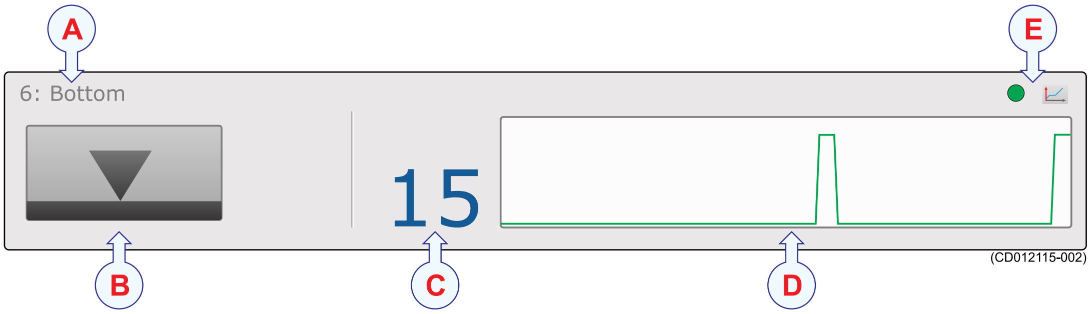
## 'Bottom contact' sensor view description

The purpose of the bottom contact measurement is to detect wether a bottom trawl is accidentally lifted up from the seabed. This will allow fish to escape under the gear.

- On a pelagic trawl, the sensor will notify you if you move the gear too close to the bottom.
- Used on a purse seine you will be notified once the seine reaches the bottom, and this allows you to fish even on a rough bottom.
- On a danish seine a bottom contact sensor will let you know when the net has a stable bottom contact, and when it is time to haul.

The following Simrad catch monitoring sensors can be used to measure bottom contact:

- PI Bottom Contact
- PS Bottom Contact




**A Sensor identifier**

The identifier is the **Label ID** you have chosen for the sensor, the sensor name is the **Sensor Value Name** you have chosen. You can control these identifiers in the **Select Sensors** dialog box.

**B Bottom contact status**

The arrow displays “bottom contact”.

This is graphically represented by making contact with the horizontal black line (seabed). When bottom contact is lost, the arrow will rise from the seabed and change appearance.

- Left icon: The sensor has lifted off the seabed.
- Right icon: The sensor is in physical contact with the seabed.

**C Timer**

This timer records how many minutes that have elapsed since the sensor was activated (lost bottom contact or touched the bottom depending on gear type). If the bottom contact is regained, the timer stops. It is then restarted once the status changes again. The timer can be manually reset by clicking the **Reset Counters** button on the **Operation** menu.

**D History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E Pulse lamp and Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

## Related topics


- *‘Bottom contact’ sensor view description* on page 124
- *‘Bottom contact’ trend view description* on page 151
- *Selecting a sensor for bottom contact measurement* on page 56
- *Bottom contact measurements and sensors* on page 242
- *Select Sensors dialog box* on page 197

## 'Catch' sensor view description

By means of a Simrad catch sensor, you can easily monitor the filling rate and the amount of catch in the trawl.

The sensor simply monitors the expansion of the meshes in the cod-end. Once the volume caught is enough to expand the meshes, they will pull the detector wires and engage the sensor. The sensitivity of the sensor can easily be adjusted by extending the detection rubber bands to span additional meshes.

To monitor the filling rate, we recommend that you use minimum two sensors. Place the first sensor at the far end of the cod-end, it will tell you that the trawl is actually fishing. Place the second sensor closer to the trawl opening. Once the trawl is filled to the chosen location, the sensor is engaged, and you know that it is time to haul.

The following Simrad catch monitoring sensors can be used to measure catch:

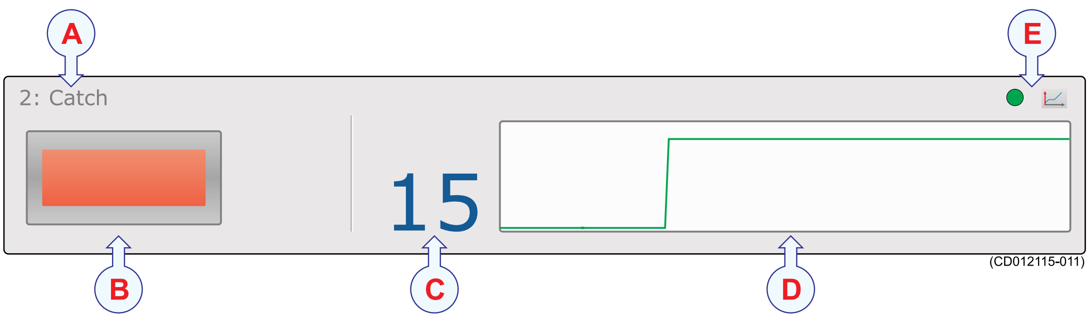
- PS Catch
- PI Catch
- PX MultiSensor

  **Important**

  The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

**Tip**

The catch sensors can also be used to detect damage. Replace the rubber bands with a longer type for this “rip” application. Then, place the sensor on the trawl belly behind the footrope, and use it to detect if the trawl is damaged by rocks or other items on the bottom. If this is detected, you can immediately adjust the gear to minimise the damage.




**A Sensor identifier**

The identifier is the **Label ID** you have chosen for the sensor, the sensor name is the **Sensor Value Name** you have chosen. You can control these identifiers in the **Select Sensors** dialog box.

**B** **Catch status icon**

An icon visualizes sensor activation.

If the icon contains a small yellow rectangle, this means that the sensor is not activated. A red rectangle in the icon means that the trawl has been filled with fish, and this has triggered the sensor.

- Left icon: The sensor is activated.
- Right icon: The sensor is not activated.

A grey rectangle inside the icon means that you have lost contact with the sensor.

**C** **Timer**

This timer records how many minutes that have elapsed since the sensor was activated. The timer can be manually reset by clicking the **Reset Counters** button on the **Operation** menu.

**D** **History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E** **Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

### Related topics


- *'Catch' sensor view description* on page 126
- *'Catch' trend view description* on page 152
- *Selecting a sensor for catch measurement* on page 57
- *Catch measurements and sensors* on page 244
- *Select Sensors dialog box* on page 197


## 'Depth' sensor view description

The Simrad depth sensors provide information about the current depth and the depth changes of your gear.

- On a bottom trawl, you will use the sensor to achieve full control when shooting, and to position the trawl on the slope.
- During pelagic trawling, you know how important it is to position the trawl relative to the largest concentration of fish. By using a depth sensor, you can monitor the exact depth relative to the surface, and adjust the trawl depth accordingly. Additional depth sensors on the doors will monitor if the doors stay at the same depth.
- During seining, use the depth sensor to monitor the depth of the net, and the descending speed of the net. Then you will know when to start pursing, and which speed to use.

- Mounted on a danish seine the depth sensor monitors the sinking speed of the net, and it will tell you when to start hauling once the net has stopped sinking.

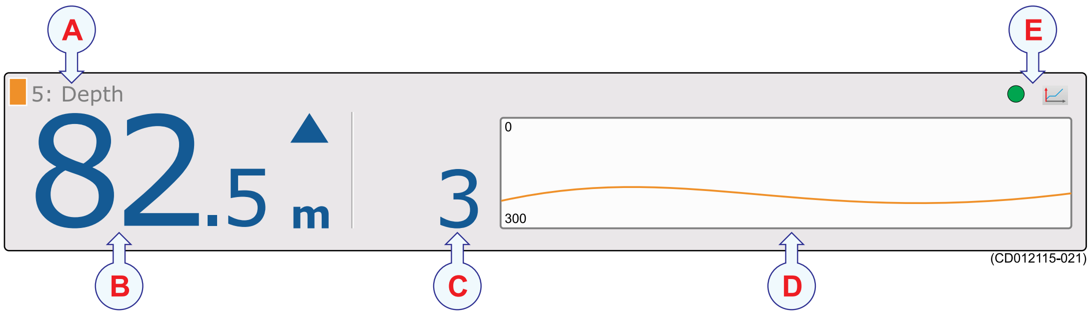
With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.

The following Simrad catch monitoring sensors can be used to measure depth:

- PS Depth
- PI Depth
- PI Spread/Depth
- PI Height/Depth
- PI Remote/Depth
- PI SeineSounder
- PX MultiSensor

Important

The PX MultiSensor must be equipped with a dedicated lid to make this measurement.



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**A Sensor identifier**

The identifier is the **Label ID** you have chosen for the sensor, the sensor name is the **Sensor Value Name** you have chosen. You can control these identifiers in the **Select Sensors** dialog box.

**B Current depth**

This the current depth measured by the sensor. The current measurement unit is shown, as well as a blue arrowhead. The arrowhead indicates the current vertical movement of the sensor; up or down. In this example the sensor measures 82,5 meters from the sea surface and down to the sensor, and the sensor – and thus the gear – is slowly rising with 3 meters each minute.

**C Depth changes**

This digit shows depth changes recorded by the sensor, and thus the ascending or descending speed of the net. The value is shown in units per minute. The direction is shown with the blue arrowhead. If the sensor does not detect any depth changes, the arrowhead is removed.

**D History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E Pulse lamp and Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

### Related topics


- *'Depth' sensor view description* on page 127
- *'Depth' trend view description* on page 152
- *Selecting a sensor for depth measurement* on page 59
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Calibration of the depth sensors* on page 95
- *Depth measurements and sensors* on page 246
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197


## 'Vertical geometry' sensor view description

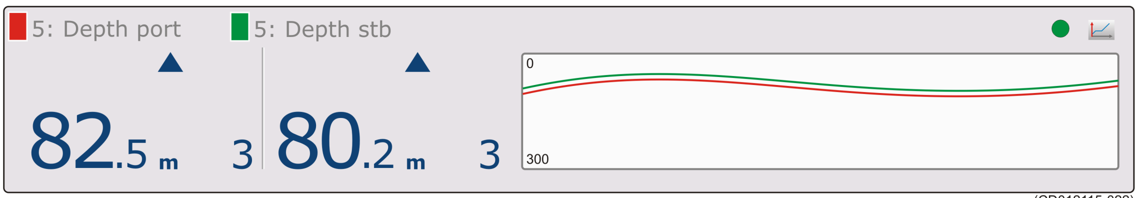
The Vertical geometry sensor view is created if you have mounted one depth sensor on each trawl door. The PI50 will then calculate the difference between the two depth readings. Any type of depth sensor will do.

**Important**

This is not a dedicated sensor, but a sensor view generated by the PI50 based on information from other sensors.

---

Two sensor view rectangles are used, one to present the information from the two depth sensors, and one to provide the geometry information. To set up the two depth sensors, use the **Advanced Sensor Configuration** functionality in the **Select Sensors** dialog box.

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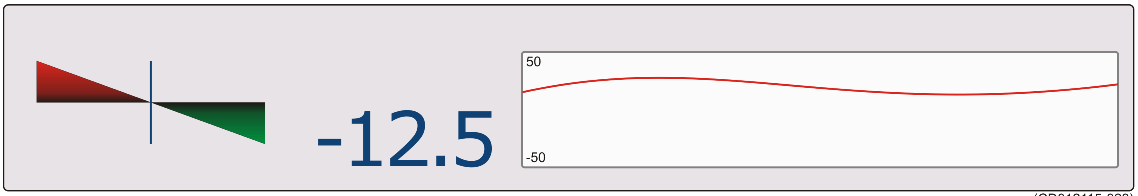

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### Related topics

- *'Vertical geometry' sensor view description* on page 129
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197

## 'Height' sensor view description

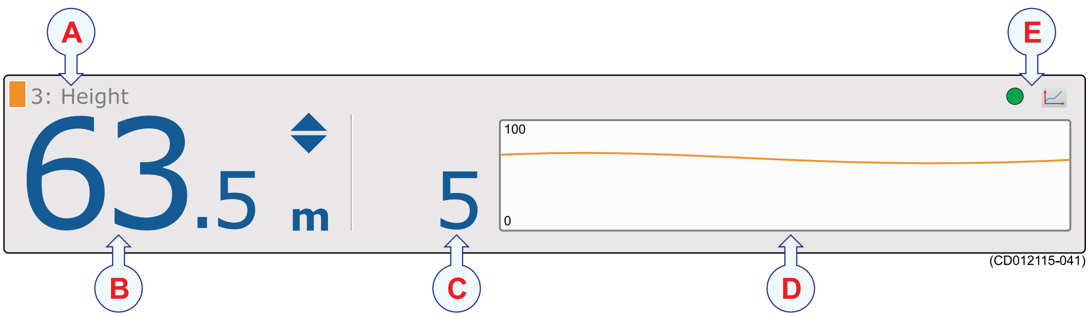
The Simrad height sensors measure the height over the bottom, that is the distance from the bottom and up to wherever the sensor is located. This provides you with a valuable range of applications for bottom and pelagic trawling.

- On a bottom trawl, place the sensor behind the headrope. From this position it will tell you the height of the trawl opening. This allows you to adjust you equipment immediately if the opening is reduced, and you will avoid losing catch.
- On a pelagic trawl, place the sensor behind the footrope. You will then know at once if the trawl approaches the bottom. If you use a second sensor behind the headrope, the difference between the two measurements will give you the height of the trawl opening.

The sensor contains a small echo sounder to measure the height above the bottom.

The following Simrad catch monitoring sensors can be used to measure height:

- PI Height
- PI Height/Depth
- PI SeineSounder
- PX MultiSensor



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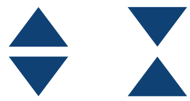
**A Sensor identifier**

The identifier is the **Label ID** you have chosen for the sensor, the sensor name is the **Sensor Value Name** you have chosen. You can control these identifiers in the **Select Sensors** dialog box.

**B Current height**

This is the height from the strongest echo (seabed or footrope) under the sensor, and up to the position on the gear in which the sensor is mounted. The current measurement unit is shown, as well as two blue arrowheads.



The two arrowheads indicate the current vertical movement of the sensor; up or down. In this example the sensor is slowly increasing with 5 meters each minute. If the two arrowheads are pointing towards each other, the height is decreasing. If they are pointing away from each other, the height is increasing.

**C Height changes**

This digit shows height changes recorded by the sensor. The value is shown in units per minute. The direction is shown with the two blue arrowheads. If the sensor does not detect any height changes, the triangles are removed.

**D History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E Pulse lamp and Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

### Related topics


- *'Height' sensor view description* on page 130
- *'Height' trend view description* on page 153
- *Selecting a sensor for height measurement* on page 62
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Setting up the height sensor to show the trawl opening* on page 87
- *Height measurements and sensors* on page 249
- *Select Sensors dialog box* on page 197


- *Select Sensors dialog box* on page 197


## 'Spread' sensor view description

The purpose of the Simrad measurement is to establish the distance between the two trawl doors.

- Use a spread sensor on the port door and a remote sensor on the starboard door.
- The two sensors communicate using a special transverse acoustic link.

- Using this link the spread sensor measures the exact distance between the two doors.

The spread sensor systems have been developed to be used on both bottom and pelagic trawls.

Important

The spread sensor mounted on the port trawl door will always require a remote sensor on the starboard door to do this measurement.

Tip

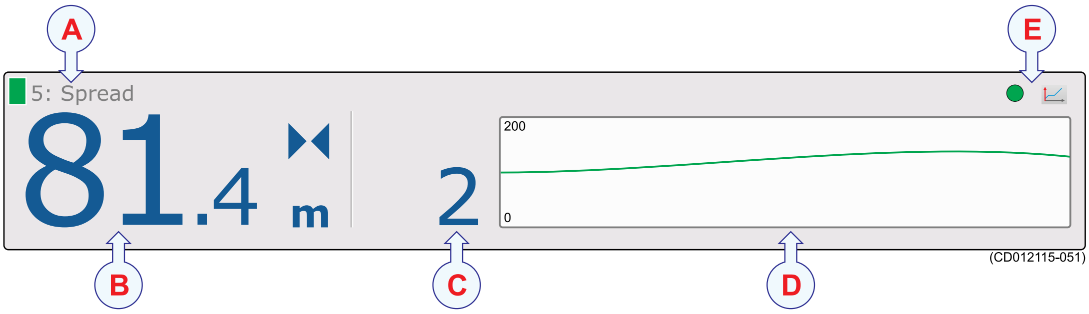
With both the PI Spread sensors and the Simrad PX MultiSensor, two versions are available. They can be set up for standard or extended (XT) spread range. This configuration can be changed in the relevant sensor configuration program.

The following Simrad catch monitoring sensors can be used to measure single and dual spread:

- PI Spread (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PI Spread/Depth (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PX MultiSensor

  Tip

  When the PX MultiSensor is used to measure spread, the remote sensor must be a second PX MultiSensor. The PI Remote sensor can not be used.



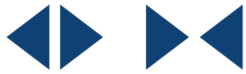

**A Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B Current spread**

This the current distance between the trawl doors as measured by the sensor system. The current measurement unit is shown, as well as two blue arrowheads.



The arrowheads indicate the current changes in the spread distance; increasing or decreasing. In this example the spread distance is slowly decreasing with 2 meters per minute. If the two arrowheads are pointing towards each other, the spread distance is decreasing. If they are pointing away from each other, the spread distance is increasing.

**C** **Spread changes**

This digit shows the spread distance changes recorded by the sensor, and thus the increasing or decreasing distance between the two trawl doors. The value is shown in units per minute. The direction is shown with the blue triangles. If the sensor does not detect any spread changes, the arrows are removed.

**D** **History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E** **Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

### Related topics


- *'Spread' sensor view description* on page 131
- *'Spread' trend view description* on page 154
- *Selecting a sensor for spread measurement* on page 64
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Spread measurements and sensors* on page 251
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197


## 'Twin Spread' sensor view description

The purpose of the Simrad twin spread measurement is to establish the distances between the two trawl openings on a dual bottom or pelagic trawl. One spread sensor is mounted on the port door, while two remote sensors are placed on the centre weight and the starboard door.

The three sensors communicate using special transverse acoustic links. Using these links the twin spread sensor system measures the exact distance between the three sensors.

Note

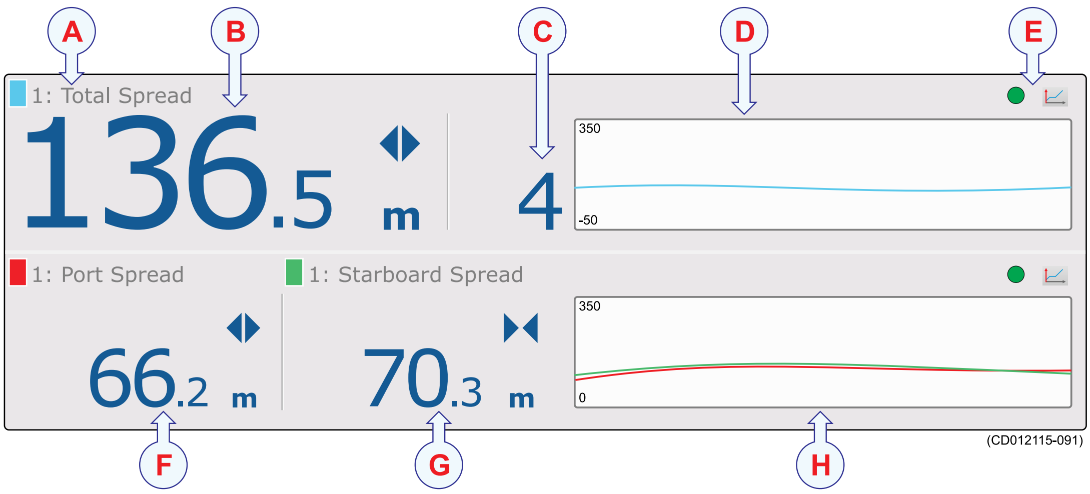
*This is a "dual" measurement. The sensor system will seize two communication channels on your PI50.*

The following Simrad catch monitoring sensors can be used to measure single and dual spread:

- PI Spread (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PI Spread/Depth (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PX MultiSensor

Tip

When the PX MultiSensor is used to measure spread, the remote sensor must be a second PX MultiSensor. The PI Remote sensor can not be used.



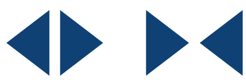

**A Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B Total spread**

This the current distance between the two outer trawl doors as measured by the sensor. The current measurement unit is shown, as well as two blue arrowheads. The total spread is the sum of the port and starboard spread distances shown below.



The arrowheads indicate the current changes in the spread distance; increasing or decreasing. In this example the spread distance is slowly decreasing with 2 meters each minute. If the two arrowheads are pointing towards each other, the total spread distance is decreasing. If they are pointing away from each other, the total spread distance is increasing.

**C Spread changes**

This digit shows the total spread distance changes recorded by the sensor, and thus the increasing or decreasing distance between the two outer trawl doors. The value is shown in units per minute. The direction is shown with the blue arrowheads. If the sensor does not detect any spread changes, the arrowheads are removed.

**D History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

**F Port spread**

This the current distance between the port trawl door and the centre weight as measured by the sensor. The current measurement unit is shown, as well as two blue triangles to indicate if the spread distance is increasing or decreasing.

**G Starboard spread**

This the current distance between the centre weight and the starboard trawl door as measured by the sensor. The current measurement unit is shown, as well as two blue triangles to indicate if the spread distance is increasing or decreasing.

**H History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

### Related topics


- *'Twin Spread' sensor view description* on page 133
- *'Twin spread' trend view description* on page 155
- *Selecting a sensor for twin spread measurement* on page 66
- *Twin spread measurements and sensors* on page 254
- *Select Sensors dialog box* on page 197

- *Select Sensors dialog box* on page 197

## 'Spread/Depth' sensor view description

The purpose of the spread/depth dual measurement is to check both the water depth and the distance between the two trawl doors using a single sensor.

Tip

The Spread/Depth sensor view was originally provided exclusively for the Simrad PI Spread/Depth sensor. You may however set up one PX MultiSensor to do the same measurements, and still use this sensor view.

---

The PI Spread/Depth sensor thus contains both a pressure sensor to measure the water depth, and a spread sensor to measure the distance to the remote sensor on the other trawl door. The PI Spread/Depth sensor has been developed to be used on both bottom and pelagic trawls.

The sensor is normally installed on the port trawl door using an adapter.

With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.

Note

*This is a "dual" measurement. The sensor system will seize two communication channels on your PI50.*

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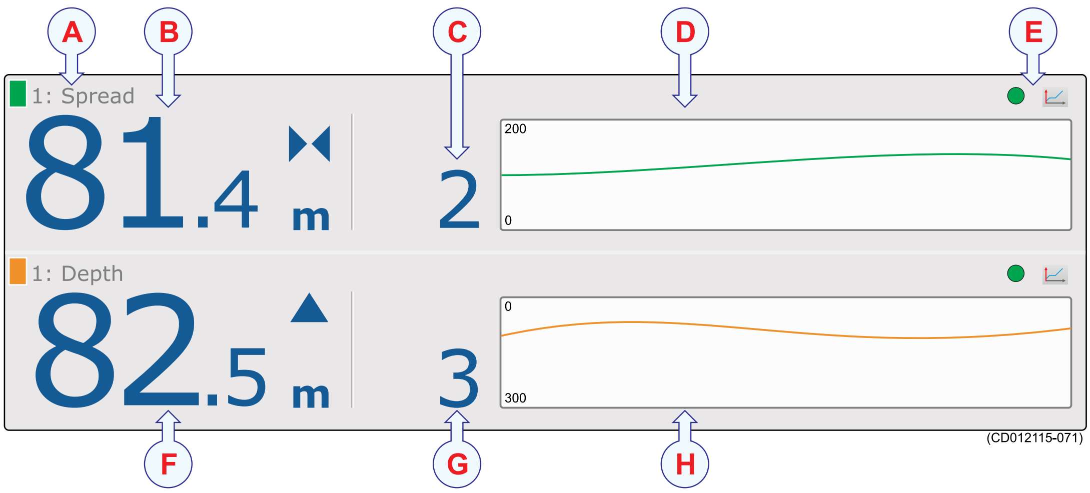


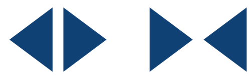

**A** **Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B** **Current spread**

This the current distance between the trawl doors as measured by the sensor system. The current measurement unit is shown, as well as two blue arrowheads.



The arrowheads indicate the current changes in the spread distance; increasing or decreasing. In this example the spread distance is slowly decreasing with 2 meters per minute. If the two arrowheads are pointing towards each other, the spread distance is decreasing. If they are pointing away from each other, the spread distance is increasing.

**C Spread changes**

This digit shows the spread distance changes recorded by the sensor, and thus the increasing or decreasing distance between the two trawl doors. The value is shown in units per minute. The direction is shown with the blue triangles. If the sensor does not detect any spread changes, the arrows are removed.

**D History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

**F Current depth**

This the current depth measured by the sensor. The current measurement unit is shown, as well as a blue arrowhead. The arrowhead indicates the current vertical movement of the sensor; up or down. In this example the sensor measures 82,5 meters from the sea surface and down to the sensor, and the sensor – and thus the gear – is slowly rising with 3 meters each minute.

**G Depth changes**

This digit shows depth changes recorded by the sensor, and thus the ascending or descending speed of the net. The value is shown in units per minute. The direction is shown with the blue arrowhead. If the sensor does not detect any depth changes, the arrowhead is removed.

**H History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

### Related topics


- *'Spread/Depth' sensor view description* on page 135
- *Selecting a dual sensor for spread and depth measurements* on page 78
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Spread/Depth measurements and sensors* on page 257
- *Select Sensors dialog box* on page 197

## 'Temperature' sensor view description

The Simrad temperature sensor tells you the exact sea water temperature while you are fishing.

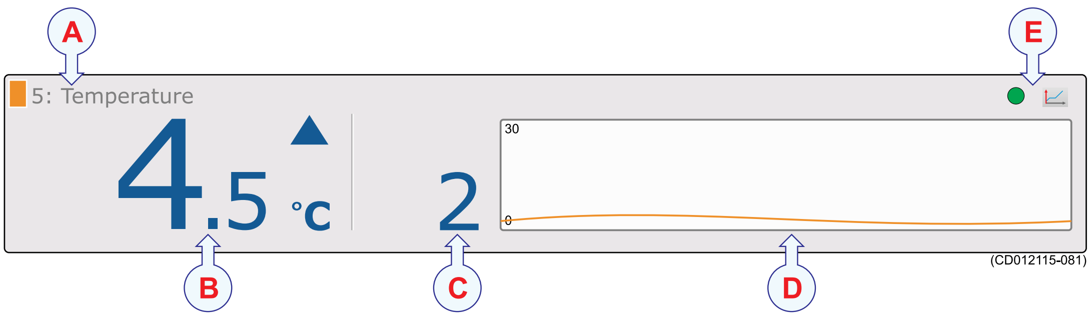
The water temperature is an important parameter. Fish and bait are temperature sensitive, and they are normally found within specific temperature zones for feeding and spawning. However, the temperature layers in the water are constantly changing, and for this reason the temperature must be monitored constantly.

The following Simrad catch monitoring sensors can be used to measure temperature:

- PS Temperature
- PI Temperature
- PX MultiSensor

**Important**

The PX MultiSensor must be equipped with a dedicated lid to make this measurement.



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**A Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B Current temperature**

This the current temperature measured by the sensor. The current measurement unit is shown, as well as a blue triangle. The triangle indicates if the temperature is increasing or decreasing. In this example the temperature is measured to 4,5°C, and it is rapidly increasing with 2°C each minute.

**C Temperature changes**

This digit shows temperature changes recorded by the sensor. The value is shown in units per minute. The direction of the temperature change is shown with the blue triangle. If the sensor does not detect any temperature changes, the arrow is removed.

**D History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

### Related topics


- *'Temperature' sensor view description* on page 138
- *'Temperature' trend view description* on page 155
- *Selecting a sensor for temperature measurement* on page 68
- *Temperature measurements and sensors* on page 260
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197


## 'Temperature/Depth' sensor view description

The purpose of the temperature/depth dual measurement is to check both the water depth and the temperature.

Tip

This sensor view was provided exclusively for the Simrad PI Temperature/Depth sensor. You may however set up one PX MultiSensor to do the same measurements, and then use this sensor view.

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The Simrad PI Temperature/Depth sensor thus contains both a pressure sensor to measure the water depth, and a temperature sensor to measure the temperature. The sensor has been developed to be used on both bottom and pelagic trawls, as well as seines.

On a trawl, this sensor is normally installed on the headrope or footrope.

With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.

Note

*This is a "dual" measurement. The sensor system will seize two communication channels on your PI50.*

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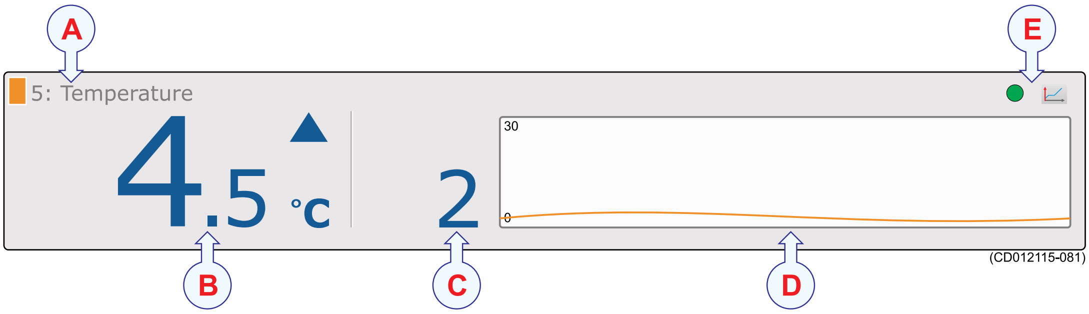



**A** **Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B** **Current depth**

This the current depth measured by the sensor. The current measurement unit is shown, as well as a blue arrowhead. The arrowhead indicates the current vertical movement of the sensor; up or down. In this example the sensor measures 82,5 meters from the sea surface and down to the sensor, and the sensor – and thus the gear – is slowly rising with 3 meters each minute.

**C** **Depth changes**

This digit shows depth changes recorded by the sensor, and thus the ascending or descending speed of the net. The value is shown in units per minute. The direction is shown with the blue arrowhead. If the sensor does not detect any depth changes, the arrowhead is removed.

**D** **History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E** **Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

**F** **Current temperature**

This the current temperature measured by the sensor. The current measurement unit is shown, as well as a blue triangle. The triangle indicates if the temperature is increasing or decreasing. In this example the temperature is measured to 4,5°C, and it is rapidly increasing with 2°C each minute.

**G** **Temperature changes**

This digit shows temperature changes recorded by the sensor. The value is shown in units per minute. The direction of the temperature change is shown with the blue triangle. If the sensor does not detect any temperature changes, the arrow is removed.

**H** **History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

### Related topics


- *'Temperature' sensor view description* on page 138
- *'Temperature' trend view description* on page 155
- *Selecting a sensor for temperature measurement* on page 68
- *Temperature measurements and sensors* on page 260
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197


## 'Geometry' sensor view description

The purpose of the geometry measurement is to monitor the geometry of your trawl or danish seine – that is the relative position between the trawl doors.

The measurement is made by checking the distances between the centre of the headrope above the trawl opening (or the footrope at the bottom) and each of the trawl doors or wing ends. If these distances are not identical the trawl (or danish seine) will be skewed and unbalanced, and this reduces the catch efficiency.

The Simrad geometry sensors have been developed to be used on both bottom and pelagic trawls, as well as pair trawls and danish seiners.

**Note**

*The two Geometry Differential views are both "single" views. The other geometry views are all "dual". These sensors will seize two communication channels on your PI50.*

The following Simrad catch monitoring sensors can be used to measure geometry:

- PX MultiSensor

  You need three sensors. One must be set up as the "geometry" sensor and placed behind the headrope. The two others must be set up as "remote" sensors and placed on each trawl door.

  **Important**

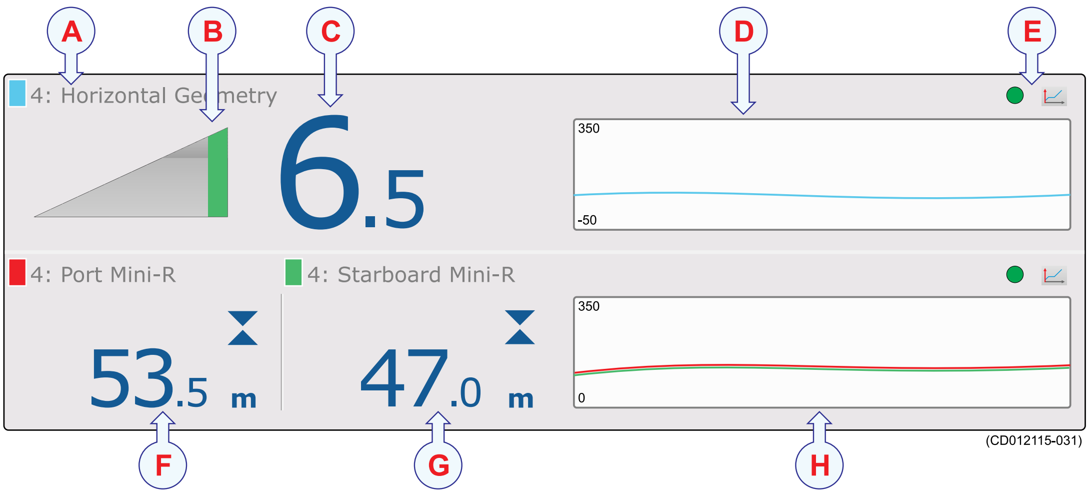
  When a PX MultiSensor is placed on the trawl door for geometry measurements, it must be placed "backwards" with the tip of the sensor pointing towards the headrope.

**Tip**

You can also use one PX MultiSensor behind the headrope and two PI Mini-R transponders on the trawl doors.

- PI Geometry

  You need one PI Geometry sensor, and two PI Mini-R transponders. The PI Geometry sensor is placed behind the headrope, while the two PI Mini-R transponders are mounted on the trawl doors (or trawl wings).



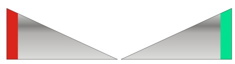

**A Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B Geometry icon**

This icon provides the current status of your trawl geometry.



The sensor system makes accurate measurements of the distances between the centre of the headrope and each of the trawl doors or wing ends. If these distances are not identical the trawl (or danish seine) is skewed and unbalanced.

- Left icon: The wire on the port trawl door is shorter than the wire on the starboard door. The length difference is shown on the right side of the icon. You must pay out on the port side to correct the skewed gear.
- Right icon: The wire on the starboard trawl door is shorter than the wire on the port door. The length difference is shown on the right side of the icon. You must pay out on the starboard side to correct the skewed gear.

The height of each icon gives a visual indication of the status. A large difference in length will make the icon high. If the two lengths are identical, the icon is shaped like a flat rectangle.

**C Length difference**

This is the difference in length between the port and starboard wires, as measured from the headrope to each remote sensor.

**D History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

**F Port length**

This is the length of the wire between the headrope and the port remote sensor.

The current measurement unit is shown, as well as two blue arrowheads. These arrowheads indicate the current horizontal length changes. If the two arrowheads are pointing towards each other, the distance is decreasing.

**G Starboard length**

This is the length of the wire between the headrope and the starboard remote sensor.

The current measurement unit is shown, as well as two blue arrowheads. These arrowheads indicate the current horizontal length changes. If the two arrowheads are pointing towards each other, the distance is decreasing.

**H History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**Related topics**


- *'Geometry' sensor view description* on page 141
- *'Geometry Differential' sensor view description* on page 143
- *'Geometry' trend view description* on page 156
- *Selecting a sensor for geometry measurement* on page 70
- *Geometry measurements and sensors* on page 263
- *Select Sensors dialog box* on page 197


## 'Geometry Differential' sensor view description

The purpose of the geometry measurement is to monitor the geometry of your trawl or danish seine – that is the relative position between the trawl doors.

The measurement is made by checking the distances between the centre of the headrope above the trawl opening (or the footrope at the bottom) and each of the trawl doors or wing ends. If these distances are not identical the trawl (or danish seine) will be skewed and unbalanced, and this reduces the catch efficiency.

The Simrad geometry sensors have been developed to be used on both bottom and pelagic trawls, as well as pair trawls and danish seiners.

Note

*The two Geometry Differential views are both "single" views. The other geometry views are all "dual". These sensors will seize two communication channels on your PI50.*

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The following Simrad catch monitoring sensors can be used to measure geometry:

- PX MultiSensor

  You need three sensors. One must be set up as the "geometry" sensor and placed behind the headrope. The two others must be set up as "remote" sensors and placed on each trawl door.

  Important

  When a PX MultiSensor is placed on the trawl door for geometry measurements, it must be placed "backwards" with the tip of the sensor pointing towards the headrope.

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  Tip

  You can also use one PX MultiSensor behind the headrope and two PI Mini-R transponders on the trawl doors.

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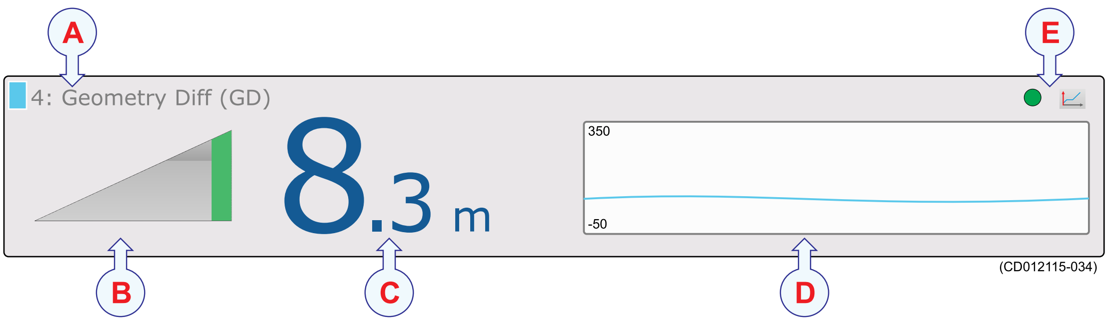
- PI Geometry

  You need one PI Geometry sensor, and two PI Mini-R transponders. The PI Geometry sensor is placed behind the headrope, while the two PI Mini-R transponders are mounted on the trawl doors (or trawl wings).



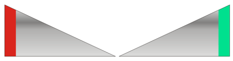

**A Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B Geometry icon**

This icon provides the current status of your trawl geometry.



The sensor system makes accurate measurements of the distances between the centre of the headrope and each of the trawl doors or wing ends. If these distances are not identical the trawl (or danish seine) is skewed and unbalanced.

- Left icon: The wire on the port trawl door is shorter than the wire on the starboard door. The length difference is shown on the right side of the icon. You must pay out on the port side to correct the skewed gear.
- Right icon: The wire on the starboard trawl door is shorter than the wire on the port door. The length difference is shown on the right side of the icon. You must pay out on the starboard side to correct the skewed gear.

The height of each icon gives a visual indication of the status. A large difference in length will make the icon high. If the two lengths are identical, the icon is shaped like a flat rectangle.

**C** **Length difference**

This is the difference in length between the port and starboard wires, as measured from the headrope to each remote sensor.

**D** **History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E** **Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

### Related topics


- *'Geometry' sensor view description* on page 141
- *'Geometry Differential' sensor view description* on page 143
- *'Geometry' trend view description* on page 156
- *Selecting a sensor for geometry measurement* on page 70
- *Geometry measurements and sensors* on page 263
- *Select Sensors dialog box* on page 197


## 'Height/Depth' sensor view description

The purpose of the height/depth dual measurement is to simultaneously check both the water depth and the distance from the sensor and down to the bottom.

Tip

The Height/Depth sensor view was provided exclusively for the Simrad PI SeineSounder sensor. You may however set up one PX MultiSensor to do the same measurements, and then use this sensor view.

The Simrad PI SeineSounder sensor contains both a pressure sensor to measure the water depth, and a small echo sounder to measure the height above the bottom.

It has been developed to be used on both bottom and pelagic trawls, as well as on purse and Danish seiners. The sensor must be installed in two different ways depending on the application. On a trawl, it is mounted horizontally behind the headrope. On a purse seine, it is mounted vertically below the footrope.

Important

In order to provide the two Simrad PI SeineSounder applications and mounting methods, the echo sounder inside the sensor has been equipped with two transducers. By means of a "sensor key" you can easily define which transducer to use.

- Trawl: Use the short bolt
- Purse seine: Use the long bolt

Provided with the sensor is a "gift box" with two sensor keys. These are two special bolts, and by means of magnetism inside the bolts, these will select which echo sounder transducer to use. The bolts will also act as water detectors, and that means that they will slowly disintegrate. When you mount the sensor on a trawl or a purse seine, it is therefore important that you use the correct key:

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With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.

Note

*This is a "dual" measurement. The sensor system will seize two communication channels on your PI50.*

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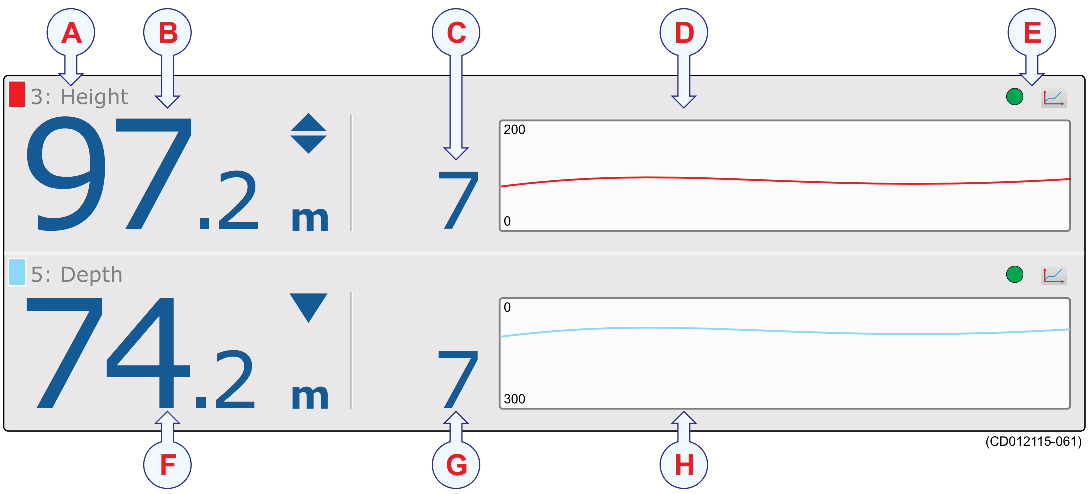


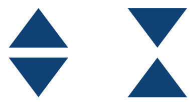
**A Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B Current height**

This is the height from the strongest echo (seabed or footrope) under the sensor, and up to the position on the gear in which the sensor is mounted. The current measurement unit is shown, as well as two blue arrowheads.



The two arrowheads indicate the current vertical movement of the sensor; up or down. In this example the sensor is slowly increasing with 5 meters each minute. If the two arrowheads are pointing towards each other, the height is decreasing. If they are pointing away from each other, the height is increasing.

**C Height changes**

This digit shows height changes recorded by the sensor. The value is shown in units per minute. The direction is shown with the two blue arrowheads. If the sensor does not detect any height changes, the triangles are removed.

**D History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**E Pulse lamp and Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

**F Current depth**

This the current depth measured by the sensor. The current measurement unit is shown, as well as a blue arrowhead. The arrowhead indicates the current vertical movement of the sensor; up or down. In this example the sensor measures 82,5 meters from the sea surface and down to the sensor, and the sensor – and thus the gear – is slowly rising with 3 meters each minute.

**G Depth changes**

This digit shows depth changes recorded by the sensor, and thus the ascending or descending speed of the net. The value is shown in units per minute. The direction is shown with the blue arrowhead. If the sensor does not detect any depth changes, the arrowhead is removed.

**H History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

### Related topics

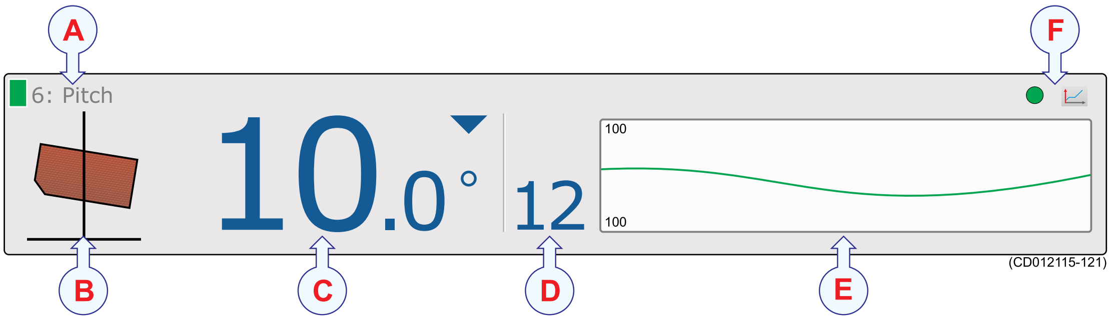
- *'Height/Depth' sensor view description* on page 145
- *Selecting a dual sensor for height and depth measurements* on page 76
- *Height/Depth measurements and sensors* on page 266

## 'Pitch' sensor view description

The pitch measurement allows you to monitor the movements of the trawl door. If the door tilts forward or backwards in an uncontrolled manner, you are able to detect this immediately.

The following Simrad catch monitoring sensors can be used to measure pitch:

- PX MultiSensor




**A Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B Pitch icon**

This icon provides a visual presentation of the current pitch.

The angle of the icon shows you if the trawl door is pitched in the forward or aft direction.

**C Current pitch**

This is the numerical readout of the current pitch angle (in degrees).

The small arrowhead indicates the current pitch movement. If the arrowhead points down, the trawl door is pitching forward. If the arrowhead points up, the trawl door pitches backwards.

**D Pitch changes**

This digit shows the pitch changes recorded by the sensor. The value is shown in degrees. The direction is shown with the two blue arrowheads. If the sensor does not detect any pitch changes, the arrowheads are removed.

**E** **History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

**F** **Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

### Related topics

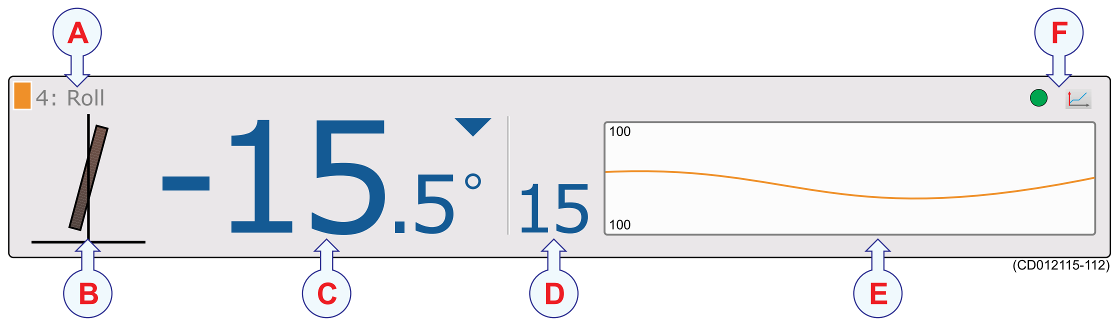

- *'Pitch' sensor view description* on page 148
- *'Pitch' trend view description* on page 157
- *Selecting a sensor for pitch angle measurement* on page 75
- *Pitch measurements and sensors* on page 269
- *Select Sensors dialog box* on page 197


## 'Roll' sensor view description

The roll measurement allows you to monitor the movements of the trawl door. If the door tilts sideways in an uncontrolled manner, you are able to detect this immediately.

The following Simrad catch monitoring sensors can be used to measure roll:

- PX MultiSensor




**A** **Sensor identifier**

The identifier is the **Label ID** parameter, the sensor name is the **Sensor Value Name** parameter. You can control these parameters in the **Select Sensors** dialog.

The colour code is issued automatically by the PI50 system. The same colour is used in the *Trend* view and in the *History* field.

**B** **Roll icon**

This icon provides a visual presentation of the current roll.

The angle of the icon shows you if the trawl door is leaning towards port (red) or starboard (green).

**C** **Current roll**

This is the numerical readout of the current roll angle (in degrees).

The small arrowhead indicates the current pitch movement. If the arrowhead points down, the trawl door is leaning towards port. If the arrowhead points up, the trawl door is leaning towards starboard.

**D** **Roll changes**

This digit shows the roll changes recorded by the sensor. The value is shown in degrees. The direction is shown with the two blue arrowheads. If the sensor does not detect any roll changes, the arrowheads are removed.

**E** **History field**

When the size of the presentation rectangle permits, the *History* field is shown. The field offers a graphical presentation of the sensor information for the last 20 minutes. The vertical range is set automatically defined by the current measurements.

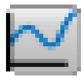
**F** **Pulse lamp** and **Trend view**

The green **Pulse lamp** icon flashes every time a signal is received from the sensor. Click the **Trend view** button to open (and close) the *Trend* view for the sensor.

### Related topics

- *'Roll' sensor view description* on page 149
- *'Roll' trend view description* on page 157
- *Selecting a sensor for roll angle measurement* on page 73
- *Roll measurements and sensors* on page 271

# Trend view descriptions



The *Trend* view is opened by clicking the icon in the top right corner of the *Sensor* view rectangle. The *Trend* view comprises a graph. The graph displays the historic development of the information provided by the relevant sensor.

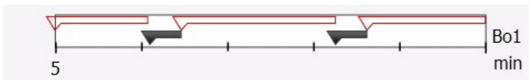
Once opened, the graph is placed on the left side of the screen. If more than one graph is opened, they are placed on top of each other in the order you opened them. The vertical size of each graph is automatically adjusted. The curve provided by the graph uses the same colour that is used to identify the sensor in the *Sensor* view. The colour is chosen automatically by the PI50.

### Topics

- *'Bottom contact' trend view description* on page 151
- *'Catch' trend view description* on page 152
- *'Depth' trend view description* on page 152
- *'Height' trend view description* on page 153
- *'Spread' trend view description* on page 154
- *'Twin spread' trend view description* on page 155
- *'Temperature' trend view description* on page 155
- *'Geometry' trend view description* on page 156
- *'Pitch' trend view description* on page 157

## 'Bottom contact' trend view description

The bottom contact trend view shows you when the sensor has been activated.




**a** The vertical scale is fixed.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

The time can be selected from 5 to 1440 minutes (24 hours).

**c** The curve in the graph has the same colour as used to identify the sensor in the *Sensor* view. The label at the right end of the curve identifies the sensor's **Label ID** and the type of sensor.

**d** The curve simply shows when the sensor has been triggered.

### Related topics

- *'Bottom contact' sensor view description* on page 124
- *'Bottom contact' trend view description* on page 151
- *Selecting a sensor for bottom contact measurement* on page 56
- *Bottom contact measurements and sensors* on page 242
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190

## 'Catch' trend view description


The catch trend view shows you when the sensor has been activated.

**a** The vertical scale is fixed.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

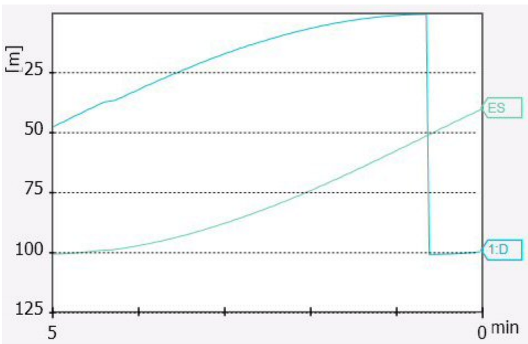
The time can be selected from 5 to 1440 minutes (24 hours).

**c** The curve simply shows when the sensor has been triggered.

### Related topics


- *'Catch' sensor view description* on page 126
- *'Catch' trend view description* on page 152
- *Selecting a sensor for catch measurement* on page 57
- *Catch measurements and sensors* on page 244
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190


## 'Depth' trend view description




The depth trend view shows the depth values recorded by the sensor.

**a** The vertical scale is defined by the settings made by clicking **Range** and **Start Range** on the **Main** menu.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

The time can be selected from 5 to 1440 minutes (24 hours).

**c** The curve in the graph has the same colour as used to identify the sensor in the *Sensor* view. The label at the right end of the curve identifies the sensor's **Label ID** and the type of sensor.

**d** If an external echo sounder is connected to the PI50, the depth recorded by the sounder is also shown. The curve is identified with the label **ES** on the right side.

Note

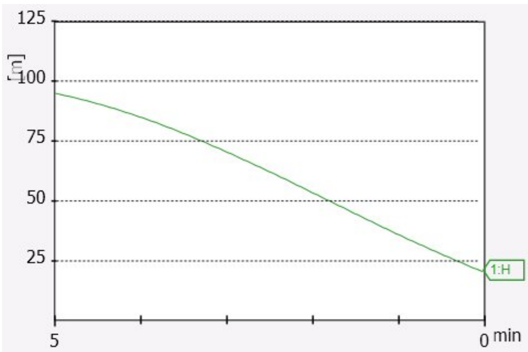
*This trend view is applied for all the sensors that provide a depth measurement.*

### Related topics

- *'Depth' sensor view description* on page 127
- *'Depth' trend view description* on page 152
- *Selecting a sensor for depth measurement* on page 59
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Calibration of the depth sensors* on page 95
- *Depth measurements and sensors* on page 246
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190
- *Range function* on page 173
- *Start Range function* on page 174

## 'Height' trend view description

The height trend view shows the height values recorded by the sensor.




**a** The vertical scale is defined by the settings made by clicking **Range** and **Start Range** on the **Main** menu.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

The time can be selected from 5 to 1440 minutes (24 hours).

**c** The curve in the graph has the same colour as used to identify the sensor in the *Sensor* view. The label at the right end of the curve identifies the sensor's **Label ID** and the type of sensor.

Note

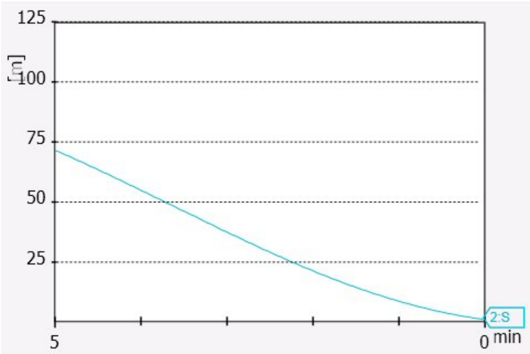
*This trend view is applied for all the sensors that provide a height measurement.*

### Related topics

- *'Height' sensor view description* on page 130
- *'Height' trend view description* on page 153
- *Selecting a sensor for height measurement* on page 62
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Setting up the height sensor to show the trawl opening* on page 87
- *Height measurements and sensors* on page 249
- *Select Sensors dialog box* on page 197

- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190
- *Range function* on page 173
- *Start Range function* on page 174

## 'Spread' trend view description




The spread trend view shows the distance between the trawl doors.

**a** The vertical scale is defined by the settings made by clicking **Range** and **Start Range** on the **Main** menu.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

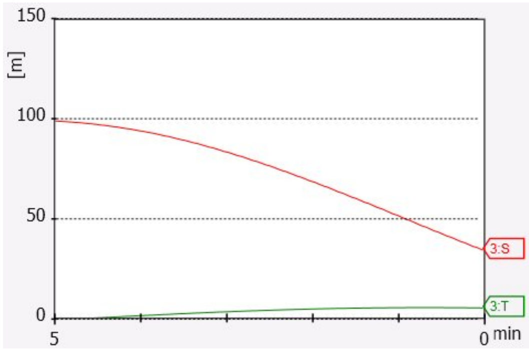
The time can be selected from 5 to 1440 minutes (24 hours).

**c** The curve in the graph has the same colour as used to identify the sensor in the *Sensor* view. The label at the right end of the curve identifies the sensor's **Label ID** and the type of sensor.

### Related topics

- *'Spread' sensor view description* on page 131
- *'Spread' trend view description* on page 154
- *Selecting a sensor for spread measurement* on page 64
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Spread measurements and sensors* on page 251
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190
- *Range function* on page 173
- *Start Range function* on page 174

## 'Twin spread' trend view description




The twin spread trend view shows the distance between the trawl doors in a dual trawl system.

**a** Two curves are shown, one for the port spread, on one for the starboard spread.

**b** The vertical scale is defined by the settings made by clicking **Range** and **Start Range** on the **Main** menu.

**c** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

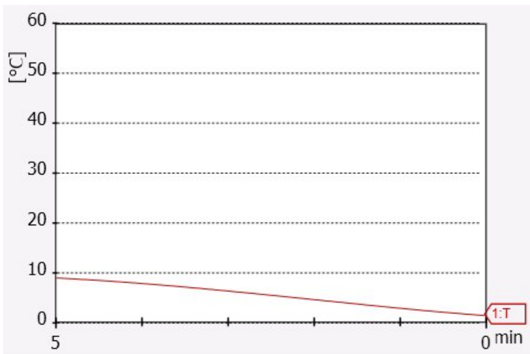
The time can be selected from 5 to 1440 minutes (24 hours).

**d** The history curves use the same two colours that are used to identify the starboard and port measurement. The labels at the right end of the curve identify the sensor's **Label ID** and the type of sensor.

### Related topics

- *'Twin Spread' sensor view description* on page 133
- *'Twin spread' trend view description* on page 155
- *Selecting a sensor for twin spread measurement* on page 66
- *Twin spread measurements and sensors* on page 254
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190
- *Range function* on page 173
- *Start Range function* on page 174

## 'Temperature' trend view description




The temperature trend view shows the temperature changes recorded by the sensor.

**a** The vertical scale is set up automatically.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

The time can be selected from 5 to 1440 minutes (24 hours).

**c** The curve in the graph has the same colour as used to identify the sensor in the *Sensor* view. The label at the right end of the curve identifies the sensor's **Label ID** and the type of sensor.

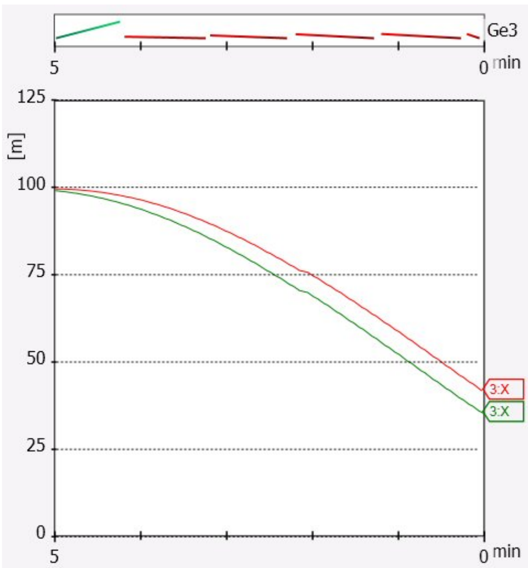
Note

*This trend view is applied for all the sensors that provide a temperature measurement.*

**Related topics**

- *'Temperature' sensor view description* on page 138
- *'Temperature' trend view description* on page 155
- *Selecting a sensor for temperature measurement* on page 68
- *Temperature measurements and sensors* on page 260
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190

## 'Geometry' trend view description




The geometry provides two trend views that can be opened individually. The top graph provides an overall description of the geometry. The bottom graph presents a detailed view of the two distances that are measured by the sensor.

**a** The vertical scale is defined by the settings made by clicking **Range** and **Start Range** on the **Main** menu.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

The time can be selected from 5 to 1440 minutes (24 hours).

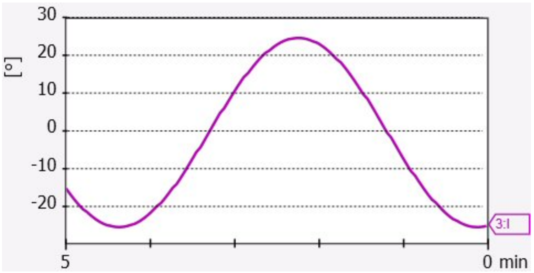
**c** The history curves use the same two colours that are used to identify the starboard and port measurement. The labels at the right end of the curve identify the sensor's **Label ID** and the type of sensor.

**Related topics**

- *'Geometry' sensor view description* on page 141
- *'Geometry Differential' sensor view description* on page 143
- *'Geometry' trend view description* on page 156
- *Selecting a sensor for geometry measurement* on page 70
- *Geometry measurements and sensors* on page 263
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190
- *Range function* on page 173
- *Start Range function* on page 174

## 'Pitch' trend view description

The pitch trend view shows the pitch movements made by the trawl door (or any other item that the sensor is placed upon).




**a** The vertical scale is set up automatically.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

The time can be selected from 5 to 1440 minutes (24 hours).

**c** The curve in the graph has the same colour as used to identify the sensor in the *Sensor* view. The label at the right end of the curve identifies the sensor's **Label ID** and the type of sensor.

Note

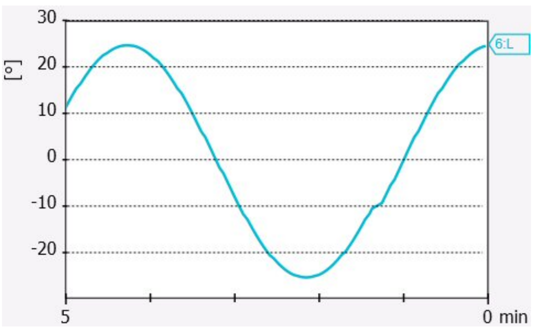
*If you open the trend views for both the roll and pitch measurements simultaneously, the two curves will be placed in the same graph with two different colours.*

### Related topics


- *'Pitch' sensor view description* on page 148
- *'Pitch' trend view description* on page 157
- *Selecting a sensor for pitch angle measurement* on page 75
- *Pitch measurements and sensors* on page 269
- *Select Sensors dialog box* on page 197
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190


## 'Roll' trend view description

The roll trend view shows the roll movements made by the trawl door (or any other item that the sensor is placed upon).




**a** The vertical scale is set up automatically.

**b** The horizontal scale is defined by the parameter selected by clicking **Trend History Length** on the **Display** menu.

The time can be selected from 5 to 1440 minutes (24 hours).

**c** The curve in the graph has the same colour as used to identify the sensor in the *Sensor* view. The label at the right end of the curve identifies the sensor's **Label ID** and the type of sensor.

Note

*If you open the trend views for both the roll and pitch measurements simultaneously, the two curves will be placed in the same graph with two different colours.*

**Related topics**


- *'Roll' sensor view description* on page 149
- *'Roll' trend view description* on page 157
- *Selecting a sensor for roll angle measurement* on page 73
- *Roll measurements and sensors* on page 271
- *Select Sensors dialog box* on page 197
- *Trend History Length function* on page 190

# Screen captures

The PI50 provides a built-in screen capture function.

To save all the information on the complete PI50 display presentation, click **Screen Capture** on the **Title Bar**.


To access the images, click **Screen Captures** on the **Display** menu. This will open a standard file folder, and you can use common operating system functions to delete, copy, rename or move the files.

Each file is named according to the following key:

`Dyyyymmdd_Thhmmss_Image.jpg`

The first part of the file name (D) defines the date, while the second part (T) defines the time.

### Related topics

- *Screen Captures function* on page 193

# The menu system

The menu navigation employed by the PI50 is similar to the other Simrad applications which follow the new user interface standards developed by Simrad.

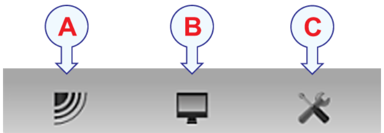
The main menu is by default located at the right side of the screen. By means of dedicated icons at the bottom of the main menu, you can open and close the relevant submenus. Menu choices shown in dark colours are not available for the current operation or operational mode.

### Topics

# About menus and buttons

The selection of operational parameters on the PI50 is done using a tree structure with a main menu, a set of submenus, and several menu buttons. Some of the menu buttons open dialog boxes or submenus to offer additional choices.

The **Main** menu provides the parameters most frequently used during normal operation.



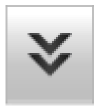

Below the main menu, dedicated buttons are used to open the submenus. These are (from left):

**A** The **Operation** menu controls the main operational parameters.

**B** The **Display** menu controls the visual aspects of the system, such as parameters related to the display presentation.

**C** The **Setup** menu allows you to control the configuration of the signal processing, as well as system installation and maintenance, and the interfaces to peripheral devices.

Tip

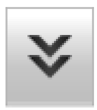


You can hide the menu from view if you do not need it. Click the **Menu** button on the **Title Bar** to hide the menu. Click one more time to retrieve it.

The text in the buttons can be changed to suit your preference by clicking **Language** on the **Display** menu.

You can also place the menu on the left side of the PI50 presentation by clicking **Menu on the right side** in the **Display Options** dialog box.

### Menu button



On the **Title bar**, click once on the **Menu** button to hide the menu. Click one more time to bring the menu back again.

# Button types

Each menu contains several menu buttons. Each button shows the function of the button, some of them also display the current parameter setting. The majority of the buttons in each menu provide one or more of these functions.

**a** You can increase and decrease parameter values by clicking the [+] and [–] fields on the button.

**b** You can change parameter values by clicking on the button, holding the mouse depressed, and then moving the cursor sideways.

**c** You can change parameter values by means of the scroll wheel on the mouse or trackball.

**d** You can enter parameter values from the keyboard (if you have one).

**e** You can select parameter value from the button's submenu.

**f** You can open a dedicated dialog box.

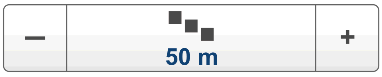
### How to select a numerical parameter using the +/- buttons

**1** Move the cursor to either side of the button, and observe that the background colour changes.

  **a** Click on the left side of the button to decrease the numerical value.

  **b** Click on the right side of the button to increase the numerical value.

### How to select a numerical parameter by moving the cursor horizontally




**1** Place the cursor on the middle of the button.

**2** Click and hold the left mouse button depressed.

**3** Move the cursor horizontally: left to decrease the value, or right to increase it.

**4** Release the mouse button when the requested value is shown.

### How to select a numerical parameter by means of the scroll wheel


**1** Place the cursor on the middle of the button.

**2** Spin the scroll wheel in either direction to increase or decrease the value.

**3** Release the scroll wheel when the requested value is shown.

### How to select a numerical parameter using the keyboard

**1** Click the middle section of the button to open a text field.

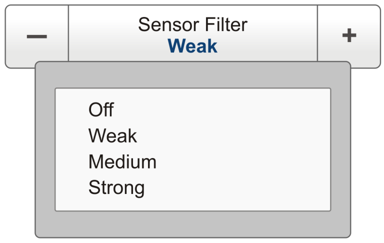
**2** Type the numerical value into the text field.

If the numerical value exceeds the permitted range for the parameter, the frame in the text field will be red.

You will then not be able to keep that value.

**3** Press the **Enter** key.

### How to select a parameter using a submenu




1 Click the middle section of the button to open a submenu, then click the requested command, option or button.

   The chosen value is applied, and the submenu is automatically closed.

2 Whenever applicable, you can also access the submenu by clicking the left and right side of the button. This method will not show you the choices on the submenu.

   a Click on the <u>left</u> side of the button to select a 'lower' submenu choice.

   b Click on the <u>right</u> side of the button to select a 'higher' submenu choice.

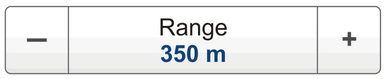
### How to select parameters using a dialog box

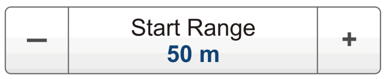

1 Click anywhere on the button to open a separate dialog box.

# Main menu

The following functions and parameters are available from the **Main** menu.

The **Main** menu is presented in the *Main* mode on the PI50 start page.


1 **User Settings**

   The **User Settings** dialog box allows you to save the current user settings (parameter selections), and to retrieve factory or previously saved user settings.

   → *User Settings dialog box* on page 170

2 **Range**

   The **Range** function allows you to specify the maximum range of the sensors related to the physical length or depth measurements. The range is defined from a selected start range, and in horizontal or vertical direction to a value exceeding the bottom depth or the location of the sensor. Use this setting together with the **Start Range** parameter to set up the depth or distance scales in the *Trend* views.

   → *Range function* on page 173

3 **Start Range**

   The **Start Range** function allows you to specify the start value for the depth or distance presentation in the sensor's history field. Use this setting together with **Range** to set up the depth or distance scales in the *Trend* views.

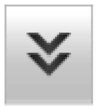
   → *Start Range function* on page 174

### Submenus

The bottom of the **Main** menu holds the icons for the submenus. Click on one of these icons to open the requested submenu.

### Menu button

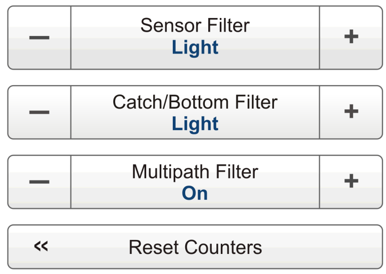
On the **Title bar**, click once on the **Menu** button to hide the menu. Click one more time to bring the menu back again.



# Operation menu

The following functions and parameters are available from the **Operation** menu.

Click once on the icon under the **Main** menu to open the **Operation** menu. Click one more time on the icon to close the menu.




**1 Sensor Filter**

The **Sensor Filter** can be used if you have problems with the reception. It will average the data received from the sensors.

→ *Sensor Filter function* on page 176

**2 Catch/Bottom Filter**

The **Catch/Bottom Filter** is used to restrict the change of state from the catch and bottom contact sensors. This will reduce jitter in the presentation.

→ *Catch/Bottom Filter function* on page 177

**3 Multipath Filter**

The **Multipath Filter** is designed to remedy for reflections, spikes and time-lag in the sensor data. These problems may occur if neighbouring channels are used, or if the PI50 is disturbed by other hydroacoustic systems in use on your own or other vessels.

→ *Multipath Filter function* on page 179

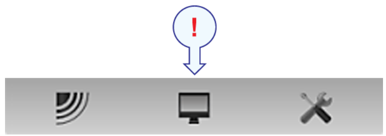
**4 Reset Counters**

The **Reset Counters** function allows you to reset the built-in timer function.

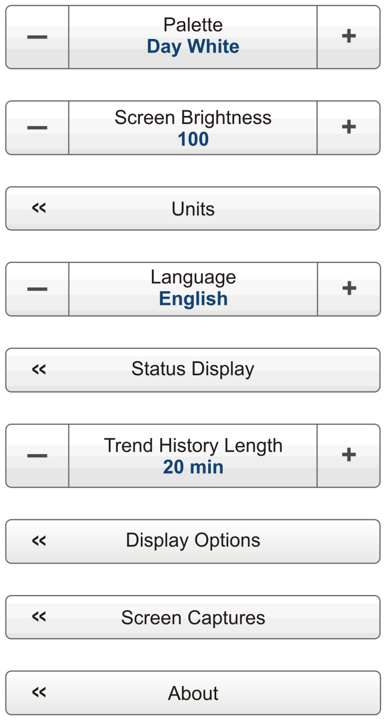
→ *Reset Counters function* on page 180

# Display menu

The following functions and parameters are available from the **Display** menu.



Click once on the icon under the **Main** menu to open the **Display** menu. Click one more time on the icon to close the menu.




**1 Palette**

The purpose of the **Palette** function is to choose which colour theme to be used by the PI50 presentations.

→ *Palette function* on page 182

**2 Screen Brightness**

The purpose of the **Screen Brightness** function is to adjust the intensity of the light given off by the display.

→ *Screen Brightness function* on page 183

**3 Units**

The purpose of the **Units** dialog box is to control the units of measurements used by the PI50.

→ *Units dialog box* on page 183

**4 Language**

The purpose of the **Language** function is to select the language to be used on the menus and elsewhere in the graphical user interface.

→ *Language function* on page 184

**5 Status Display**

The **Status Display** dialog box provides an overview of the current hydro-acoustical conditions.

→ *Status Display dialog box* on page 185

**6 Trend History Length**

The **Trend History Length** function allows you to adjust the horizontal resolution of the *Trend* views.

→ *Trend History Length function* on page 190

**7 Display Options**

The purpose of the **Display Options** dialog box is to control the location of the menu, and which information to be provided on the **Title Bar** and the **Status bar**.

→ *Display Options dialog box* on page 190

**8 Screen Captures**

The **Screen Captures** function allows you to access the screen captures you have created using the **Screen Capture** button on the **Title Bar**.

→ *Screen Captures function* on page 193

**9 About**

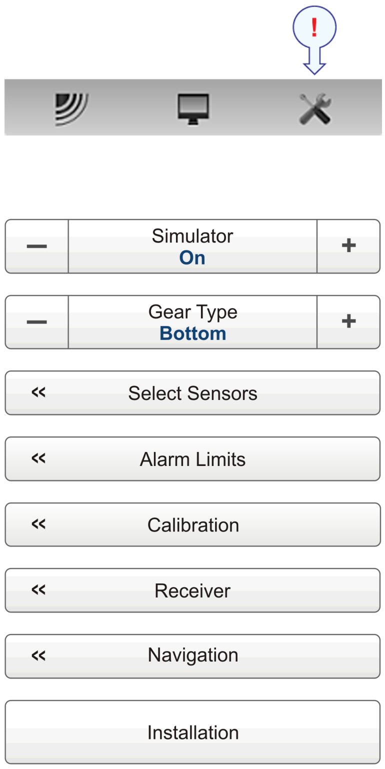
The **About** dialog box allows you to see the current PI50 software version.

→ *About dialog box* on page 193

# Setup menu

The following functions and parameters are available from the **Setup** menu.

Click once on the icon under the **Main** menu to open the **Setup** menu. Click one more time on the icon to close the menu.




**1 Simulator**

The **Simulator** will provide artificial sensor data to support hands-on PI50 training and functional testing.

→ *Simulator function* on page 196

**2 Gear Type**

The **Gear Type** function allows you to set up the PI50 to work with either a pelagic or a bottom trawl. The function is only used with Bottom Contact sensors.

→ *Gear Type function* on page 196

**3 Select Sensors**

The **Select Sensors** dialog box allows you to define which sensors you will use to monitor your gear.

→ *Select Sensors dialog box* on page 197

**4 Alarm Limits**

The **Alarm Limits** dialog box allows you to define alarms related to the information provided by the relevant catch monitoring sensors.

→ *Alarm Limits dialog box* on page 204

**5 Calibration**

The purpose of the **Calibration** dialog box is to accept and apply the calibration information from the depth sensor calibration.

→ *Calibration function* on page 205

**6 Receiver**

The **Receiver** dialog box allows you to set up the detailed communication parameters. It provides parameters to "fine tune" the receiver circuitry for optimal performance in various sea conditions, and for various gear types.

→ *Receiver dialog box* on page 206

**7 Navigation**

The **Navigation** dialog box controls how the PI50 receives information from external peripherals, such as navigation and gyro compass systems.

→ *Navigation dialog box* on page 211

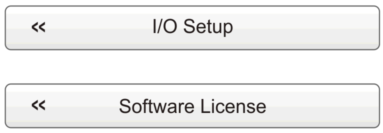
**8 Installation**

The **Installation** function opens a small submenu with access to the functions and dialog boxes required to set up the PI50 for operational use.

→ *Installation menu* on page 220

# Installation menu

The following functions and dialog boxes are available from the submenu provided by the **Installation** button on the **Setup** menu.




**1 I/O Setup**

The **I/O Setup** dialog box allows you to control the properties of each of the available communication channels on the PI50 Processor Unit.

→ *I/O Setup dialog box* on page 222

**2 Software License**

The purpose of the **Software License** dialog box is to allow you to enter a license code (text string) to unlock the PI50 functionality. In order to obtain the license code(s) required, contact your dealer.

→ *Software License dialog box* on page 226

# Functions and dialog boxes

This chapter presents a detailed description of each function and dialog box used by the PI50. Whenever applicable, references are made to practical procedures in the *Getting Started* or *Operational procedures* chapters.

You do not need to have an in-depth knowledge of these functions and dialog boxes to use the PI50. The information in this chapter is for reference only.

### Topics



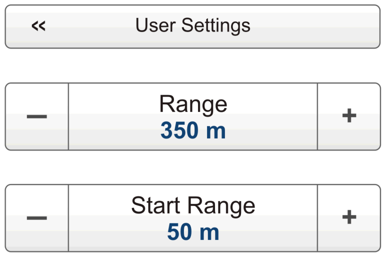
### Related procedures


- *Operational procedures* on page 42

# Main menu; functions and dialog boxes

The following functions and parameters are available from the **Main** menu.

The **Main** menu is presented in the *Main* mode on the PI50 start page.




1 **User Settings**

The **User Settings** dialog box allows you to save the current user settings (parameter selections), and to retrieve factory or previously saved user settings.

→ *User Settings dialog box* on page 170

2 **Range**

The **Range** function allows you to specify the maximum range of the sensors related to the physical length or depth measurements. The range is defined from a selected start range, and in horizontal or vertical direction to a value exceeding the bottom depth or the location of the sensor. Use this setting together with the **Start Range** parameter to set up the depth or distance scales in the *Trend* views.

→ *Range function* on page 173

3 **Start Range**

The **Start Range** function allows you to specify the start value for the depth or distance presentation in the sensor's history field. Use this setting together with **Range** to set up the depth or distance scales in the *Trend* views.

→ *Start Range function* on page 174

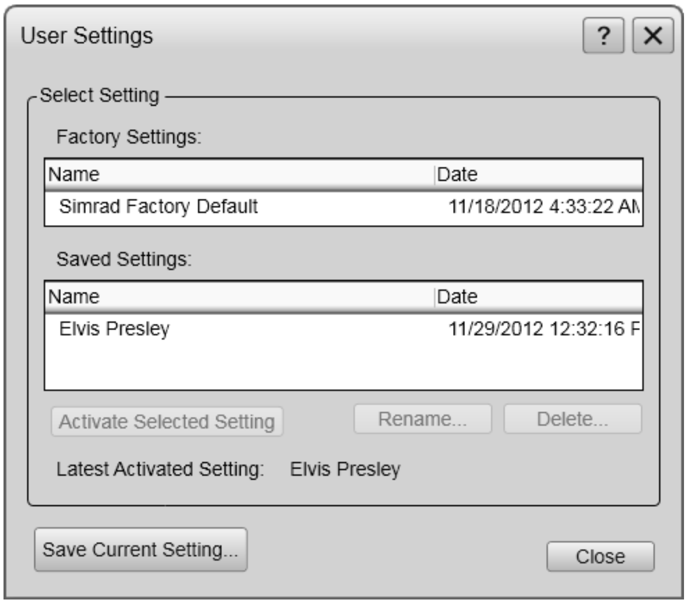
## User Settings dialog box

To open the **User Settings** dialog box, click **User Settings** on the **Main** menu.


### Purpose

The **User Settings** dialog box allows you to save the current user settings (parameter selections), and to retrieve factory or previously saved user settings.

## Description




This dialog box is used to store the PI50 settings for different type of fisheries, or individual user related settings.

You can create as many user profiles as you like, and you can give them any type of name. All the parameters you have entered using menu buttons and dialogs are saved in the configuration file.

The settings saved using the **User Settings** functionality includes all receiver settings, interface parameters, as well as the currently selected sensors and their communication parameters. This is useful if you operate a combined trawler and seiner using different sensor setup on the different gears.

## Parameters

**1 Factory Settings**

These settings are those provided by Simrad. These settings may be put to use if you are uncertain of which parameters to use, as they offer "best practice" for typical use. The factory settings can not be altered.

Tip

Unless they are saved, all your current settings are lost when the default or saved settings are applied.

**2 Saved Settings**

These settings are those created and saved by you and other PI50 users. Each setting is identified by a name, and the time and date it was created. These settings may be deleted or renamed.

You can save an unlimited number of profile settings, only limited by the size of the hard disk on your computer.

**3 Activate Selected Setting**

To activate either a factory or a saved setting, click the setting name in one of the lists, then click this button.

**4 Rename**

This button is used to rename one of the saved settings.

To rename a setting, click the setting name, and then this button. A dedicated dialog box opens to accept the new name.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

The factory setting(s) can not be renamed.

**5 Delete**

This button is used to delete one of the saved settings.

To delete a setting, click the setting name, and then this button. A dedicated dialog box opens to verify your choice.

The factory setting(s) can not be deleted.

**6 Save Current Setting**

This button is used to save the currently applied PI50 settings.

To save the settings, click this button. A dedicated dialog box opens to record the name of the new settings.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

You can only add settings to the **Saved Settings** list.

## Related procedures

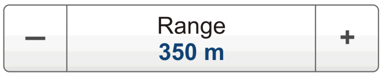
- *Choosing PI50 factory default settings* on page 46
- *Saving the current user settings* on page 45
- *Using previously saved settings* on page 46

## Related topics

- *Main menu; functions and dialog boxes* on page 170

## Range function

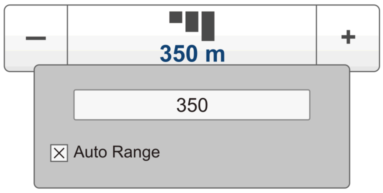
To change the **Range**, click **Range** on the **Main** menu.




### Purpose

The **Range** function allows you to specify the maximum range of the sensors related to the physical length or depth measurements. The range is defined from a selected start range, and in horizontal or vertical direction to a value exceeding the bottom depth or the location of the sensor. Use this setting together with the **Start Range** parameter to set up the depth or distance scales in the *Trend* views.

### Description




This parameter setting applies to the currently selected sensor’s history field (identified with a thick border).

Tip

If you open this menu button, you will only be able to enter a value if a computer keyboard is connected to your PI50. However, you can click the button, hold the mouse button depressed, and then move the mouse – and cursor – sideways. This allows you to change the parameter value. You can also adjust the setting by clicking and holding either the [+] or [-] buttons.

---

### Parameters

**1 Range**

This parameter controls the displayed depth or distance range in the sensor's trend view.

The start value for the vertical or horizontal range shown in the trend view will always be the value defined by the **Start Range** parameter.

*Example 5 Depth sensor*

When you open the trend view for a depth sensor, it will display a vertical depth range. The range has a start depth defined by the **Start Range** parameter, and a total maximum depth range defined by the **Range** parameter. If you set **Range** to 500 meters and **Start Range** to 100 meters, the trend vierw will show the sensor results with a depth scale from 100 and 500 meters.

*Example 6 Spread sensor*

When you open the trend view for a spread sensor, it will display a horizontal range. The range has a start value defined by the **Start Range** parameter, and a total maximum range defined by the **Range** parameter. If you set **Range** to 60 meters and **Start Range** to 5 meters, the trend view will show the sensor results with a horizontal range scale from 5 and 60 meters. If you set a small range scale, for example ±10 meters related to the nominal spread distance, you will easily see small changes in the distance.

**2 Auto Range**

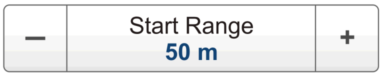
This selection allows the PI50 to automatically adjust the range.

### Related topics


- *Trend view descriptions* on page 151
- *Main menu; functions and dialog boxes* on page 170
- *Start Range function* on page 174


## Start Range function

To change the **Start Range** , click **Start Range** on the **Main** menu.

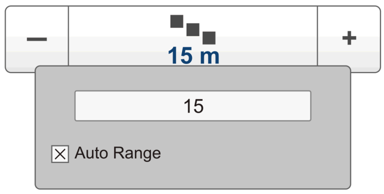



### Purpose

The **Start Range** function allows you to specify the start value for the depth or distance presentation in the sensor's history field. Use this setting together with **Range** to set up the depth or distance scales in the *Trend* views.

### Description

This start range value applies to the currently selected sensor's history field (identified with a thick border).




Tip

If you open this menu button, you will only be able to enter a value if a computer keyboard is connected to your PI50. However, you can click the button, hold the mouse button depressed, and then move the mouse – and cursor – sideways. This allows you to change the parameter value. You can also adjust the setting by clicking and holding either the [+] or [-] buttons.

---

### Parameters

**1 Start Range**

This parameter controls the start value of the information provided in the sensor's trend view.

*Example 7 Depth sensor*

When you open the trend view for a depth sensor, it will display a vertical depth range. The range has a start depth defined by the **Start Range** parameter, and a total maximum depth range defined by the **Range** parameter. If you set **Range** to 500 meters and **Start Range** to 100 meters, the trend vierw will show the sensor results with a depth scale from 100 and 500 meters.

*Example 8 Spread sensor*

When you open the trend view for a spread sensor, it will display a horizontal range. The range has a start value defined by the **Start Range** parameter, and a total maximum range defined by the **Range** parameter. If you set **Range** to 60 meters and **Start Range** to 5 meters, the trend view will show the sensor results with a horizontal range scale from 5 and 60 meters. If you set a small range scale, for example ±10 meters related to the nominal spread distance, you will easily see small changes in the distance.

**2 Auto Range**

This selection allows the PI50 to automatically adjust the start range.

### Related procedures

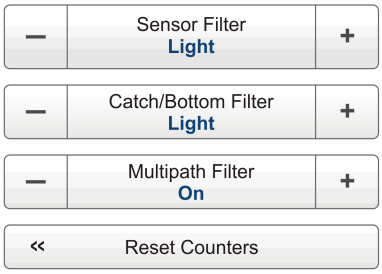
### Related topics


- *Trend view descriptions* on page 151
- *Main menu; functions and dialog boxes* on page 170
- *Range function* on page 173

# Operation menu; functions and dialog boxes

The following functions and parameters are available from the **Operation** menu.

Click once on the icon under the **Main** menu to open the **Operation** menu. Click one more time on the icon to close the menu.


**1 Sensor Filter**

The **Sensor Filter** can be used if you have problems with the reception. It will average the data received from the sensors.

→ *Sensor Filter function* on page 176

**2 Catch/Bottom Filter**

The **Catch/Bottom Filter** is used to restrict the change of state from the catch and bottom contact sensors. This will reduce jitter in the presentation.

→ *Catch/Bottom Filter function* on page 177

**3 Multipath Filter**

The **Multipath Filter** is designed to remedy for reflections, spikes and time-lag in the sensor data. These problems may occur if neighbouring channels are used, or if the PI50 is disturbed by other hydroacoustic systems in use on your own or other vessels.

→ *Multipath Filter function* on page 179

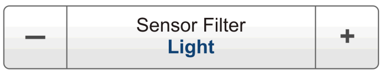
**4 Reset Counters**

The **Reset Counters** function allows you to reset the built-in timer function.

→ *Reset Counters function* on page 180

## Sensor Filter function

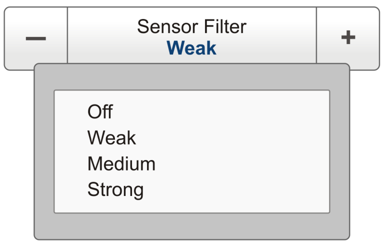
To use the **Sensor Filter**, click **Sensor Filter** on the **Operation** menu.




### Purpose

The **Sensor Filter** can be used if you have problems with the reception. It will average the data received from the sensors.

### Description




The PI50 is designed to quickly update data.

After the sensors have been submerged, the receiver requires only three consecutive pings from individual sensors to calculate and display their respective information. However, if you experience problems with the reception, you may try this filter.

The **Sensor Filter** offers four different settings. *Weak* filtering will average the data received by the last four sensor transmissions, while *Strong* filtering averages the data received by the last 16 transmissions.

The **Sensor Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu.

The default setting of the **Sensor filter** is *Weak*.

Tip

We recommend that you use *Weak* filtering if there are large fluctuations in the displayed data, or if the rate of change is small. Reduced filtering is preferable, since this shortens the delay between updating the changes in sensor data, and the corresponding displayed information.

Tip

You can control the filter by means of the **Sensor Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

### Parameters

**1 Off**

The **Sensor filter** is switched off.

**2 Weak**

The information from the last four sensor transmissions are averaged.

The default setting of the **Sensor filter** is *Weak*.

**3 Medium**

The information from the last eight sensor transmissions are averaged. This has proven to be a useful setting for trawlers.

**4 Strong**

The information from the last 16 sensor transmissions are averaged.

### Related topics

- *Operation menu; functions and dialog boxes* on page 176
- *Receiver dialog box* on page 206

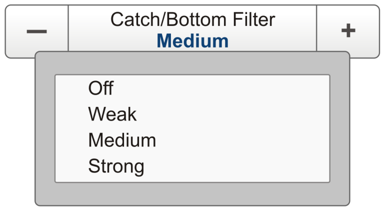
## Catch/Bottom Filter function

To use the **Catch/Bottom Filter**, click **Catch/Bottom Filter** on the **Operation** menu.


### Purpose

The **Catch/Bottom Filter** is used to restrict the change of state from the catch and bottom contact sensors. This will reduce jitter in the presentation.

## Description




When the filter is switched off any change in measurement status will immediately be shown on the display.

When set to *Weak* filtering, the change in status must last and remain stable for at least two sensor transmissions before the display is updated.

When *Strong* filtering is applied, the change in status must last and remain stable for at least eight sensor transmissions before the updated is shown on the PI50 display.

The **Catch/Bottom Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu.

The default setting of the **Catch/Bottom Filter** is *Weak*.

Tip

You can control the filter by means of the **Catch/Bottom Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

## Parameters

1 **Off**

The **Catch/Bottom Filter** is switched off.

2 **Weak**

The information provided from the catch and bottom contact sensors must be stable for at least two consecutive transmissions. If this is not the case, the information is not shown on the PI50 display.

The default setting of the **Catch/Bottom Filter** is *Weak*.

3 **Medium**

The information provided from the catch and bottom contact sensors must be stable for at least four consecutive transmissions. If this is not the case, the information is not shown on the PI50 display.

4 **Strong**

The information provided from the catch and bottom contact sensors must be stable for at least eight consecutive transmissions. If this is not the case, the information is not shown on the PI50 display.

## Related topics

- *Smoothing out the bottom and catch readings* on page 82
- *Operation menu; functions and dialog boxes* on page 176
- *Status Display dialog box* on page 185
- *Receiver dialog box* on page 206

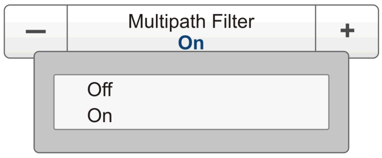
## Multipath Filter function

To use the **Multipath Filter**, click **Multipath Filter** on the **Operation** menu.


### Purpose

The **Multipath Filter** is designed to remedy for reflections, spikes and time-lag in the sensor data. These problems may occur if neighbouring channels are used, or if the PI50 is disturbed by other hydroacoustic systems in use on your own or other vessels.

### Description




The **Multipath Filter** can be switched on or off.

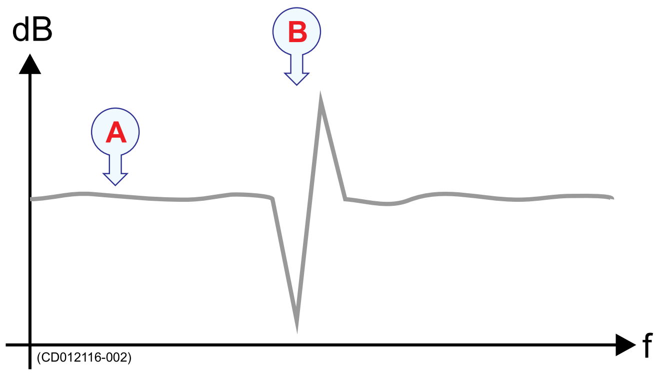
When you operate in areas with substantial reverberation due to the bottom conditions, or in shallow waters, you may experience "jumps" or spikes in the data received from the sensors.

Such errors can also be caused by other types of hydroacoustic equipment operating on the PI50 frequency range. This filter has been implemented to remedy for such interference problem as well.

The **Multipath Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu

Tip

We recommend that you switch this filter *On* if there are large fluctuations in the displayed data, or if the rate of change is small. No filtering is preferable if instantaneous readings are required, since this shortens the delay between updating the changes in sensor data, and the corresponding displayed information.




**A** *Stable data reading*

**B** *Spike caused by reflections, time-lag, reverberation or interference*

The default setting of the **Multipath Filter** is *On*.

Tip

You can control the filter by means of the **Multipath Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

### Parameters

**1 Multipath Filter**

This is an on/off switch.

### Related topics

- *Removing noise from the sensor data* on page 84
- *Operation menu; functions and dialog boxes* on page 176
- *Receiver dialog box* on page 206

## Reset Counters function

To use the **Reset Counters** function, click **Reset Counters** on the **Operation** menu.


### Purpose

The **Reset Counters** function allows you to reset the built-in timer function.

### Description

The catch and bottom contact sensor presentations both have a timer feature. Each timer indicates how many times the sensor has been activated during a tow. To reset the timers to zero -0- prior to a new tow, or during a tow, click this button once.

Note that you will not be asked for confirmation.

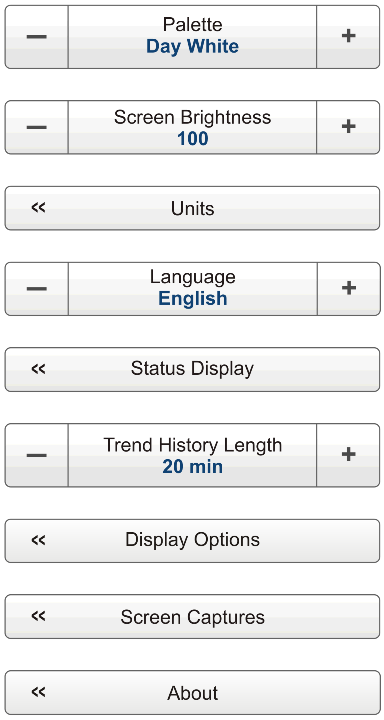
### Related topics

- *Operation menu; functions and dialog boxes* on page 176
- *Resetting the sensor counters* on page 97

# Display menu; functions and dialog boxes

The following functions and parameters are available from the **Display** menu.

Click once on the icon under the **Main** menu to open the **Display** menu. Click one more time on the icon to close the menu.




**1 Palette**

The purpose of the **Palette** function is to choose which colour theme to be used by the PI50 presentations.

→ *Palette function* on page 182

**2 Screen Brightness**

The purpose of the **Screen Brightness** function is to adjust the intensity of the light given off by the display.

→ *Screen Brightness function* on page 183

**3 Units**

The purpose of the **Units** dialog box is to control the units of measurements used by the PI50.

→ *Units dialog box* on page 183

**4 Language**

The purpose of the **Language** function is to select the language to be used on the menus and elsewhere in the graphical user interface.

→ *Language function* on page 184

**5 Status Display**

The **Status Display** dialog box provides an overview of the current hydro-acoustical conditions.

→ *Status Display dialog box* on page 185

**6 Trend History Length**

The **Trend History Length** function allows you to adjust the horizontal resolution of the *Trend* views.

→ *Trend History Length function* on page 190

**7 Display Options**

The purpose of the **Display Options** dialog box is to control the location of the menu, and which information to be provided on the **Title Bar** and the **Status bar**.

→ *Display Options dialog box* on page 190

**8 Screen Captures**

The **Screen Captures** function allows you to access the screen captures you have created using the **Screen Capture** button on the **Title Bar**.

→ *Screen Captures function* on page 193

**9 About**

The **About** dialog box allows you to see the current PI50 software version.

→ *About dialog box* on page 193

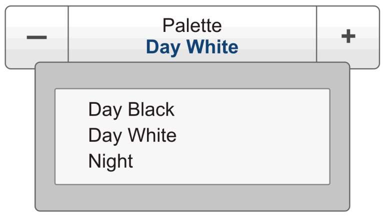
## Palette function

To change the **Palette**, click **Palette** on the **Display** menu.


### Purpose

The purpose of the **Palette** function is to choose which colour theme to be used by the PI50 presentations.

### Description




The **Palette** function provides you with options for the colour scheme used on the PI50 display presentation. Select the background colour and brightness to suit the ambient light conditions and your preferences.

The choice you make here does not have any effect on the PI50 performance.

Tip

To reduce the intensity of the display presentation, you can also try the **Screen Brightness** function.

---

### Parameters

**1 Palette**

The options are:

- Day White
- Day Black
- Night

### Related topics

- *Display menu; functions and dialog boxes* on page 181
- *Screen Brightness function* on page 183
- *Display Options dialog box* on page 190

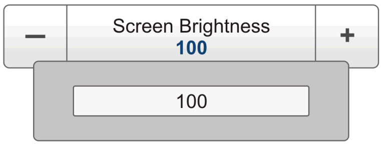
## Screen Brightness function

To change the **Screen Brightness**, click **Screen Brightness** on the **Display** menu.


### Purpose

The purpose of the **Screen Brightness** function is to adjust the intensity of the light given off by the display.

### Description




When the bridge is dark, the light emitted by the PI50 display can affect your night vision. In order to compensate for this, you can reduce the intensity. The **Screen Brightness** allows you to reduce the this brightness, and hence make the display darker.

The intensity of light emitted by the display can be reduced from 100% to 0% in steps of 10.

Tip

If you wish to adjust the colour intensity and/or colour scheme of the display presentation, you can also try the **Palette** function.

---

### Parameters

**1 Screen Brightness**

The intensity of light emitted by the display can be reduced from 100% to 0% in steps of 10.

### Related topics

- *Display menu; functions and dialog boxes* on page 181
- *Palette function* on page 182

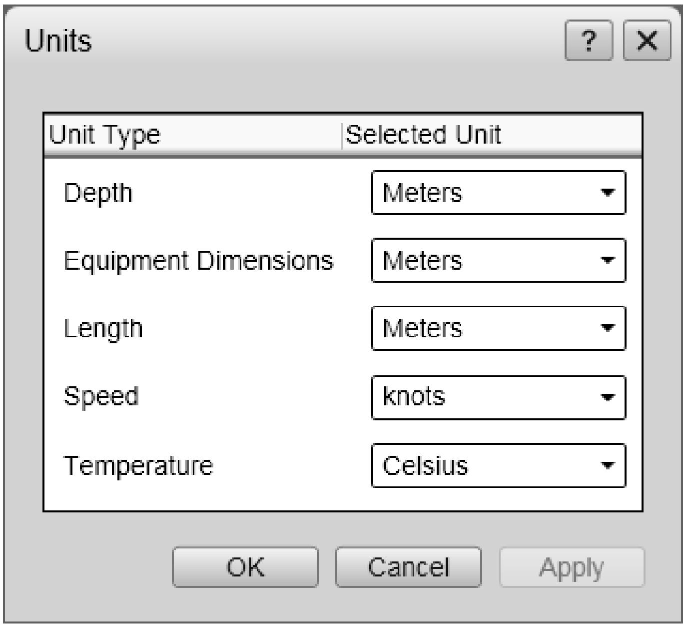
## Units dialog box

To open the **Units** dialog box, click **Units** on the **Display** menu.


### Purpose

The purpose of the **Units** dialog box is to control the units of measurements used by the PI50.

### Description




The PI50 is prepared to work with several standards for units of measurements.

Use the **Units** dialog box to set up the various units of measurements you wish to work with. The PI50 will use these in all presentations. Normally, you will only need to define these once.

### Parameters

1 **Depth**

Choose the unit of measurement for water depth.

2 **Equipment Dimensions**

Choose the unit of measurement for the equipment dimensions.

3 **Length**

The length type is used for all readouts such as cursor or range rings.

4 **Speed**

Choose the unit of measurement for the presentation of vessel speed.

5 **Temperature**

Choose the unit of measurement for water temperature.

### Related topics

• *Display menu; functions and dialog boxes* on page 181

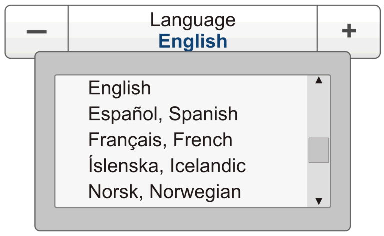
## Language function

The **Language** function is opened by clicking the **Language** button on the **Display** menu.


### Purpose

The purpose of the **Language** function is to select the language to be used on the menus and elsewhere in the graphical user interface.

### Description




The menu buttons on the PI50 can be provided in several different languages.

Use this function to select the language you wish to use. With a few exceptions, the chosen language will also be used for all other texts on the PI50.

**Important**

The PI50 on-line help may not be available for the language you choose. By default, the English version will then be shown.

---

### Parameters

**1 Language**

The chosen language will be used on menus and in dialog boxes, but not necessarily in the on-line help.

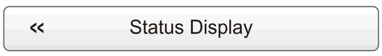
Be default, all languages are identified on the button in both English and the chosen language.

### Related topics

- *Display menu; functions and dialog boxes* on page 181

## Status Display dialog box

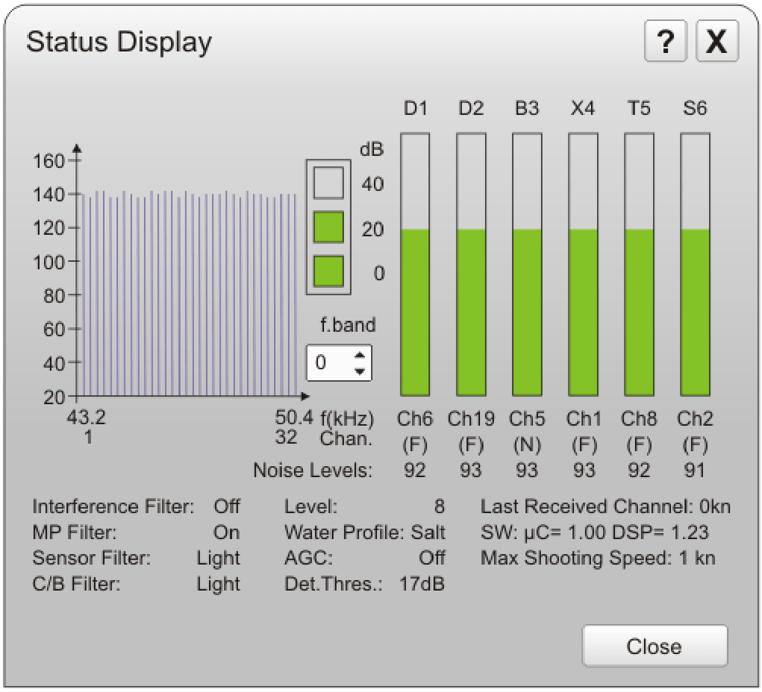
The **Status Display** dialog box is opened by clicking **Status Display** on the **Display** menu.




### Purpose

The **Status Display** dialog box provides an overview of the current hydro-acoustical conditions.

### Description




The **Status Display** dialog box shows sensor data, signal thresholds and background noise levels providing an overview of current hydro-acoustical conditions and the margin for reliable signal detection. Other information displayed includes cable status and software version. You can use the information provided by the **Status Display** dialog box to check the operational quality of the PI50 system.

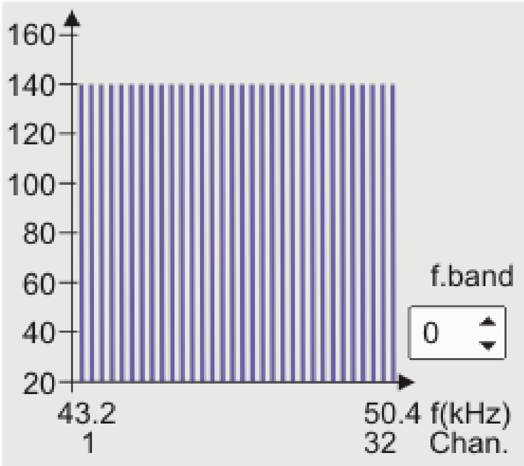
Note that some of the information provided by the **Status Display** dialog box assumes that you have the relevant sensors connected to, and operational on, your PI50 system.

### Related topics

- *Display menu; functions and dialog boxes* on page 181
- *Multipath Filter function* on page 179
- *Sensor Filter function* on page 176
- *Catch/Bottom Filter function* on page 177
- *Receiver dialog box* on page 206

## Status Display; Frequency spectrum

### Description




The **Frequency spectrum** graph provides you with information about the background noise and the signal strength of the frequency band or channel number selected. Each vertical bar represents the background noise for the given frequency or channel, and the level is measured continuously.

During normal operation, each frequency bar should indicate approximately 100 to 120 dB.

Note that the frequency spectrum presentation depends on the **Interference Filter** setting.

The **f.band** parameter is used to change the bandwidth in the graph. Set it to *0* to see the full bandwidth. Set it to any value between *1* and *15* to see the "sub-bandwidths". This provides a "zoom" effect.

Tip

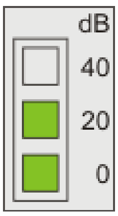
This function is very useful if you have too much noise and this makes the communication with the sensor unreliable. Switch off as much electrical, mechanical and acoustic gear and equipment as possible. Then, switch the systems on again one by one while keeping an eye on the frequency spectrum. When the "noisy" system is activated, it is most likely easy to see!

### Related topics

- *Display menu; functions and dialog boxes* on page 181
- *Multipath Filter function* on page 179
- *Sensor Filter function* on page 176
- *Catch/Bottom Filter function* on page 177
- *Receiver dialog box* on page 206

## Status Display; Manual Gain indicator

### Description




The gain indicator located in the middle of the **Status Display** dialog box visualises the receiver gain currently selected in the **Receiver** dialog box.

In the **Receiver** dialog box, the **Manual Gain** can be set to *Low*, *Medium* or *High*, which corresponds to 0, 20 and 40 dB.

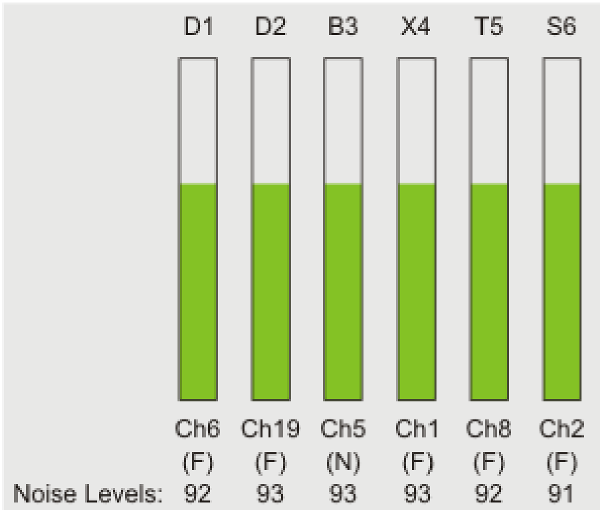
### Related topics

- *Display menu; functions and dialog boxes* on page 181

- *Multipath Filter function* on page 179
- *Sensor Filter function* on page 176
- *Catch/Bottom Filter function* on page 177
- *Receiver dialog box* on page 206

## Status Display; Sensor gain indicators

### Description




Depending on which Sensor Receiver you use, ,there are six or ten gain indicators, one for each of the current sensors.

At the top of each indicator you can see sensor number. At the bottom you can see the sensor's communication channel, the current update rate, and the noise level.

- Green colour indicates that the reception of signals and noise is within normal specifications.
- Red colour indicates that the received signal exceeds the minimum level required for reception, this is therefore not an error message.

For the technical minded: When no sensors have been deployed, the indicators will present the mean noise level. This is the noise in the surrounding water, caused by mechanical, electrical, acoustic and natural disturbances. This noise level should be as low as possible. When a sensor in the water transmits its information back to the PI50, this is indicated as the green indicator extends above the mean noise level. In order for the reception circuitry to accept and recognize the signal, it must be stronger than a predefined minimum level. The level is normally referred to as the "Detection Threshold Level". If the signal is stronger than the detection threshold level, the indicator bar will change colour to red.

### Related topics

- *Display menu; functions and dialog boxes* on page 181
- *Multipath Filter function* on page 179
- *Sensor Filter function* on page 176
- *Catch/Bottom Filter function* on page 177
- *Receiver dialog box* on page 206

## Status Display; Status field

### Description

The **Status field** provides an overview of key parameters. These parameters are all defined in the **Receiver** dialog available on the **Setup** menu. Some key filters are also available as separate functions.

### Parameters

1 **Interference Filter**

This is a presentation of the current setting of the Interference Filter.

2 **MP (Multipath) Filter**

This is a presentation of the current status of the filter. You can also set this filter level using the **Multipath Filter** button on the **Operation** menu.

3 **Sensor Filter**

This is a presentation of the current status of the filter. You can also set this filter level using the **Sensor Filter** button on the **Operation** menu.

4 **C/B (Catch/Bottom) Filter**

This is a presentation of the current status of the filter. You can also set this filter level using the **Catch/Bottom Filter** button on the **Operation** menu.

5 **Level**

This is a presentation of the current level of the Catch/Bottom Filter.

6 **Water Profile**

This is a presentation of the currently selected water profile (salt or fresh water).

7 **AGC**

This is a presentation of the currently selected AGC (Automatic Gain Control) setting.

8 **Det.Thresh.**

This is a presentation of the currently selected **Detection Threshold** level.

9 **Last Received Channel**

This entry shows you which of the sensors that last provided information to the PI50.

10 **SW**

This is a presentation of the software versions currently in use in the PI50 receiver.

**µC** is the software version in the micro-controller.

**DSP** is the software version in the digital signal processor.

11 **Max. Shooting Speed**

This is a presentation of the currently selected setting for maximum shooting speed.

### Related topics


- *Display menu; functions and dialog boxes* on page 181
- *Multipath Filter function* on page 179
- *Sensor Filter function* on page 176

- *Catch/Bottom Filter function* on page 177
- *Receiver dialog box* on page 206

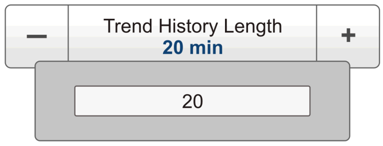
## Trend History Length function

To change the **Trend History Length**, click **Trend History Length** on the **Display** menu.


### Purpose

The **Trend History Length** function allows you to adjust the horizontal resolution of the *Trend* views.

### Description




The **Trend History Length** parameter controls the horizontal resolution of the history fields. The value is given in minutes, and you can select any value between 5 and 1440 minutes (24 hours).

If you try to enter a larger or smaller value, the text border will be red, and you will not be permitted to enter the value.

To change the horizontal resolution, click either side of the button, or on the middle to open a text field. If you have a keyboard connected to the PI50 computer, you can enter the requested value directly, and press the **Enter** key.

### Parameters

**1 Trend History Length**

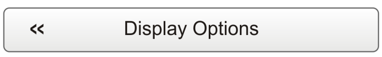
Choose a value between 5 and 1440 minutes (24 hours).

### Related topics

- *Trend view descriptions* on page 151
- *Display menu; functions and dialog boxes* on page 181

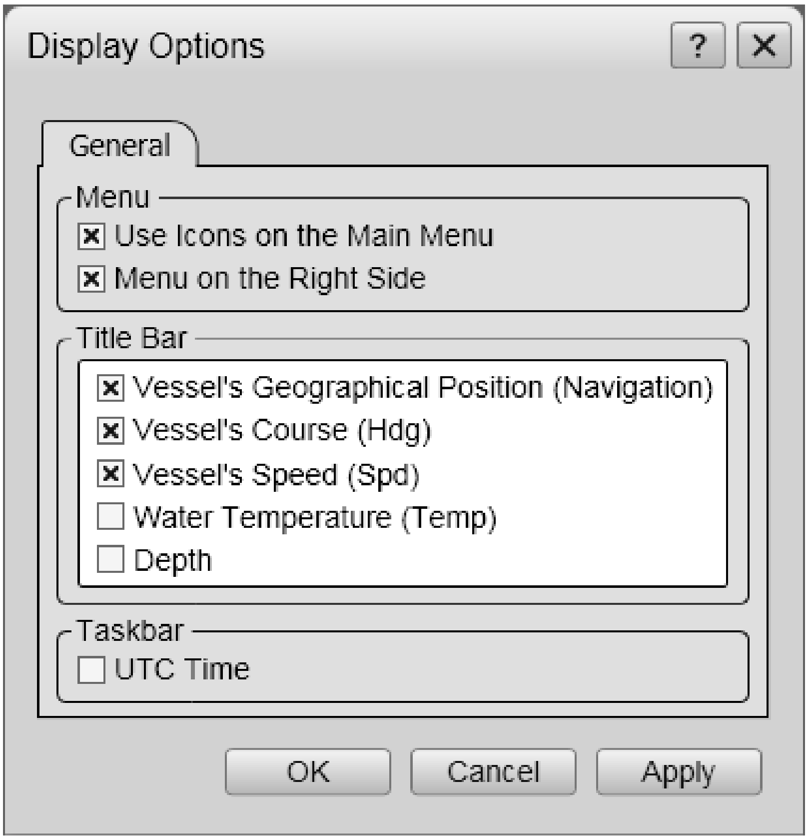
## Display Options dialog box

To use the **Display Options** functionality, click **Display Options** on the **Display** menu.




### Purpose

The purpose of the **Display Options** dialog box is to control the location of the menu, and which information to be provided on the **Title Bar** and the **Status bar**.




## Description

The **Display Options** dialog box provides three fields to control the appearance of the **Main** menu buttons (with or without icons), the location of the menu system (left or right side), and which information that shall be displayed on the **Title Bar**.

The settings you choose have no effect on the overall performance of the PI50.

## Parameters

**1 Use Icons on the Main Menu**

This option allows you to choose between text and icons on the **Main** menu buttons.

**2 Menu on the Right Side**

Click this option to place the menu on the right hand side of the display presentation.

**3 Navigation**

Click this option to display the current **Geographical position** on the **Title Bar**.


The information must be provided by an external navigation system connected to the PI50.

Note

*The navigational information provided on the PI50* ***Title Bar*** *must not be used for vessel navigation!*

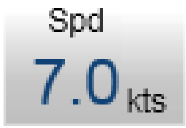
**4 Course**

Click this option to display the vessel's current **Heading** on the **Title Bar**.


The information must be provided by an external course gyro or a navigation system connected to the PI50.

**5 Speed**

Click this option to display the current **Speed** on the **Title Bar**.




The information must be provided by an external speed log or a navigation system connected to the PI50.

**6 Water Temperature**

Click this option to display the current water temperature on the **Title Bar**.


The information must be provided by an external sensor connected to the PI50.

**7 Echo Sounder Depth**

Click this option to display the **Bottom Depth** on the **Title Bar**.


The information must be provided by an external echo sounder connected to the PI50.

**8 UTC Time**

Click this option to see UTC time at the bottom right corner of the display presentation.

> Coordinated Universal Time (UTC) is a time standard based on International Atomic Time (TAI) with leap seconds added at irregular intervals to compensate for the Earth's slowing rotation. Leap seconds are used to allow UTC to closely track UT1, which is mean solar time at the Royal Observatory, Greenwich. The difference between UTC and UT1 is not allowed to exceed 0.9 seconds, so if high precision is not required the general term Universal Time (UT) may be used. In casual use, Greenwich Mean Time (GMT) can be considered equivalent to UTC or UT1 when fractions of a second are not important.
>
> — *Wikipedia, October 2009*

## Related topics

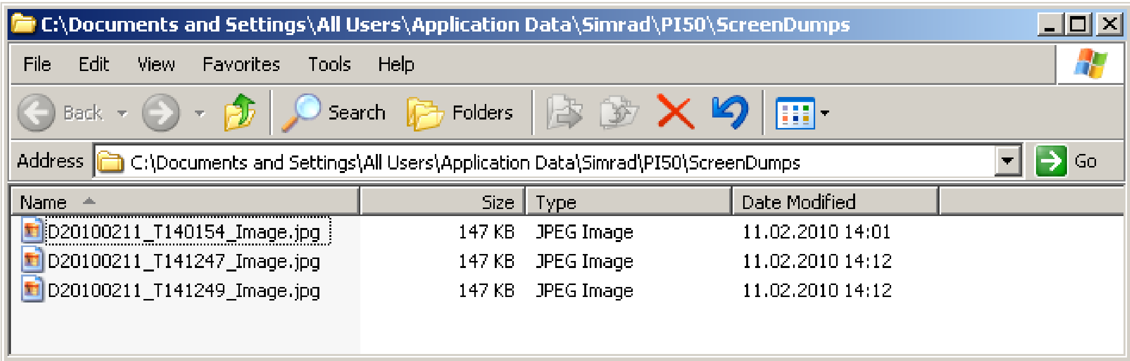
- *Display menu* on page 166

## Screen Captures function

To use the **Screen Captures** function, click **Screen Captures** on the **Display** menu.


### Purpose

The **Screen Captures** function allows you to access the screen captures you have created using the **Screen Capture** button on the **Title Bar**.




### Description

Every time you click the **Screen Capture** icon on the **Title Bar**, a copy of the entire current PI50 presentation is saved as a JPG file on the hard disk. When you click the **Screen Captures** button, an operating system window opens to access the file folder with these files.

Within this window, you can use the operating system functionality to delete, copy, or rename these file.

Note

*You can only rename files if you have a keyboard connected to your PI50 computer.*

### Related procedures

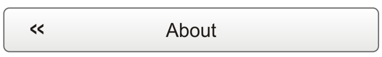
- *Accessing the log files to copy and/or delete them* on page 94

### Related topics

- *Display menu; functions and dialog boxes* on page 181

## About dialog box

The **About** dialog box is opened from the **About** button on the **Display** menu.



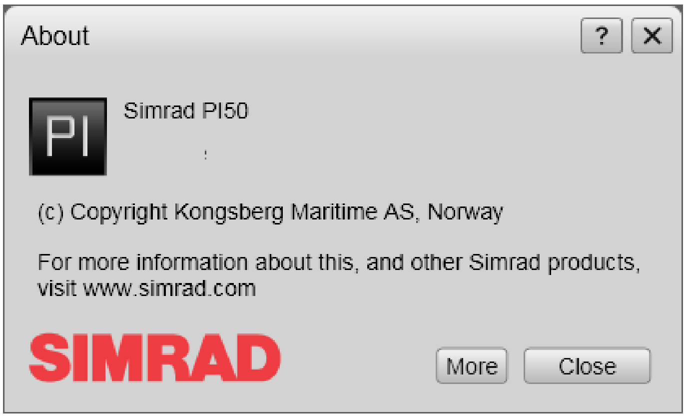

### Purpose

The **About** dialog box allows you to see the current PI50 software version.

### Description

Every PI50 software release is uniquely identified. The **About** dialog box identifies the PI50 software release with the version and the release date.

The **More** button in the dialog box provides access to a separate list of all the PI50 software modules and their versions. This information is not intended for operational use.




### Parameters

**1 Software version**

This is the current software version of the PI50 running on your computer.

Note that the software versions for the PI50 receiver (micro-controller and digital signal processor) are shown in the **Status Display** dialog box.

**2 Release**

This is the date the software version was released.

**3 More**

This option opens a dedicated dialog box to investigate the software versions of the various modules used by the PI50 application. The information is only provided for maintenance and software debugging purposes.

The information provided in this dialog box is not described in this manual.

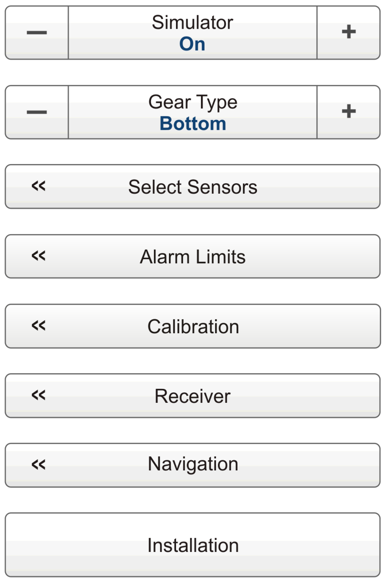
### Related topics

- *Display menu; functions and dialog boxes* on page 181
- *Status Display dialog box* on page 185

# Setup menu; functions and dialog boxes

The following functions and parameters are available from the **Setup** menu.

Click once on the icon under the **Main** menu to open the **Setup** menu. Click one more time on the icon to close the menu.




**1 Simulator**

The **Simulator** will provide artificial sensor data to support hands-on PI50 training and functional testing.

→ *Simulator function* on page 196

**2 Gear Type**

The **Gear Type** function allows you to set up the PI50 to work with either a pelagic or a bottom trawl. The function is only used with Bottom Contact sensors.

→ *Gear Type function* on page 196

**3 Select Sensors**

The **Select Sensors** dialog box allows you to define which sensors you will use to monitor your gear.

→ *Select Sensors dialog box* on page 197

**4 Alarm Limits**

The **Alarm Limits** dialog box allows you to define alarms related to the information provided by the relevant catch monitoring sensors.

→ *Alarm Limits dialog box* on page 204

**5 Calibration**

The purpose of the **Calibration** dialog box is to accept and apply the calibration information from the depth sensor calibration.

→ *Calibration function* on page 205

**6 Receiver**

The **Receiver** dialog box allows you to set up the detailed communication parameters. It provides parameters to "fine tune" the receiver circuitry for optimal performance in various sea conditions, and for various gear types.

→ *Receiver dialog box* on page 206

**7 Navigation**

The **Navigation** dialog box controls how the PI50 receives information from external peripherals, such as navigation and gyro compass systems.

→ *Navigation dialog box* on page 211

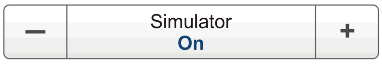
**8 Installation**

The **Installation** function opens a small submenu with access to the functions and dialog boxes required to set up the PI50 for operational use.

→ *Installation menu* on page 220

## Simulator function

The **Simulator** is started by clicking **Simulator** on the **Setup** menu.




### Purpose

The **Simulator** will provide artificial sensor data to support hands-on PI50 training and functional testing.

### Description

The PI50 offers a built-in simulator that will create artificial sensor data. It will create this data to match any sensor configuration. The feature is useful for system testing and familiarization.

Default setting for the built-in simulator is *Off*.

In order to start the simulator, click the right side (+), or on the middle of the button, and click **On**.

Note

*When the built-in simulator is switched on, the PI50 will not read any data from the sensors. The simulator must therefore not be used during trawling or seining with sensors in the water.*

---

### Related topics

• *Setup menu; functions and dialog boxes* on page 195

## Gear Type function

To use the **Gear Type** function, click **Gear Type** on the **Setup** menu.


### Purpose

The **Gear Type** function allows you to set up the PI50 to work with either a pelagic or a bottom trawl. The function is only used with Bottom Contact sensors.


### Description

This parameter is only used to set the alarm system to detect the activation of the Bottom Contact sensor.

- When set to *Pelagic*, the alarm will be triggered when the Bottom Contact sensor is disengaged, as this means that the footrope hits the bottom.
- When set to *Bottom*, the alarm will be triggered when the Bottom Contact sensor is engaged, as this means that the footrope lifts up from the bottom.

In order to select gear, click either side of the button, or on the middle of the button to select from the submenu.

### Parameters

**1 Bottom**

The Bottom Contact alarm will be triggered when the sensor is engaged.

**2 Pelagic**

The Bottom Contact alarm will be triggered when the sensor is disengaged.

### Related topics

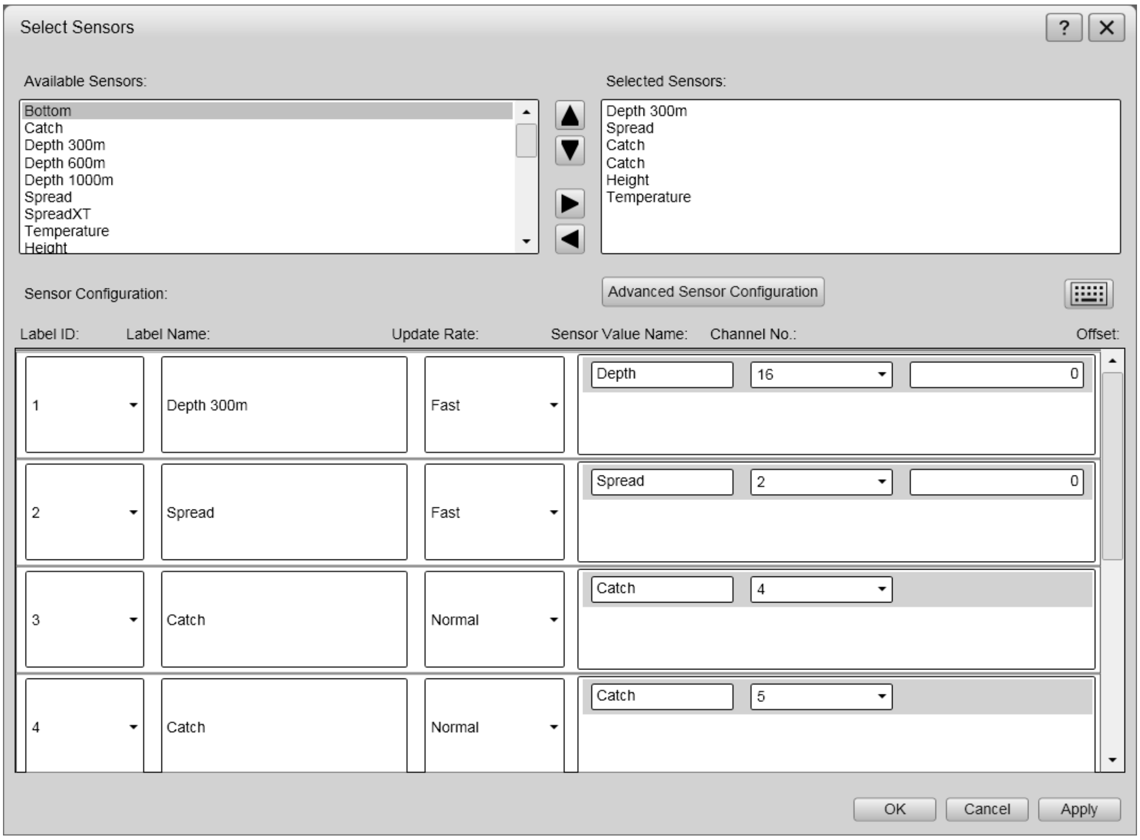
- *Setup menu; functions and dialog boxes* on page 195

## Select Sensors dialog box

The **Select Sensors** dialog box is opened by clicking **Select Sensors** on the **Setup** menu.


### Purpose

The **Select Sensors** dialog box allows you to define which sensors you will use to monitor your gear.




## Description

A large range of different catch monitoring sensors may be used with the PI50 system, but only a limited number of sensors may provide data simultaneously. The **Select Sensors** dialog box is used to select which sensors to use, define the frequency channels you wish to receive the information on, and how often this information shall be received (update rate).

**Note**

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

The **Select Sensors** dialog box is divided into several functional parts:

1. **Available Sensors**: This part lists all sensors.
2. **Selected Sensors**: This part lists all the sensors that you have selected for use on the gear.

3 **Sensor Configuration**: This part allows you to set up the sensor parameters for use. Two modes are available.

- *Standard mode*
- *Advanced mode*

### Topics


- *Select Sensors; Available Sensors* on page 199
- *Select Sensors; Selected Sensors* on page 199
- *Select Sensors; Sensor Configuration* on page 200
- *Select Sensors; Advanced Sensor Configuration* on page 203


### Related topics


- *Calibration of the depth sensors* on page 35


## Select Sensors; Available Sensors

### Description

The top left part of the **Select Sensors** dialog box lists all the available measurements. The measurements made by the catch monitoring sensors are listed independent of sensor types.

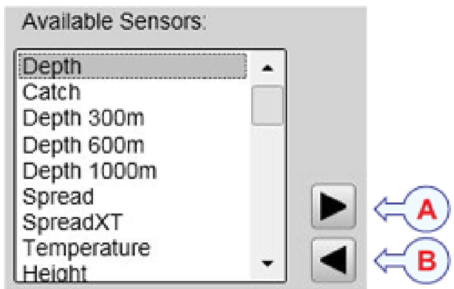
Note

*If new measurements or specific catch monitoring sensors are added to the product range, you may need to upgrade the PI50 software to use them.*

To add a sensor to the **Selected Sensors** list, click on it, and then click the "right arrow" button. The same sensor will automatically be added to the **Sensor Configuration** list.

**A** *Click once to select a sensor/measurement in the list. Then, click this arrow button to move the selected item to the* ***Selected Sensors*** *list.*

**B** *Click once to select a sensor/measurement in the* ***Selected Sensors*** *list. Then, click this arrow button to remove the selected item from the* ***Selected Sensors*** *list.*




## Select Sensors; Selected Sensors

### Description

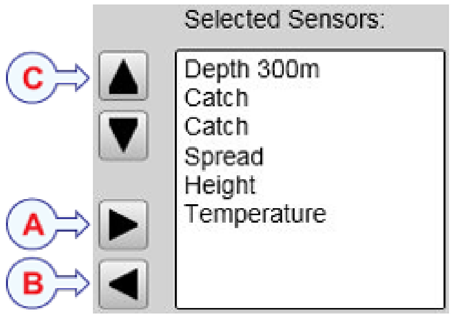
The top right part of the **Select Sensors** dialog box lists all the sensors currently selected for use by the PI50 system. The order of the sensors in the **Selected Sensors** list is automatically reflected into the **Sensor Configuration** list.

Tip

- To delete a sensor from the **Selected Sensors** list, click on it, and then click the “left arrow” button.

  The same sensor will automatically be deleted from the **Sensor Configuration** list.
- To change the order of the sensors inside the **Selected Sensors** list, click on a sensor, and then click either the “up arrow” or the “down arrow” button.

  When the arrow is moved up or down the **Selected Sensors** list, it is also moved accordingly in the **Sensor Configuration** list, and in the list of sensor views.




**A** *Click once to select a sensor/measurement in the **Available Sensors** list. Then, click this arrow button to move the selected item to the **Selected Sensors** list.*

**B** *Click once to select a sensor/measurement in the **Selected Sensors** list. Then, click this arrow button to remove the selected item from the list.*

**C** *Click once to select a sensor/measurement in the **Selected Sensors** list. Then, click these “up” or “down” arrows to change its order in the list. The same order is reflected in the **Sensor Configuration** list, and in the Sensor views.*

## Select Sensors; Sensor Configuration

### Description

The whole bottom part of the **Select Sensors** dialog box is used to define the sensor parameters. Two modes of configuration are available.

- *Standard mode*
- *Advanced mode*

By default, the *Standard mode* is shown. To access the advanced mode, click the **Advanced Sensor Configuration** button.

Note

*All parameters must be set up individually for each sensor in use.*

Tip

If you have several sensor configurations dedicated for different gears or different tasks, we strongly recommend that you save these for future use. Use the **User Settings** dialog box on the **Main** menu.

## Parameters

**1 Label ID**

This number is used to identify the catch monitoring sensor.

The **Label ID** must be unique for each sensor, and we recommend that you let it match the physical label placed on the sensor. The number you choose will be used in the *Sensor* view.

Tip

The *order* in which the *Sensor* views are presented is defined by the order in the **Selected Sensors** list.

---

**2 Label Name**

By default, the **Label Name** is the same as the sensor name listed with the **Available sensors**.

Click in the field to enter another name.

The **Label Name** is only shown in this dialog box, and you can use it to distingush between otherwise identical sensors in the **Selected Sensors** list.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

**3 Update Rate**

This parameter is used to select the sensor's update rate. This is how often the PI50 can expect to receive information from the sensor.

The default update rates for the various sensors are listed in chapter *About catch monitoring sensors* on page 241, see *Default communication channels and update rates* on page 274.

Important

The Simrad PX MultiSensor is permanently set to *Normal* update rate.

---

To change the update rate for a PI sensor, use the **PI Configurator** program.

Note

*The **Update Rate** parameter is vital. The update rate you choose here must comply to the update rate programmed into the sensor. If these do not match, the communication will not work.*

*If you use the PX MultiSensor, the **Update Rate** is fixed, and you must always choose Normal update rate.*

---

**4 Sensor Value Name**

By default, the **Sensor Value Name** is the same as the sensor name listed in the **Available Sensors** list. If you have a keyboard connected to the PI50 computer, you can click in the field, and enter another name. You can also open the on-screen keyboard.

The **Sensor Value Name** is used in the *Sensor* views. If you are setting up a dual sensor, you can enter two different names, for example "Port door" and "Starboard door".

*Example 9 Sensor Value Name*

If you have three catch sensors on your trawl, you can name them "20 Ton", "40 Ton" and "60 Ton".

**5 Channel Number**

This is the communication channel used between the catch monitoring sensor and the PI50 system.

If you use more than one sensors of the same type at the same time, the channel number of one of the sensors must be changed to make it unique for the sensor. This must be changed both in the actual sensor, and in the **Select Sensors** dialog box during configuration.

The default communication channels for the various sensors are listed in chapter *About catch monitoring sensors* on page 241, see *Default communication channels and update rates* on page 274.

To change the channel number in the sensor, use either the **PI Configurator** or the **PX Configurator** program.

Note

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

**6 Offset**

Sensors measuring spread and depth can have an offset value.

The offset value for the depth sensors are determined during calibration.

The offset value for the spread sensor must be entered manually based on your knowledge about the physical locations of the sensors and the properties of the gear.

### Related topics

- *Generic procedure for sensor and measurement selection* on page 52
- *Selecting a sensor for bottom contact measurement* on page 56
- *Selecting a sensor for catch measurement* on page 57
- *Selecting a sensor for depth measurement* on page 59

- *Selecting a sensor for height measurement* on page 62
- *Selecting a sensor for spread measurement* on page 64
- *Selecting a sensor for twin spread measurement* on page 66
- *Selecting a sensor for temperature measurement* on page 68
- *Selecting a sensor for geometry measurement* on page 70
- *Selecting a sensor for roll angle measurement* on page 73
- *Selecting a sensor for pitch angle measurement* on page 75
- *Selecting a dual sensor for height and depth measurements* on page 76
- *Selecting a dual sensor for spread and depth measurements* on page 78


## Select Sensors; Advanced Sensor Configuration

### Description

To access the advanced configuration mode, click the **Advanced Sensor Configuration** button. Certain sensor parameters will be expanded to add additional information.

### Parameters

1 **Height measurements**

You can enter the height of the trawl opening. This will allow the PI50 system to draw the size of the trawl opening.

2 **Depth measurements**

You can add the information from the height sensor to the information from a depth sensor. This will allow the PI50 system to calculate the total water depth. Naturally, this depth will only be correct if the two sensors are mounted next to each other on the gear.

3 **Spread measurements**

You can connect the spread sensor to a depth sensor mounted on the starboard and/or port trawl door. If you have a depth sensor located on each trawl door, this will provide you with the vertical geometry, that is the difference in depth between the trawl doors.

4 **Spread/Depth measurements**

You can connect a second depth sensor mounted on the other door to obtain the same functionality as with a spread/depth combination.

### Related topics


- *'Depth' trend view description* on page 152
- *'Height' trend view description* on page 153
- *'Vertical geometry' sensor view description* on page 129
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Setting up the height sensor to show the trawl opening* on page 87

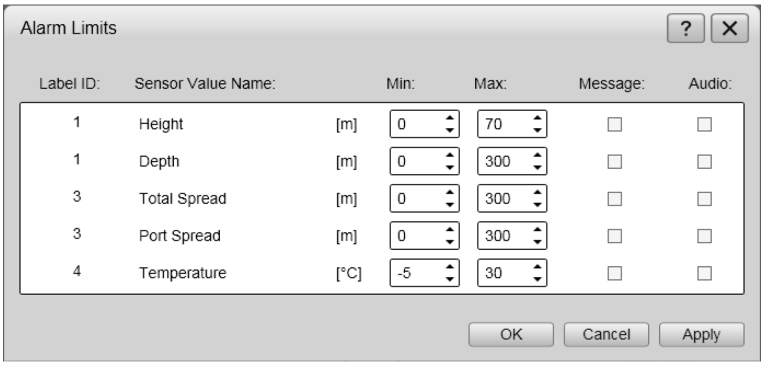
# Alarm Limits dialog box

The **Alarm Limits** dialog box is opened by clicking the **Alarm Limits** button on the **Setup** menu.


## Purpose

The **Alarm Limits** dialog box allows you to define alarms related to the information provided by the relevant catch monitoring sensors.

## Description




The **Alarm Limits** dialog box is dynamic.

It will list the sensors that you are currently using on your PI50 system. The sensors listed will thus automatically change to suit your individual configuration established in the **Select Sensors** dialog box.

Each measurement has an individual alarm setting. To enable an alarm, you must define minimum and maximum limits within the sensor's range, and enable message and/or audio notification.

If the alarm is triggered, an audible signal may thus be provided, and/or you will receive a message indicating which sensor that caused the alarm.

Once an alarm has been triggered, it is automatically disabled after 20 seconds. After this time it may be triggered again unless the alarm situation has been rectified, or you have disabled the alarm.

The bottom contact and catch sensors can only provide alarms when they are activated.

The alarm settings you specify are automatically saved for the current session. If you also wish to keep them for future use – with the sensor configuration you have specified – click the **User Setting** button to save.

Tip

In order to hear an audible alarm, you must either place the PI50 computer in a position where the internal loudspeaker can be heard, or you must install a separate loudspeaker system.

## Parameters

**1 Label ID**

This is the identification number provided in the **Select Sensors** dialog box.

**2 Sensor Value Name**

This is the sensor name that you entered in the **Select Sensors** dialog box to identify the sensor.

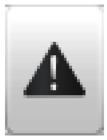
The current unit of measure is shown after the sensor name.

**3 Min/Max**

Minimum and maximum alarm limits.

These parameters are only provided for sensors that offer such measurements. To change the values, use the spin boxes provided.

**4 Message**



Click to enable a message when the alarm is triggered.

The message is posted in the **Message** dialog. When a new message is generated by the PI50, the **Message** icon on the **Title bar** will change its colour.

**5 Audio**

Click to enable an audible warning in addition to the visual message.

Tip

In order to hear an audible alarm, you must either place the PI50 computer in a position where the internal loudspeaker can be heard, or you must install a separate loudspeaker system.

### Related topics

- *User Settings dialog box* on page 170
- *Select Sensors dialog box* on page 197
- *Messages dialog box* on page 238

## Calibration function

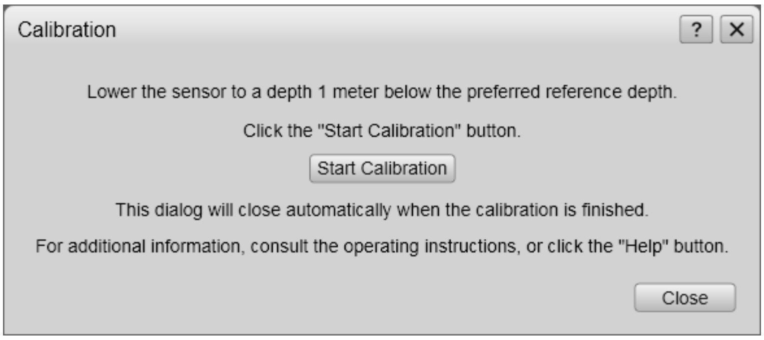
The **Calibration** dialog box is opened by clicking **Calibration** on the **Active** menu.


### Purpose

The purpose of the **Calibration** dialog box is to accept and apply the calibration information from the depth sensor calibration.

### Description

In order to provide correct results, the PI50 must be calibrated. This is required to obtain data that can be used for scientific purposes. A dedicated procedure is provided to do this calibration.




### Related topics

- *Setup menu; functions and dialog boxes* on page 195

## Receiver dialog box

The **Receiver** dialog box is opened by clicking **Receiver** on the **Setup** menu.


### Purpose

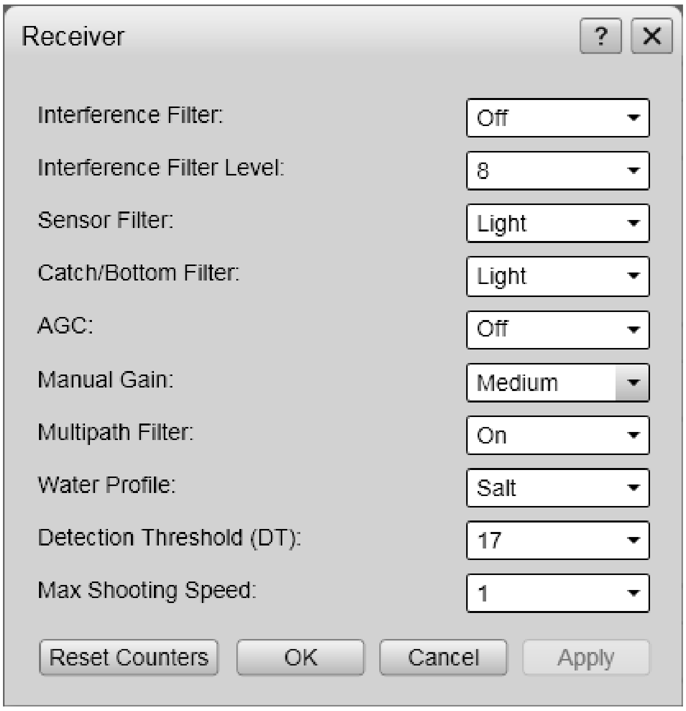
The **Receiver** dialog box allows you to set up the detailed communication parameters. It provides parameters to “fine tune” the receiver circuitry for optimal performance in various sea conditions, and for various gear types.

### Description

These parameters in the **Receiver** dialog box are used to establish the communication between the PI50 and the sensors.

The **Receiver** parameters have a major influence on the PI50 performance. The default settings are those we have found to be the best for general use, but for individual installations other specific settings may enhance the performance.

A selection of the key parameters may also be controlled from the **Operation** menu.



## Parameters

1 **Interference filter**

When the interference filter is switched on it will remove interference (noise and false echoes) from other echo sounders and sonars in the vicinity of your own vessel. Use this option to switch the filter on or off.

Tip

The current filter status can be monitored in the **Status Display** dialog box.

---

The default setting of the **Interference filter** is *Off* with a level set to *8*.

2 **Interference filter level**

This parameter controls the filter strength.

Tip

The filter level can be monitored in the **Status Display** dialog box.

---

The default setting of the **Interference filter** is *Off* with a level set to *8*.

3 **Sensor filter**

The **Sensor Filter** can be used if you have problems with the reception. It will average the data received from the sensors.

The PI50 is designed to quickly update data.

After the sensors have been submerged, the receiver requires only three consecutive pings from individual sensors to calculate and display their respective information. However, if you experience problems with the reception, you may try this filter.

The **Sensor Filter** offers four different settings. *Weak* filtering will average the data received by the last four sensor transmissions, while *Strong* filtering averages the data received by the last 16 transmissions.

The **Sensor Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu.

The default setting of the **Sensor filter** is *Weak*.

The parameters are:

a **Off**

The **Sensor filter** is switched off.

b **Weak**

The information from the last four sensor transmissions are averaged.

The default setting of the **Sensor filter** is *Weak*.

c **Medium**

The information from the last eight sensor transmissions are averaged. This has proven to be a useful setting for trawlers.

**d Strong**

The information from the last 16 sensor transmissions are averaged.

Tip

You can control the filter by means of the **Sensor Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

---

**4 Catch/Bottom Filter**

The **Catch/Bottom Filter** is used to restrict the change of state from the catch and bottom contact sensors. This will reduce jitter in the presentation.

When the filter is switched off any change in measurement status will immediately be shown on the display.

When set to *Weak* filtering, the change in status must last and remain stable for at least two sensor transmissions before the display is updated.

When *Strong* filtering is applied, the change in status must last and remain stable for at least eight sensor transmissions before the updated is shown on the PI50 display.

The **Catch/Bottom Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu.

The default setting of the **Catch/Bottom Filter** is *Weak*.

The parameters are:

**a Off**

The **Catch/Bottom Filter** is switched off.

**b Weak**

The information provided from the catch and bottom contact sensors must be stable for at least two consecutive transmissions. If this is not the case, the information is not shown on the PI50 display.

The default setting of the **Catch/Bottom Filter** is *Weak*.

**c Medium**

The information provided from the catch and bottom contact sensors must be stable for at least four consecutive transmissions. If this is not the case, the information is not shown on the PI50 display.

**d Strong**

The information provided from the catch and bottom contact sensors must be stable for at least eight consecutive transmissions. If this is not the case, the information is not shown on the PI50 display.

Tip

You can control the filter by means of the **Catch/Bottom Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

---

**5 AGC**

This is the automatic gain control.

During normal operation, *Off* is the recommended (and default) setting.

**6 Manual gain**

If you decide to switch the AGC off you must set the gain manually.

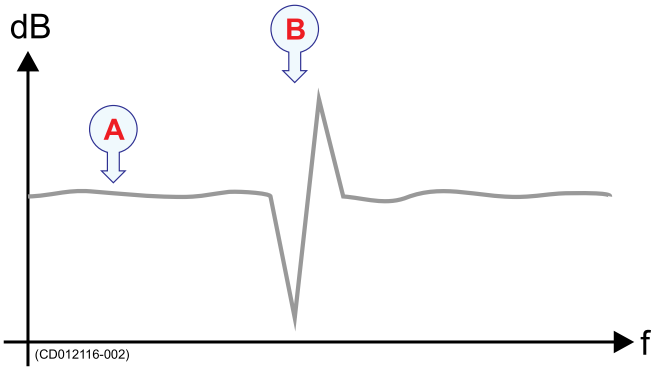
The default and recommended setting is *Medium*.

**7 Multipath filter**

The **Multipath Filter** is designed to remedy for reflections, spikes and time-lag in the sensor data. These problems may occur if neighbouring channels are used, or if the PI50 is disturbed by other hydroacoustic systems in use on your own or other vessels.

The **Multipath Filter** can be switched on or off.

When you operate in areas with substantial reverberation due to the bottom conditions, or in shallow waters, you may experience "jumps" or spikes in the data received from the sensors.




**a** *Stable data reading*

**b** *Spike caused by reflections, time-lag, reverberation or interference*

Such errors can also be caused by other types of hydroacoustic equipment operating on the PI50 frequency range. This filter has been implemented to remedy for such interference problem as well.

The **Multipath Filter** level can be monitored in the **Status Display** dialog box on the **Display** menu

The default setting of the **Multipath Filter** is *On*.

The parameters are:

**a Multipath Filter**

This is an on/off switch.

Tip

We recommend that you switch this filter *On* if there are large fluctuations in the displayed data, or if the rate of change is small. No filtering is preferable if instantaneous readings are required, since this shortens the delay between updating the changes in sensor data, and the corresponding displayed information.

Tip

You can control the filter by means of the **Multipath Filter** button on the **Operation** menu, or in the **Receiver** dialog box on the **Setup** menu.

---

**8 Water profile**

This parameter sets up the PI50 for operation in fresh or salt water.

The current profile can be monitored in the **Status Display** dialog box. The default setting is *Salt*.

**9 Detection Threshold (DT)**

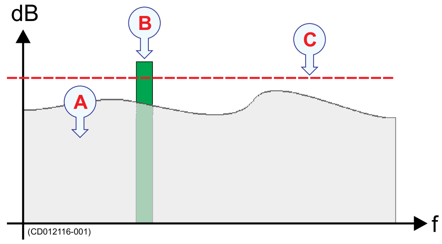
This parameter is used to control the threshold level for detection of signals.

Signals below the threshold level will not be detected, while signals above the threshold will be detected. If threshold level too low this may cause false signals to be detected.

Sensor signals below the threshold level will not be detected by the PI50, while signals above the threshold will be detected. If the threshold level is set too low, the sensor signal will be buried in the noise, and this may cause false signals to be detected.

If the detection threshold is set too high, the signal from the sensor will not be detected.

For PI50 two different parameter ranges are used:




**a** *Noise*

**b** *Signal from sensor*

**c** *Detection threshold*

- **3 to 14**: By increasing the parameter value, the threshold level is increased.

  This range should normally not be used for PI50.

  During special operations where extreme range is required, and the interference sources are minor, the parameter may be set to 8. If interference is present, the parameter can by increased up to maximum 14.

- **15 to 20**: By increasing the parameter value, the threshold level is decreased.

  This is the main parameter range to be used with the PI50.

The default value for **Detection Threshold (DT)** is *17*.

Tip

The current detection threshold can be monitored in the **Status Display** dialog box.

---

**10 Max shooting speed**

The PI50 has a built in Doppler compensation function which is set up using this parameter. The parameter and related function is however only relevant if sensor data is desired while the purse seine or trawl is being deployed. It has no effect once the vessel is stopped waiting for the net or trawl to sink.

Note that if you set this parameter too high, you can create a conflict with the channel selection.

Default value is *5 knots*.

**11 Reset counters**

The **Reset Counters** function allows you to reset the built-in timer function.

The catch and bottom contact sensor presentations both have a timer feature. Each timer indicates how many times the sensor has been activated during a tow. To reset the timers to zero -0- prior to a new tow, or during a tow, click this button once.

Note that you will not be asked for confirmation.

### Related procedures

- *Smoothing out the bottom and catch readings* on page 82
- *Improving the data reception* on page 83
- *Adjusting the receiver sensitivity* on page 89
- *Suppressing interference* on page 90

### Related topics

- *Sensor Filter function* on page 176
- *Catch/Bottom Filter function* on page 177
- *Multipath Filter function* on page 179
- *Status Display dialog box* on page 185

## Navigation dialog box

To open the **Navigation** dialog box, click **Navigation** on the **Setup** menu.


### Purpose

The **Navigation** dialog box controls how the PI50 receives information from external peripherals, such as navigation and gyro compass systems.

### Description

Several external sensors (GPS navigation, gyro compass etc.) can be connected to the PI50 to provide information about the vessel's speed, position, heading and sailed distance. The PI50 must be set up to receive this information. The interface ports must be defined, and the format of the information must be selected. The **Navigation** dialog box provides dedicated tabs to set up these parameters.

1 **Position**

The parameters on this **Position** tab allows you to control the interface with external positioning sensors.

2 **Speed**

The parameters on this **Speed** tab allows you to control the interface with external speed sensors or set a manual speed.

3 **Distance**

The parameters on this **Distance** tab allows you to control the interface with external distance sensors.

4 **Heading**

The parameters on this **Heading** tab allows you to control the interface with external heading sensors or set a manual heading.

### Related topics

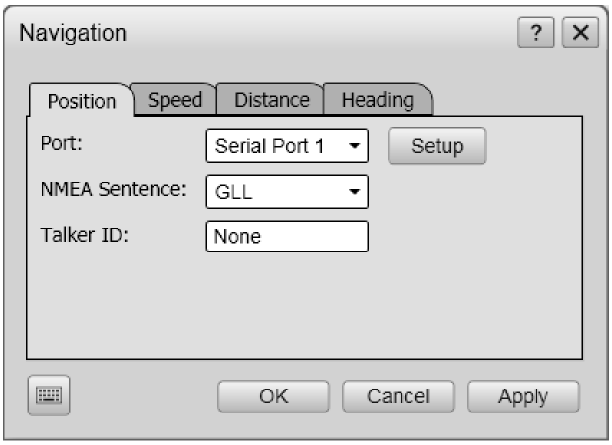

- *External interface procedures* on page 104
- *Setup menu; functions and dialog boxes* on page 195
- *LAN Port Setup dialog box* on page 229
- *Serial Port Setup dialog box* on page 232
- *About the NMEA telegram format* on page 294
- *Telegram formats* on page 293


## Navigation dialog box; Position tab

### Purpose

The parameters on this **Position** tab allows you to control the interface with external positioning sensors.

### Description




These external positioning sensors are typically global positioning systems (GPS). They provide their data on a serial line, or by means of the local area network.

The information from the GPS system provides the position information on the PI50 **Title bar**.

### Parameters

1 **Port**

Select which serial or Ethernet port to use for this communication.

2 **Setup**

Once you have selected a serial or Ethernet communication port, click this button to set up the applicable port parameters. The relevant port setup dialog box opens.

**3 NMEA Sentence**

Select which NMEA sentence to be used for the communication.

**a Auto**

The PI50 will read all relevant telegrams. If the specified information is provided to the system on more than one telegram format, a built-in priority list will be used.

**b GGA**

This telegram contains time, position and fix related data from a global positioning system (GPS).

→ *GGA Global positioning system fix data* on page 297

**c GLL**

This telegram is used to transfer latitude and longitude of vessel position, time of position fix and status from a global positioning system (GPS).

→ *GLL Geographical position latitude/longitude* on page 296

**d RMC**

This telegram contains time, date, position, course and speed data provided by a global navigation satellite system (GNSS) receiver.

→ *RMC Recommended minimum specific GNSS data* on page 299

**4 Talker ID**

If you wish to specify a dedicated **Talker ID** on the telegram format, it can be selected here.

The **Talker ID** is the first two characters in the NMEA sentence. Select *None* to accept all talker identifiers.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

## Topics


- *Navigation dialog box; Position tab* on page 212
- *Navigation dialog box; Speed tab* on page 214
- *Navigation dialog box; Distance tab* on page 216
- *Navigation dialog box; Heading tab* on page 218


## Related procedures


- *External interface procedures* on page 104


## Related topics


- *External interface procedures* on page 104
- *Setup menu; functions and dialog boxes* on page 195
- *LAN Port Setup dialog box* on page 229
- *Serial Port Setup dialog box* on page 232

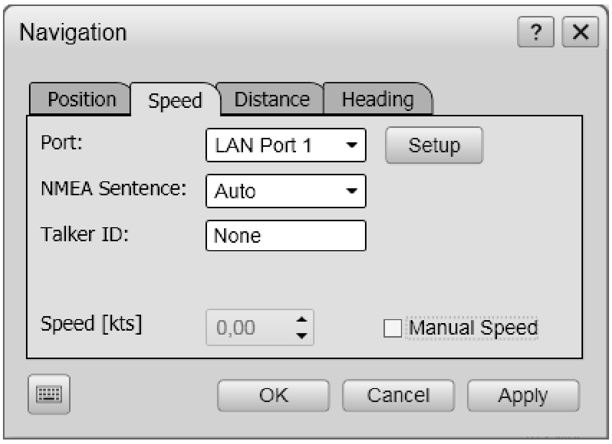
- *About the NMEA telegram format* on page 294
- *Telegram formats* on page 293


## Navigation dialog box; Speed tab

### Purpose

The parameters on this **Speed** tab allows you to control the interface with external speed sensors or set a manual speed.

### Description




These external speed sensors are typically global positioning systems (GPS) or dedicated speed sensors. They provide their data on a serial line, or by means of the local area network.

The information from the speed sensor system provides the speed information on the PI50 **Title bar**.

### Parameters

1 **Port**

Select which serial or Ethernet port to use for this communication.

2 **Setup**

Once you have selected a serial or Ethernet communication port, click this button to set up the applicable port parameters. The relevant port setup dialog box opens.

3 **NMEA Sentence**

Select which NMEA sentence to be used for the communication.

a **Auto**

The PI50 will read all relevant telegrams. If the specified information is provided to the system on more than one telegram format, a built-in priority list will be used.

b **VHW**

This telegram contains the compass heading to which the vessel points and the speed of the vessel relative to the water.

→ *VHW Water speed and heading* on page 300

c **VTG**

This telegram contains the actual course and speed relative to the ground.

→ *VTG Course over ground & ground speed* on page 301

d **RMC**

This telegram contains time, date, position, course and speed data provided by a global navigation satellite system (GNSS) receiver.

→ *RMC Recommended minimum specific GNSS data* on page 299

**4 Talker ID**

If you wish to specify a dedicated **Talker ID** on the telegram format, it can be selected here.

The **Talker ID** is the first two characters in the NMEA sentence. Select *None* to accept all talker identifiers.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

**5 Manual speed**

If you do not have any information from a speed sensor, or if you wish to enter the vessel's speed manually, you can click this box. When it is enabled, you can enter the vessel speed manually using the **Speed** spin box.

### Topics


- *Navigation dialog box; Position tab* on page 212
- *Navigation dialog box; Speed tab* on page 214
- *Navigation dialog box; Distance tab* on page 216
- *Navigation dialog box; Heading tab* on page 218


### Related procedures


- *External interface procedures* on page 104


### Related topics

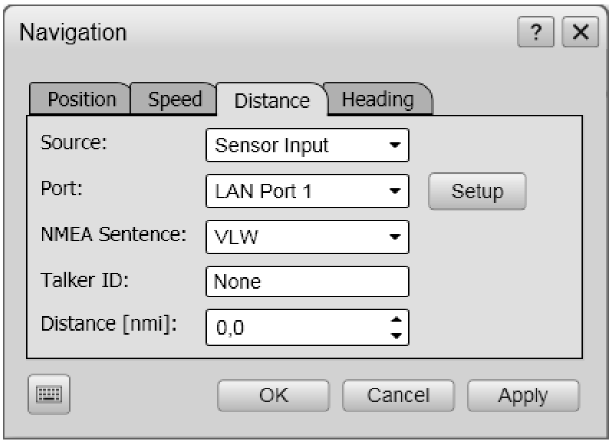

- *External interface procedures* on page 104
- *Setup menu; functions and dialog boxes* on page 195
- *LAN Port Setup dialog box* on page 229
- *Serial Port Setup dialog box* on page 232
- *About the NMEA telegram format* on page 294
- *Telegram formats* on page 293

## Navigation dialog box; Distance tab

### Purpose

The parameters on this **Distance** tab allows you to control the interface with external distance sensors.

### Description




These external distance sensors are typically global positioning systems (GPS) or dedicated distance sensors. They provide their data on a serial line, or by means of the local area network.

### Parameters

1 **Source**

Select the source for the distance information.

a **None**

No distance information is accepted.

b **Calculated from Speed**

The distance information is calculated using the speed information received by the PI50. If will always start with the previously calculated distance. If you need to reset this to zero (or any other value), use the **Distance** parameter.

c **Sensor Input**

The distance information is received using appropriate datagram(s) from an external source.

2 **Port**

Select which serial or Ethernet port to use for this communication.

3 **Setup**

Once you have selected a serial or Ethernet communication port, click this button to set up the applicable port parameters. The relevant port setup dialog box opens.

4 **NMEA Sentence**

Select which NMEA sentence to be used for the communication.

a **VLW**

This telegram contains the distance travelled relative to the water and over the ground.

→ *VLW Dual ground/water distance* on page 300

**5 Talker ID**

If you wish to specify a dedicated **Talker ID** on the telegram format, it can be selected here.

The **Talker ID** is the first two characters in the NMEA sentence. Select *None* to accept all talker identifiers.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

**6 Distance**

The current vessel distance can be set manually using the spin box

This parameter is not available if **Source** is set to *Sensor Input*.

### Topics


- *Navigation dialog box; Position tab* on page 212
- *Navigation dialog box; Speed tab* on page 214
- *Navigation dialog box; Distance tab* on page 216
- *Navigation dialog box; Heading tab* on page 218


### Related procedures


- *External interface procedures* on page 104


### Related topics

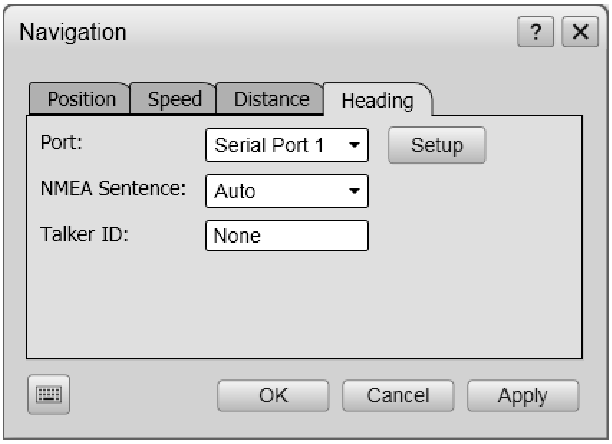

- *External interface procedures* on page 104
- *Setup menu; functions and dialog boxes* on page 195
- *LAN Port Setup dialog box* on page 229
- *Serial Port Setup dialog box* on page 232
- *About the NMEA telegram format* on page 294
- *Telegram formats* on page 293

## Navigation dialog box; Heading tab

### Purpose

The parameters on this **Heading** tab allows you to control the interface with external heading sensors or set a manual heading.

### Description




These external heading sensors are typically global positioning systems (GPS) or dedicated gyro or compass systems. They provide their data on a serial line, or by means of the local area network.

The information from the heading sensor provides the heading information on the PI50 **Title bar**.

### Parameters

**1 Port**

Select which serial or Ethernet port to use for this communication.

**2 Setup**

Once you have selected a serial or Ethernet communication port, click this button to set up the applicable port parameters. The relevant port setup dialog box opens.

**3 NMEA Sentence**

Select which NMEA sentence to be used for the communication.

**a Auto**

The PI50 will read all relevant telegrams. If the specified information is provided to the system on more than one telegram format, a built-in priority list will be used.

**b HDT**

This telegram is used to transfer heading information from a gyro.

→ *HDT Heading, true* on page 299

**c HDM**

This telegram contains vessel heading in degrees magnetic.

→ *HDM Heading, magnetic* on page 298

**d HDG**

This telegram contains the heading from a magnetic sensor, which if corrected for deviation will produce magnetic heading, which if offset by variation will provide true heading.

→ *HDG Heading, deviation and variation* on page 298

**e** **VHW**

This telegram contains the compass heading to which the vessel points and the speed of the vessel relative to the water.

→ *VHW Water speed and heading* on page 300

**4** **Talker ID**

If you wish to specify a dedicated **Talker ID** on the telegram format, it can be selected here.

The **Talker ID** is the first two characters in the NMEA sentence. Select *None* to accept all talker identifiers.

Tip

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

---

### Topics


- *Navigation dialog box; Position tab* on page 212
- *Navigation dialog box; Speed tab* on page 214
- *Navigation dialog box; Distance tab* on page 216
- *Navigation dialog box; Heading tab* on page 218


### Related procedures


- *External interface procedures* on page 104


### Related topics


- *External interface procedures* on page 104
- *Setup menu; functions and dialog boxes* on page 195
- *LAN Port Setup dialog box* on page 229
- *Serial Port Setup dialog box* on page 232
- *About the NMEA telegram format* on page 294
- *Telegram formats* on page 293

# Installation menu

To use the **Installation** functions, click **Installation** on the **Setup** menu.


### Purpose

The **Installation** function opens a small submenu with access to the functions and dialog boxes required to set up the PI50 for operational use.



1 **I/O Setup**

   The **I/O Setup** dialog box allows you to control the properties of each of the available communication channels on the PI50 Processor Unit.

   → *I/O Setup dialog box* on page 222

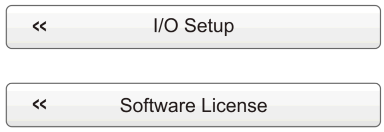
2 **Software License**

   The purpose of the **Software License** dialog box is to allow you to enter a license code (text string) to unlock the PI50 functionality. In order to obtain the license code(s) required, contact your dealer.

   → *Software License dialog box* on page 226

# Installation menu; functions and dialog boxes

The following functions and dialog boxes are available from the submenu provided by the **Installation** button on the **Setup** menu.




**1 I/O Setup**

The **I/O Setup** dialog box allows you to control the properties of each of the available communication channels on the PI50 Processor Unit.

→ *I/O Setup dialog box* on page 222

**2 Software License**

The purpose of the **Software License** dialog box is to allow you to enter a license code (text string) to unlock the PI50 functionality. In order to obtain the license code(s) required, contact your dealer.

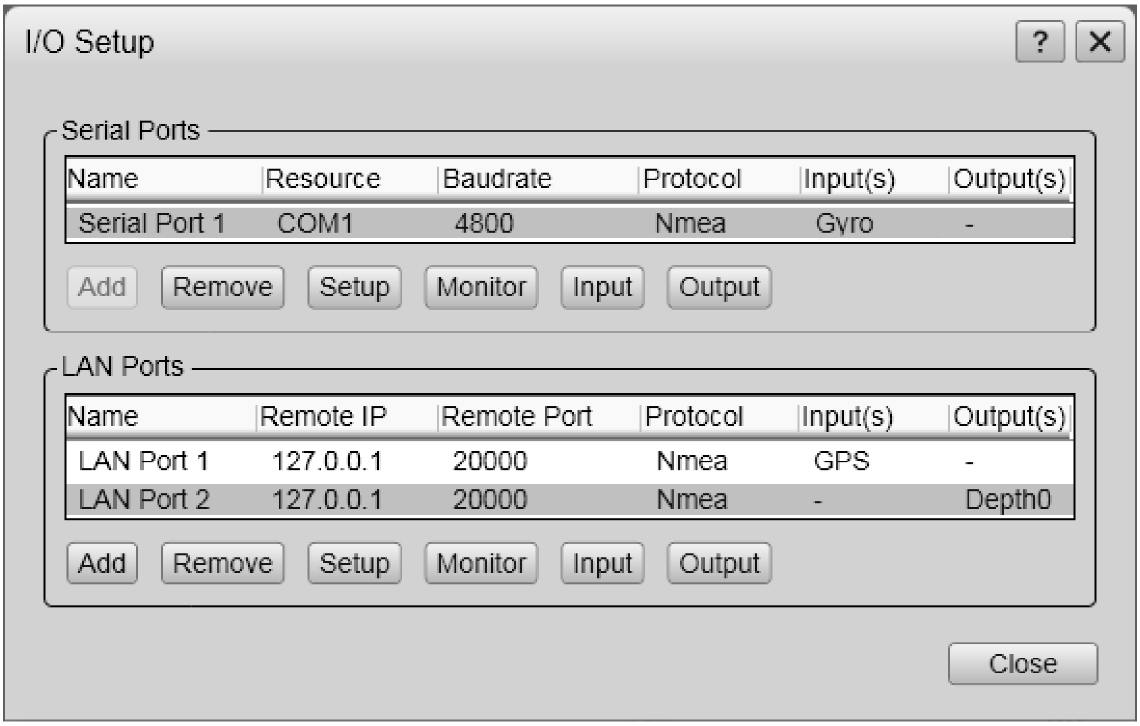
→ *Software License dialog box* on page 226

# I/O Setup dialog box

The **I/O Setup** dialog box is opened from the **I/O Setup** button made available when you click the **Installation** button on the **Setup** menu.


## Purpose

The **I/O Setup** dialog box allows you to control the properties of each of the available communication channels on the PI50 Processor Unit.




## Description

The PI50 software automatically scans the computer to locate and identify Ethernet (LAN) and serial line interfaces.

Once the software has established a list of valid interfaces, you can set up and control the parameters. The **I/O Setup** dialog box provides two lists, one for serial ports and one for Ethernet (LAN) ports.

Note

*One serial line on the computer (normally Serial Port 1) must be reserved for communication with the Sensor Receiver. In the list of interfaces in the **I/O Setup** dialog box, this communication is identified as **PI50**.*

## Related topics

- *Setup menu; functions and dialog boxes* on page 195
- *Installation menu* on page 220
- *Add Serial Port dialog box* on page 233

- *Serial Port Setup dialog box* on page 232
- *LAN Port Setup dialog box* on page 229
- *Port Monitor dialog box* on page 233
- *Select Inputs dialog box* on page 235
- *Select Outputs dialog box* on page 237


## I/O Setup; Serial ports

Important

Do not confuse “external sensors” with “catch monitoring sensors”. In this context, “sensors” are external measuring devices such as a course gyro, a depth sounder, a speed log or a global positioning system.

### Parameters

**1 Serial Ports**

This list displays the available serial ports on the computer.

The list is automatically populated the first time the **I/O Setup** dialog box is opened after a PI50 software installation

It will then reflect the initial number of serial ports available on the computer. If you later add interface hardware to your computer, you must click the **Add** button to add the new ports to the list.

**2 Name**

This is the given identity of the serial port. By default, the serial ports are numbered.

**3 Resource**

This is the communication port on the PI50 computer. These are normally named COM1, COM2 etc.

**4 Baudrate**

This cell shows the current baudrate specified for the serial line. Standard baudrate defined for NMEA communication is 4800 baud.

**5 Protocol**

This is the current protocol specified for the serial line.

Each serial line can receive multiple telegrams simultaneously, provided that the telegrams all use the same protocol.

However, only one peripheral device may be physically connected to the port. If you wish to connect several peripheral devices to a single serial port, you must route these through a “mixer”. This can be a hardware unit or computer collecting and streaming the telegrams.

**6 Input(s)**

This column is used to identify the external sensor (measuring device) currently connected to the port.

To choose what type of external sensor to import data from, click the **Input** button.

**7 Outputs(s)**

This column is used to identify the data that are exported on the port.

To choose which data to export, click the **Output** button.

**8 Add**

Click this button to add a new serial port.

This is required if you have added new hardware to the computer, for example by installing an extra interface circuit board. If you have previously released an unused serial port, but wish to bring it back to PI50 use, you must also click this button. The button is disabled if the computer has no more serial communication ports to offer. If ports are available, a small dialog box is opened to choose port.

**9 Remove**

Once the PI50 has identified and listed all the available serial lines on the computer, these can not be used by any other software applications on the same computer.

If the PI50 does not need a specific serial line, it can be released for other use. Click on the applicable port to select it, then click the **Remove** button to delete the port from the list. Note that no acknowledgement is required, the port is removed instantly.

**10 Setup**

In order to use a serial line to receive or transmit information, its communication parameters must be set up to match the properties of the peripheral device.

Click one of the listed ports to select it, then click the **Setup** button to set up the port parameters. A dedicated dialog box is provided.

**11 Monitor**

If you suspect that the communication on the port is ineffective, faulty or missing, you can monitor the flow of telegrams.

Click one of the listed ports to select it, then click the **Monitor** button to observe the data communication on the selected port. A dedicated dialog box is provided.

**12 Input**

When you add a new port, you must define the source of the input data.

Click the port to select it, then click the **Input** button to define which external sensor (measuring device) you wish to import data from. A dedicated dialog box is provided.

**13 Output**

When you set up a port to export data, you must define the type of data to be sent out.

Click the port to select it, then click the **Output** button to define what kind of data you wish to export. A dedicated dialog box is provided.

## I/O Setup; LAN (Ethernet) ports

Important

Do not confuse "external sensors" with "catch monitoring sensors". In this context, "sensors" are external measuring devices such as a course gyro, a depth sounder, a speed log or a global positioning system.

### Parameters

1 **LAN Ports**

This list displays the available Ethernet local area network (LAN) ports on the computer.

By default, this is one.

Each Ethernet interface board on the computer supports any number of network ports. To add a new port, you must click the **Add** button to add the new ports to the list.

2 **Name**

This is the given identity of the local area network (LAN) port. By default, the ports are numbered.

3 **Remote IP**

This is the Internet Protocol (IP) address of a remote computer.

If you wish to export information to another computer, you must either define this IP address, or enter IP broadcast address `255.255.255.255`. The broadcast address will allow all computers connected to the network to receive the information. If only you wish to receive information on the LAN port, you do not need to define this address.

4 **Remote port**

If you wish to establish point-to-point communication for data import from a peripheral device on the network, you may need to define the network port on the remote computer.

To find this port number, consult the documentation for software program to be used on the remote computer.

5 **Protocol**

This is the current protocol specified for the LAN port. Each LAN port can receive multiple telegrams simultaneously, provided that the telegrams all use the same protocol.

6 **Input(s)**

This column is used to identify the external sensor (measuring device) currently connected to the port.

To choose what type of external sensor to import data from, click the **Input** button.

7 **Outputs(s)**

This column is used to identify the data that are exported on the port.

To choose which data to export, click the **Output** button.

**8 Add**

Click this button to add a new LAN (Ethernet) port.

This is required if you have added new hardware to the computer, for example by installing an extra Ethernet interface board. If you have previously released an unused LAN port, but wish to bring it back to PI50 use, you must also click this button.

**9 Remove**

Once the PI50 has identified and listed all the available LAN ports on the computer, these can not be used by any other software applications on the same computer.

If the PI50 does not need a specific LAN port, it can be released for other use. Click on the applicable port to select it, then click the **Remove** button to delete the port from the list. Note that no acknowledgement is required, the port is removed instantly.

**10 Setup**

In order to use a LAN (Ethernet) port to receive or transmit information, its communication parameters must be set up to match the peripheral device.

Click one of the listed ports to select it, then click the **Setup** button to set up the port parameters. A dedicated dialog box is provided.

**11 Monitor**

If you suspect that the communication on the port is ineffective, faulty or missing, you can monitor the flow of telegrams.

Click one of the listed ports to select it, then click the **Monitor** button to observe the data communication on the selected port. A dedicated dialog box is provided.

**12 Input**

When you add a new port, you must define the source of the input data.

Click the port to select it, then click the **Input** button to define which external sensor (measuring device) you wish to import data from. A dedicated dialog box is provided.

**13 Output**

When you set up a port to export data, you must define the type of data to be sent out.

Click the port to select it, then click the **Output** button to define what kind of data you wish to export. A dedicated dialog box is provided.

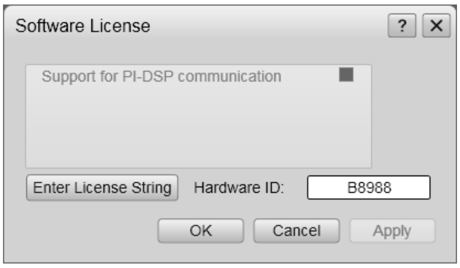
## Software License dialog box

The **Software License** dialog box is opened from the **Software License** button made available when you click the **Installation** button on the **Setup** menu.


### Purpose

The purpose of the **Software License** dialog box is to allow you to enter a license code (text string) to unlock the PI50 functionality. In order to obtain the license code(s) required, contact your dealer.

## Description




This license allows the PI50 computer to communicate with the Sensor Receiver.

**Important**

Once you receive your software license keys, do not loose them.

## Parameters

**1 List of optional functions**

This list presents the optional functionality that you can obtain for you PI50 system. Functions already available are identified with a dark cross in the right column.

**2 Hardware ID**

This field presents a unique identification of the computer.

Note that the license key(s) obtained are connected to this hardware identification. If the PI50 software is moved to another computer, this second computer will have a different hardware identification, and the license key(s) will not be operational.

**3 Type License String**

Click this button to type a license string.

A dedicated dialog box opens to accept the license string.

**Tip**

If you do not have a computer keyboard connected to your PI50 system, click the **Keyboard** button to open an on-screen keyboard.

## Related topics

- *Setup menu; functions and dialog boxes* on page 195
- *Installation menu* on page 220

# Secondary functions and dialog boxes

The dialog boxes and functions described in this section are all opened from within the other PI50 dialog boxes or sub-menus.

They are not opened directly from the menu system.

1 **LAN Port Setup**

The **LAN Port Setup** dialog box allows you to define the parameters for Ethernet (Local Area Network (LAN)) communication with external sensors (measuring devices) or peripheral systems.

→ *LAN Port Setup dialog box* on page 229

2 **Serial Port Setup**

The **Serial Port Setup** dialog box allows you to define the parameters for serial communication with external sensors (measuring devices) or peripheral systems.

→ *Serial Port Setup dialog box* on page 232

3 **Add Serial Port**

The **Add Serial Port** dialog box allows you to put a free serial port (COM port) on the PI50 computer to use for interface purposes.

→ *Add Serial Port dialog box* on page 233

4 **Port Monitor**

The **Port Monitor** dialog box allows you to study the communication stream on the chosen serial or Ethernet (Local Area Network (LAN)) port.

→ *Port Monitor dialog box* on page 233

5 **Select Inputs**

The **Select Inputs** dialog box allows you to select information from external sensors (measuring devices) or systems, and connect them to the chosen PI50 Ethernet (LAN) or serial line input.

→ *Select Inputs dialog box* on page 235

6 **Select Outputs**

The **Select Outputs** dialog box allows you to select information to be exported to peripheral systems on the chosen Ethernet (LAN) or serial line output.

→ *Select Outputs dialog box* on page 237

7 **Messages**

The **Messages** dialog box allows you to read and acknowledge messages from the PI50.

→ *Messages dialog box* on page 238

8 **PI Data Output**

The **PI Data Output** dialog box is used to enable the PI telegrams to be exported to a peripheral system.

→ *PI Data Output dialog box* on page 240

# LAN Port Setup dialog box

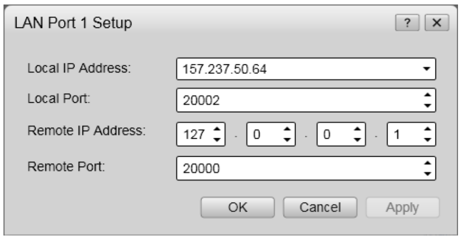
The **LAN Port Setup** dialog box is opened from the **LAN Port Setup** button in the following dialog boxes:

- *Navigation dialog box* on page 211
- *I/O Setup dialog box* on page 222

## Purpose

The **LAN Port Setup** dialog box allows you to define the parameters for Ethernet (Local Area Network (LAN)) communication with external sensors (measuring devices) or peripheral systems.

## Description




Ethernet (Local Area Network (LAN)) communication is an efficient way to connect to external sensors, such as a global positioning system (GPS) to receive navigational data.

In order for this communication port to work, the parameters must be set up properly.

## Parameters

**1 Local IP Address**

This is the Internet Protocol (IP) address of the local Ethernet interface board.

In most cases, each Ethernet board has a unique IP address, even when an interface board supports multiple sockets. If you have more than one interface board, you are provided with a list of the available addresses.

**2 Local port (UDP)**

This port is important if you wish to receive information. It must match the port number on the remote computer.

To find the port number on the remote computer, consult the documentation for the software program to be used. If the data communication is set up to only transmit information from the PI50, this parameter is not required.

**3 Remote IP Address**

Select the Internet Protocol (IP) address for the remote computer.

If the data communication is set up to receive data only, this parameter is not required. If you wish to set up an output for broadcast, define IP address `255.255.255.255`. This is the default setting.

If you use point-to-point communication in a closed network, you need to enter the remote IP address manually.

**4 Remote port (UDP)**

Specify the local network port. The PI50 uses this network port to transmit information. The application on the remote computer will "listen" to this port number.

### Related topics

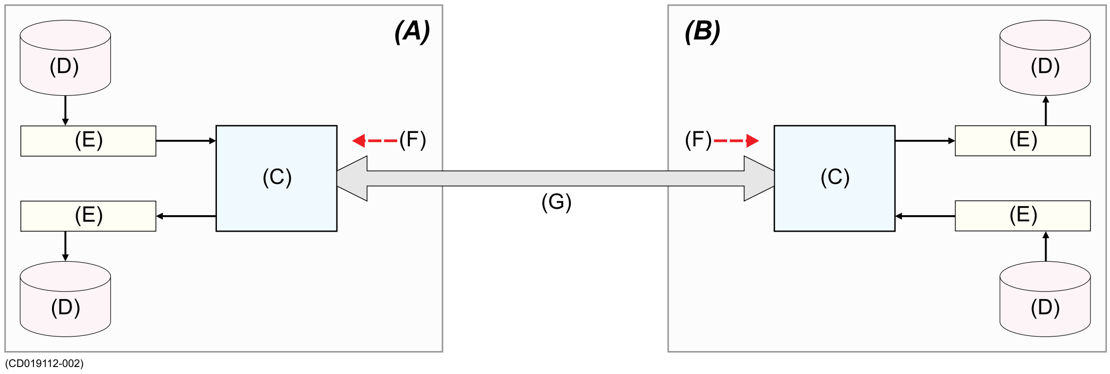
- *Navigation dialog box* on page 211
- *I/O Setup dialog box* on page 222

## IP addressing and UDP port principles

The Ethernet traffic between the PI50 and external devices, such as sensors or peripheral systems, is made using Internet Protocol (IP) and User Datagram Protocol (UDP) ports.

### *Internet Protocol (IP) address*

An **Internet Protocol (IP)** address is a numerical identification and logical address that is assigned to devices participating in a computer network utilizing the Internet Protocol for communication between its nodes. Although IP addresses are stored as binary numbers, they are usually displayed in human-readable notations, such as 208.77.188.166.




IP addressing and UDP port principles

**A** *Local system*

**B** *Remote system*

**C** *Ethernet interface board*

**D** *Data storage*

**E** *UDP port, each with a different port address*

**F** *IP address, each Ethernet interface board has its own individual address*

**G** *Ethernet communication*

The role of the IP address has been characterized as follows: "A name indicates what we seek. An address indicates where it is. A route indicates how to get there”.

### *User Datagram Protocol (UDP)*

The **User Datagram Protocol (UDP)** is one of the core members of the Internet Protocol Suite, the set of network protocols also used for the Internet. With UDP, computer applications can send messages, in this case referred to as datagrams, to other hosts on an Internet Protocol (IP) network without requiring prior communications to set up special transmission channels or data paths (TCP).

UDP is sometimes referred to as the **Universal Datagram Protocol**.

### *Datagram sockets and ports*

UDP applications use datagram **sockets** to establish host-to-host communications. Sockets bind the application to service **ports**, that function as the endpoints of data transmission.

A port is a software structure that is identified by the port number, a 16-bit integer value, allowing for port numbers between 0 and 65,535.

### *How the IP addresses and ports are set up in the PI50 to transmit data*

Note

*The PI50 is currently not exporting any data.*

---

**1 Local IP Address**

This IP address is unessential, unless you have more than one Ethernet board on your computer. You must then specify the IP address of the board you wish to use.

**2 Remote IP Address**

If you wish to set up data broadcast to all peripherals on the system, select **Remote IP Address** `255.255.255.255`.

If your transmission is directly aimed at a particular recipient, you must specify its IP address.

**3 Local Port**

The value of the **Local Port** is unessential, and you do not need to specify a value other than the default.

**4 Remote Port**

The PI50 software uses this network port to transmit information. The application on the remote computer will "listen" to this port number. You must then access the application on the remote computer to set up the local port to match.

### *How the IP addresses and ports are set up in the PI50 to receive data*

**1 Local IP Address**

This IP address is unessential. If you have only one Ethernet board, you must use the default value provided. If you have more than one Ethernet board on your computer, or if you use an Ethernet board with multiple IP addresses, you must specify the IP address of the board you wish to use.

**2 Remote IP Address**

If you wish to receive data, this IP address is unessential.

**3 Local Port**

This port must match the port number on the remote computer. To find the port number on the remote computer, consult the documentation for the software utility to be used. If the data communication is set up to only transmit information, this parameter is not required.

**4 Remote Port**

If you set up your PI50 to receive data, this port is unessential. Keep the Remote Port default value.

### *How the IP addresses and ports are set up in the PI50 to communicate in a closed network*

If the local system (PI50) and the remote system shall communicate point-to-point in a closed network, both IP addresses, as well as both **Local Port** and **Remote Port** values must be defined.

## Serial Port Setup dialog box

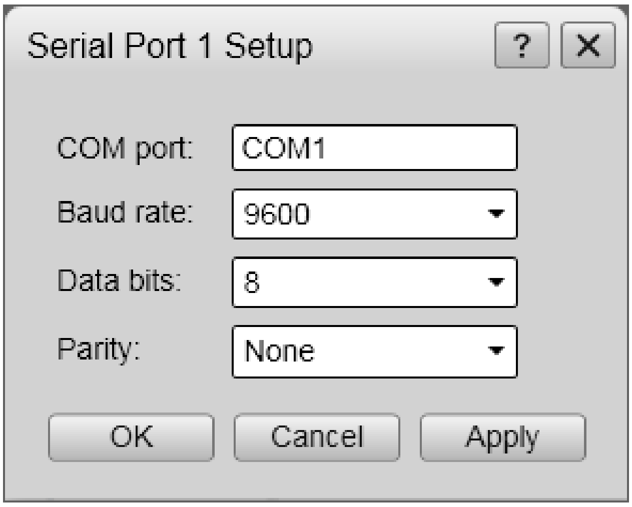
The **Serial Port Setup** dialog box is opened from the **Serial Port Setup** button in the following dialog boxes:

- *Navigation dialog box* on page 211
- *I/O Setup dialog box* on page 222

### Purpose

The **Serial Port Setup** dialog box allows you to define the parameters for serial communication with external sensors (measuring devices) or peripheral systems.

### Description




Serial ports are still a very common method for interface between maritime systems.

It is very important that any serial line between the PI50 and any external system is setup up correctly with identical parameters at each end.

The NMEA[1] standard for serial communication defines standard parameters for such interfaces.

### Parameters

**1 COM port**

This text fields identifies the current communication port on the computer. You can not change this information.

**2 Baud rate**

Use this entry to specify the baudrate ("speed") for the serial communication.

Standard baudrate defined for NMEA communication is *4800 baud*.

1. "NMEA" means National Marine Electronics Association. See http://www.nmea.org for more information.

**3 Parity**

Use this entry to specify the parity for the serial communication.

Standard parity defined for NMEA communication is *None*.

**4 Data bits**

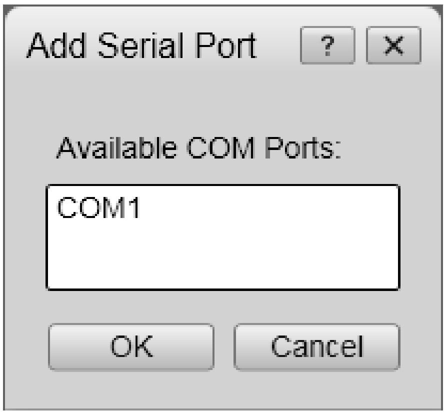
Use this entry to specify the number of data bits for the serial communication.

Standard number of data bits defined for NMEA communication is *8*.

### Related topics

- *Navigation dialog box* on page 211
- *I/O Setup dialog box* on page 222

## Add Serial Port dialog box




The **Add Serial Port** dialog box is opened from the **Add** button in the **I/O Setup** dialog box.

### Purpose

The **Add Serial Port** dialog box allows you to put a free serial port (COM port) on the PI50 computer to use for interface purposes.

### Description

The ports available on the computer are listed automatically. To select a port, click once on its name, and then click **OK**.

### Related procedures

- *External interface procedures* on page 104

### Related topics

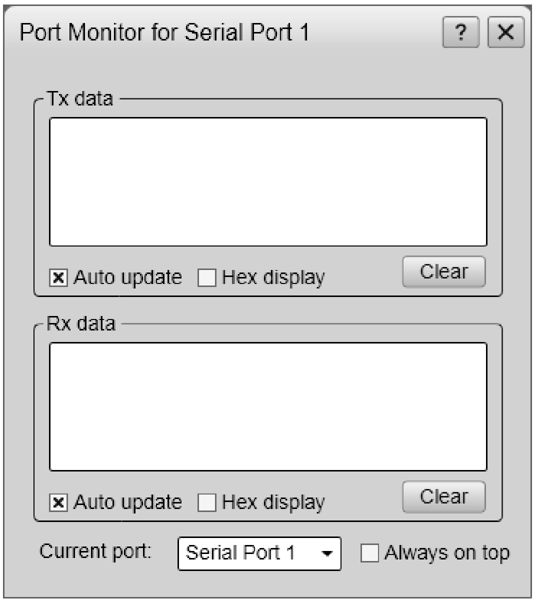
- *I/O Setup dialog box* on page 222

## Port Monitor dialog box

The **Port Monitor** dialog box is opened from the **Port Monitor** button in the **I/O Setup** dialog box.

### Purpose

The **Port Monitor** dialog box allows you to study the communication stream on the chosen serial or Ethernet (Local Area Network (LAN)) port.




## Description

The **Port Monitor** dialog box provides one text field for incoming messages (**Rx data**), and one for outgoing (**Tx data**). Use these fields and your own knowledge of the data communication to investigate the telegrams.

Note that the **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the PI50.

## Parameters

**1 Tx data**

This text window displays the data communication transmitted out from the PI50.

**2 Rx data**

This text window is used to display the data communication received by the PI50 from external sensors (measuring devices) or peripheral systems.

**3 Auto update**

When this box is selected, the field is constantly updated with new information. If you wish to freeze the information for further investigation, deselect to disable the automatic update.

**4 Hex display**

When this box is selected, the information in the text field is shown in hexadecimal format.

**5 Clear**

This button clears the text field to allow a fresh stream of communication data.

**6 Current port**

If you wish to change your attention to a different serial or LAN port, you can choose the communication port here instead of returning to the **I/O Setup** dialog box.

**7 Always on top**

This function places the **Port Monitor** dialog box on the top of all other dialogs and system presentations on your desktop.

## Related topics

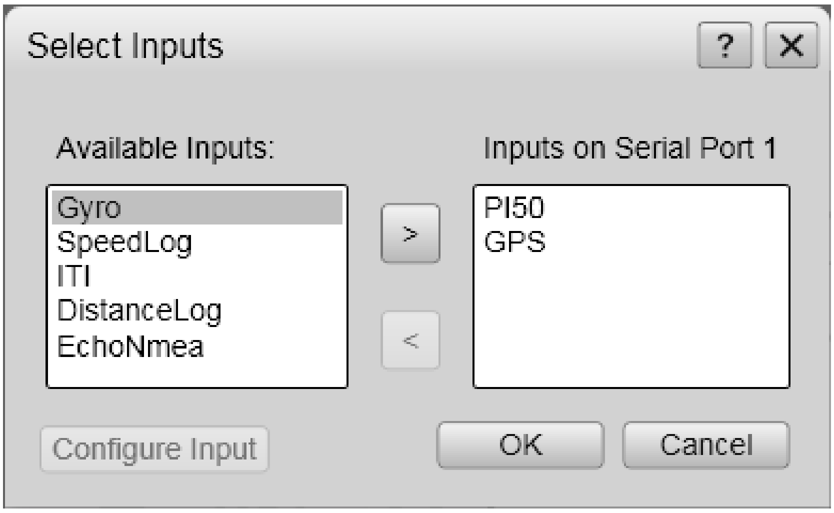

- *External interface procedures* on page 104
- *I/O Setup dialog box* on page 222
- *Serial Port Setup dialog box* on page 232
- *LAN Port Setup dialog box* on page 229

## Select Inputs dialog box

The **Select Inputs** dialog box is opened from the **Input** button in the **I/O Setup** dialog box.

### Purpose

The **Select Inputs** dialog box allows you to select information from external sensors (measuring devices) or systems, and connect them to the chosen PI50 Ethernet (LAN) or serial line input.




### Description

In the **Select Inputs** dialog box, all available input sources are listed in the left text field.

To add an input, click on it in the left column to select it, and then click the [▶] button.

If the input's communication parameters need to be set up, click the input sensor to select it, and then click the **Configure Input** button. If applicable, the relevant dialog will open.

Note that this dialog box allows you to add more than one input signal to a serial port. You must be familiar with the type of input signals before you do this. If an input port is set up to receive NMEA serial messages, the same input port can not be used to simultaneously receive ASCII messages.

### Parameters

**1 Available Inputs**

This field lists the available input signals.

The available sources are defined in a configuration file on the PI50, and reflects the input sources and file formats the PI50 can support.

**a GPS**

This is input from the Global Positioning System (GPS). The following telegram formats are supported:

→ *GLL Geographical position latitude/longitude* on page 296

→ *GGA Global positioning system fix data* on page 297

→ *RMC Recommended minimum specific GNSS data* on page 299

**b** **Gyro**

This is input from a peripheral gyro or compass system providing heading information. The following telegram formats are supported:

→ *HDG Heading, deviation and variation* on page 298

→ *HDT Heading, true* on page 299

→ *HDM Heading, magnetic* on page 298

→ *VHW Water speed and heading* on page 300

**c** **Speed Log**

This is input from a speed log. The following telegram formats are supported:

→ *RMC Recommended minimum specific GNSS data* on page 299

→ *VHW Water speed and heading* on page 300

→ *VTG Course over ground & ground speed* on page 301

**d** **ITI/FS**

These are inputs from the Simrad ITI and Simrad FS Series catch monitoring systems. The following telegram formats are supported:

→ *DBS Depth below surface* on page 296

→ *DBS Depth of trawl below surface* on page 302

→ *HFB Trawl headrope to footrope and bottom* on page 302

**e** **PI50**

This is input from the Sensor Receiver. Only a proprietary telegram format is accepted.

Note

*This input must be activated and operational in order for the PI50 to operate. To activate the input, a license is required.*

---

**f** **DistanceLog**

This is input from a peripheral system providing information about sailed distance. The following telegram formats are supported:

→ *RMC Recommended minimum specific GNSS data* on page 299

→ *VHW Water speed and heading* on page 300

→ *VLW Dual ground/water distance* on page 300

→ *VTG Course over ground & ground speed* on page 301

**g** **EchoNMEA**

This is input from an external echo sounder to provide depth information. The following telegram formats are supported:

→ *DBS Depth below surface* on page 296

**2** **Selected Inputs**

This field lists the selected input signals you have chosen to connect to the relevant communication port.

**3 Configure Input**

Some of the inputs may need to be configured. To do this, click on the input name in the **Selected Inputs** field, and then this button. When applicable, the relevant setup dialog will open.

### Related topics

- *External interface procedures* on page 104
- *Navigation dialog box* on page 211
- *I/O Setup dialog box* on page 222

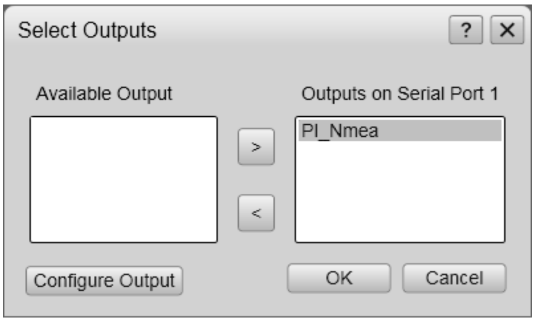
## Select Outputs dialog box

The **Select Outputs** dialog box is opened from the **Outputs** button in the **I/O Setup** dialog box.

### Purpose

The **Select Outputs** dialog box allows you to select information to be exported to peripheral systems on the chosen Ethernet (LAN) or serial line output.

### Description




In the **Select Outputs** dialog box, all available output signals are listed in the left text field.

To enable an output, click on it in the left column to select it, and then click the [▶] button.

If the output's communication parameters can be set up, click the signal name to select it, and then click the **Configure Output** button. If applicable, the relevant dialog will open.

### Parameters

**1 Available Outputs**

This field lists the available output signals.

The available sources are defined in a configuration file on the PI50, and reflects the export data and file formats the PI50 can support.

**a PI NMEA**

This output provides data collected by the PI sensors.

The following format is supported:

→ *PSIMP-D1 PI Sensor data* on page 302

**2 Selected Outputs**

This field lists the selected output signals to the relevant communication port.

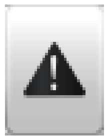
**3 Configure Output**

Some of the outputs may be set up by the PI50. To do this, click on the output name in the **Selected Outputs** field, and then this button. When applicable, the relevant setup dialog will open.

### Related topics

- *External interface procedures* on page 104
- *I/O Setup dialog box* on page 222

## Messages dialog box

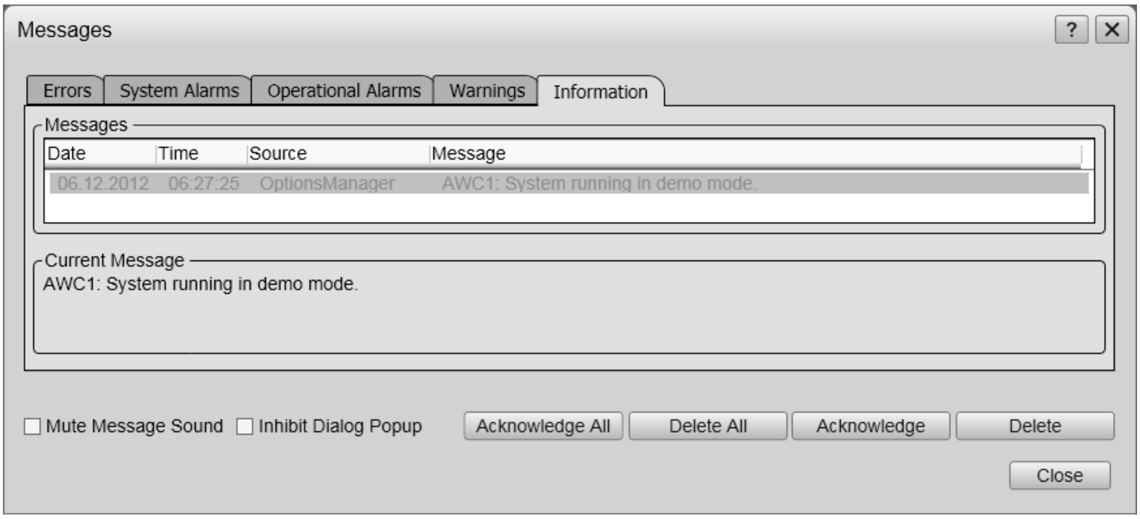


The **Messages** dialog box is opened from the **Messages** icon on the **Task bar**.

When a new message is issued by the PI50, the icon on the **Title Bar** will flash. If you hold the cursor over the icon, a short list of current message status is shown.

### Purpose

The **Messages** dialog box allows you to read and acknowledge messages from the PI50.




### Description

Messages from the PI50 can be related to any type of hardware or software errors, and even events related to operational conditions.

A new message is flagged by means of the **Message** icon on the **Title bar**. Click the button to open the dialog box.

The messages are divided into different types related to their importance.

The following message types are available:

1. **Errors**: These are fatal errors. Operation of the PI50 can not continue.
2. **System alarms**: These are messages related to the PI50 system, or to major software components.
3. **Operational alarms**: These are messages related to environment conditions, interface or other non-software events.

4 **Warnings**: These are operation warnings.

5 **Information**: These messages are notifications of operational events.

Tip

All messages provided by the PI50 system are stored in log files on the hard disk. If you experience abnormal behaviour, these files may prove useful for Simrad's support organization. Observe the relevant procedure to copy these log files to a USB memory stick.

---

## Parameters

1 **Tab**

There are several tabs on the **Messages** dialog box, one for each message category. Click on the tab to see the list of messages in the applicable category.

2 **Current Message**

The text in a message may be longer than the message listing may show. To read the complete message, click on it. The text will be copied into the **Current Message** field.

3 **Acknowledge All**

Click to acknowledge all new messages in the current list (tab).

4 **Delete All**

Click to delete all new messages in the current list (tab).

5 **Acknowledge**

Click to acknowledge the currently selected message.

6 **Delete**

Click to delete the currently selected message.

7 **Mute Message Sound**

Provided that the PI50 system is equipped with a loudspeaker, messages can be notified using an audible sound.

Use this option to disable the audible signal.

8 **Inhibit Dialog Popup**

Click to inhibit dialog popup to all messages to flash on the **Alarm** bottom on the **Task bar**.

## Related topics

• *Message button* on page 121

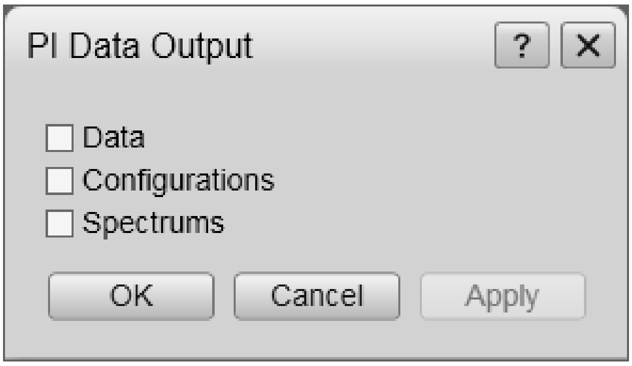
# PI Data Output dialog box

The **PI Data Output** dialog box is opened by clicking the **Configure Output** button in the **Select Ouputs** dialog box with the **PI Nmea** output format chosen.

### Purpose

The **PI Data Output** dialog box is used to enable the PI telegrams to be exported to a peripheral system.

### Description




Specialized information can be exported using proprietary telegrams and formats.

A limited amount of different telegram formats are currently supported.

### Parameters

**1 Data**

Click to allow the PI sensor data telegram [Simrad PSIMP-D1] to be exported.

→ *PSIMP-D1 PI Sensor data* on page 302

**2 Configurations**

Click to allow the PI configuration telegram [Simrad PSIMP-C] to be exported.

Note

*This telegram format is provided for proprietary use, and it is not described in this manual.*

**3 Spectrums**

Click to allow the PI sensor spectrum telegram [Simrad PSIMP-S] to be exported.

Note

*This telegram format is provided for proprietary use, and it is not described in this manual.*

### Related topics

- *Setting up catch sensor data output* on page 104
- *Select Outputs dialog box* on page 237

# About catch monitoring sensors

This chapter describes the various measurements you can make with catch monitoring sensors connected to the Simrad PI50. It also provides the basic – and important! – information related to sensor configuration, and it explains how to use the sensor chargers.

**Topics**

# Overview of measurements and sensors

A large amount of catch monitoring sensors may be used with the Simrad PI50 system to measure important operational parameters related to the trawl, purse seine or Danish seine. A complete description of each sensor is provided on Simrad's website http://www.simrad.com and in the relevant sensor instruction manuals.

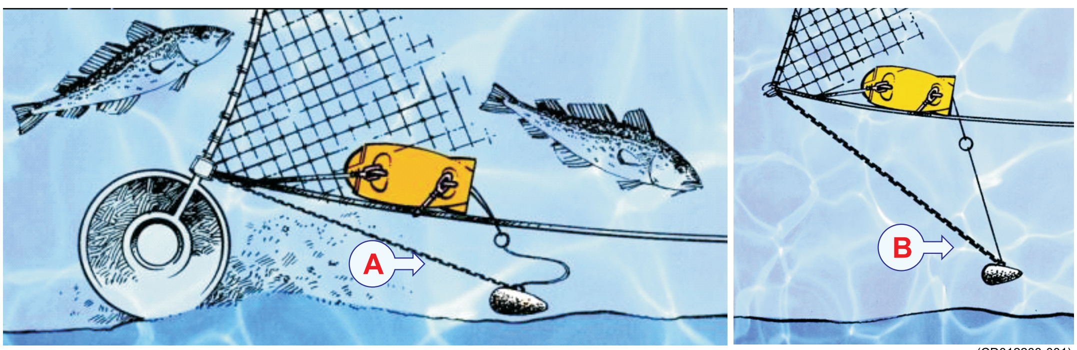
**Topics**



## Bottom contact measurements and sensors

The purpose of the bottom contact measurement is to detect wether a bottom trawl is accidentally lifted up from the seabed. This will allow fish to escape under the gear.

- On a pelagic trawl, the sensor will notify you if you move the gear too close to the bottom.
- Used on a purse seine you will be notified once the seine reaches the bottom, and this allows you to fish even on a rough bottom.
- On a danish seine a bottom contact sensor will let you know when the net has a stable bottom contact, and when it is time to haul.




(CD012203-001)

**A** *The trawl follows the bottom. The detection wire on the sensor is not released.*

**B** *The trawl has lifted off the bottom, and the detection wire is released.*

The following Simrad catch monitoring sensors can be used to measure bottom contact:

- PI Bottom Contact
- PS Bottom Contact

**Related topics**

- *'Bottom contact' sensor view description* on page 124
- *'Bottom contact' trend view description* on page 151
- *Selecting a sensor for bottom contact measurement* on page 56
- *Bottom contact measurements and sensors* on page 242

## About the Simrad PI/PS Bottom Contact sensors

This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MiniCharger**.

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

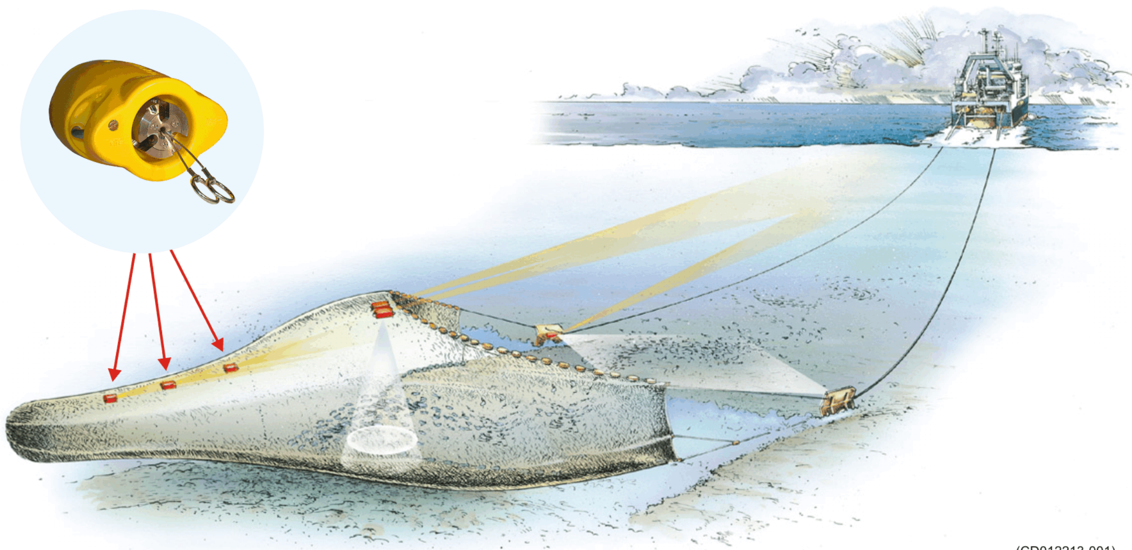
*The **Channel number** must be unique for each sensor in simultaneous use.*

## Catch measurements and sensors

By means of a Simrad catch sensor, you can easily monitor the filling rate and the amount of catch in the trawl.

The sensor simply monitors the expansion of the meshes in the cod-end. Once the volume caught is enough to expand the meshes, they will pull the detector wires and engage the sensor. The sensitivity of the sensor can easily be adjusted by extending the detection rubber bands to span additional meshes.

To monitor the filling rate, we recommend that you use minimum two sensors. Place the first sensor at the far end of the cod-end, it will tell you that the trawl is actually fishing. Place the second sensor closer to the trawl opening. Once the trawl is filled to the chosen location, the sensor is engaged, and you know that it is time to haul.



(CD012213-001)

The following Simrad catch monitoring sensors can be used to measure catch:

- PS Catch
- PI Catch
- PX MultiSensor

Important

The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

**Related topics**


- *'Catch' sensor view description* on page 126
- *'Catch' trend view description* on page 152
- *Selecting a sensor for catch measurement* on page 57
- *Catch measurements and sensors* on page 244

## About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

Important

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

Note

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

## About the Simrad PI/PS Catch sensors

This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MiniCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

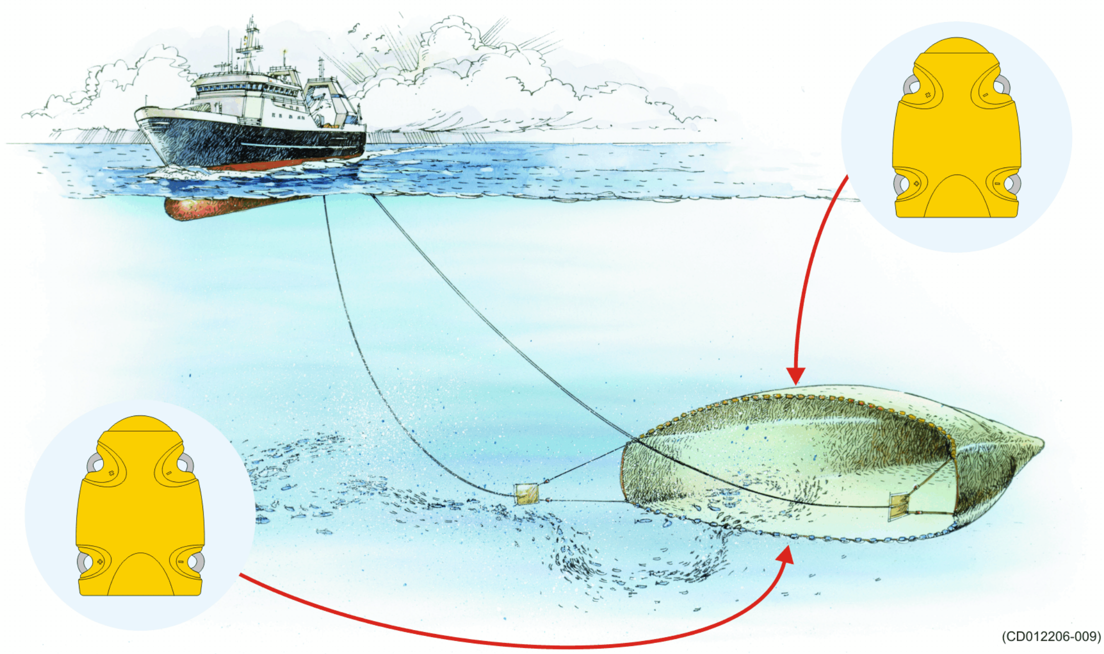
*The **Channel number** must be unique for each sensor in simultaneous use.*

## Depth measurements and sensors

The Simrad depth sensors provide information about the current depth and the depth changes of your gear.

- On a bottom trawl, you will use the sensor to achieve full control when shooting, and to position the trawl on the slope.
- During pelagic trawling, you know how important it is to position the trawl relative to the largest concentration of fish. By using a depth sensor, you can monitor the exact depth relative to the surface, and adjust the trawl depth accordingly. Additional depth sensors on the doors will monitor if the doors stay at the same depth.
- During seining, use the depth sensor to monitor the depth of the net, and the descending speed of the net. Then you will know when to start pursing, and which speed to use.
- Mounted on a danish seine the depth sensor monitors the sinking speed of the net, and it will tell you when to start hauling once the net has stopped sinking.

With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.




The following Simrad catch monitoring sensors can be used to measure depth:

- PS Depth
- PI Depth
- PI Spread/Depth
- PI Height/Depth
- PI Remote/Depth
- PI SeineSounder
- PX MultiSensor

  **Important**

  The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

### Related topics


- *'Depth' sensor view description* on page 127
- *'Depth' trend view description* on page 152
- *Selecting a sensor for depth measurement* on page 59
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Calibration of the depth sensors* on page 95
- *Depth measurements and sensors* on page 246
- *Select Sensors dialog box* on page 197

### About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

**Important**

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

**Note**

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

### About the Simrad PI/PS Depth sensors


This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

**Important**

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MiniCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

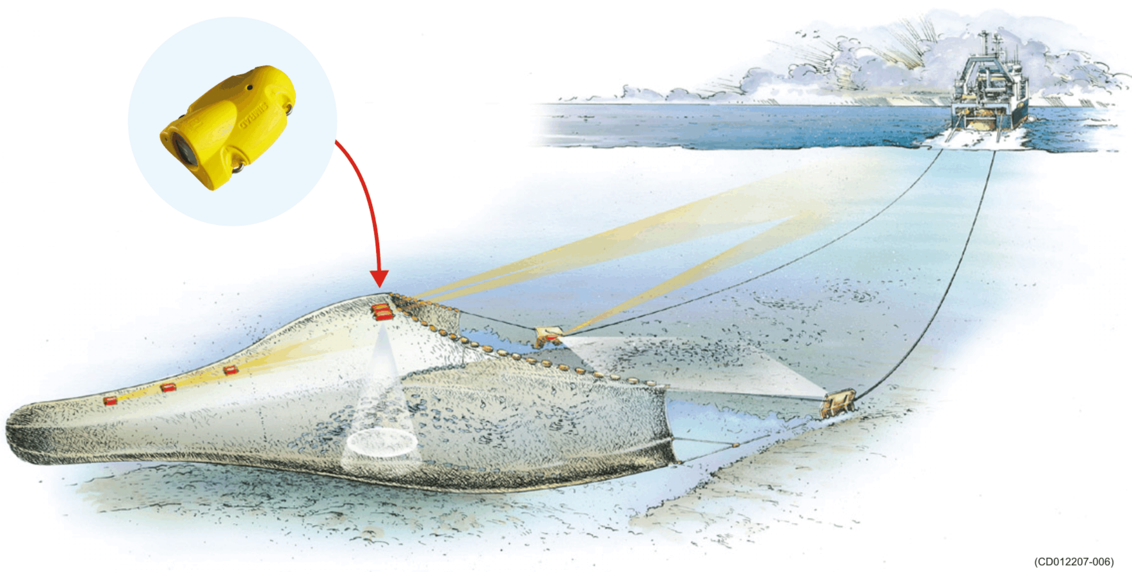
*The **Channel number** must be unique for each sensor in simultaneous use.*

## Height measurements and sensors

The Simrad height sensors measure the height over the bottom, that is the distance from the bottom and up to wherever the sensor is located. This provides you with a valuable range of applications for bottom and pelagic trawling.

- On a bottom trawl, place the sensor behind the headrope. From this position it will tell you the height of the trawl opening. This allows you to adjust you equipment immediately if the opening is reduced, and you will avoid losing catch.
- On a pelagic trawl, place the sensor behind the footrope. You will then know at once if the trawl approaches the bottom. If you use a second sensor behind the headrope, the difference between the two measurements will give you the height of the trawl opening.

The sensor contains a small echo sounder to measure the height above the bottom.




The following Simrad catch monitoring sensors can be used to measure height:

- PI Height
- PI Height/Depth
- PI SeineSounder
- PX MultiSensor

### Related topics

- *'Height' sensor view description* on page 130
- *'Height' trend view description* on page 153
- *Selecting a sensor for height measurement* on page 62
- *Setting up depth and height sensors to measure total water depth* on page 87
- *Setting up the height sensor to show the trawl opening* on page 87
- *Height measurements and sensors* on page 249
- *Select Sensors dialog box* on page 197

## About the Simrad PX MultiSensor

The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.


**Important**

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

**Note**

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

### About the Simrad PI Height sensor


This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MaxiCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

## Spread measurements and sensors

The purpose of the Simrad measurement is to establish the distance between the two trawl doors.

- Use a spread sensor on the port door and a remote sensor on the starboard door.
- The two sensors communicate using a special transverse acoustic link.
- Using this link the spread sensor measures the exact distance between the two doors.

The spread sensor systems have been developed to be used on both bottom and pelagic trawls.

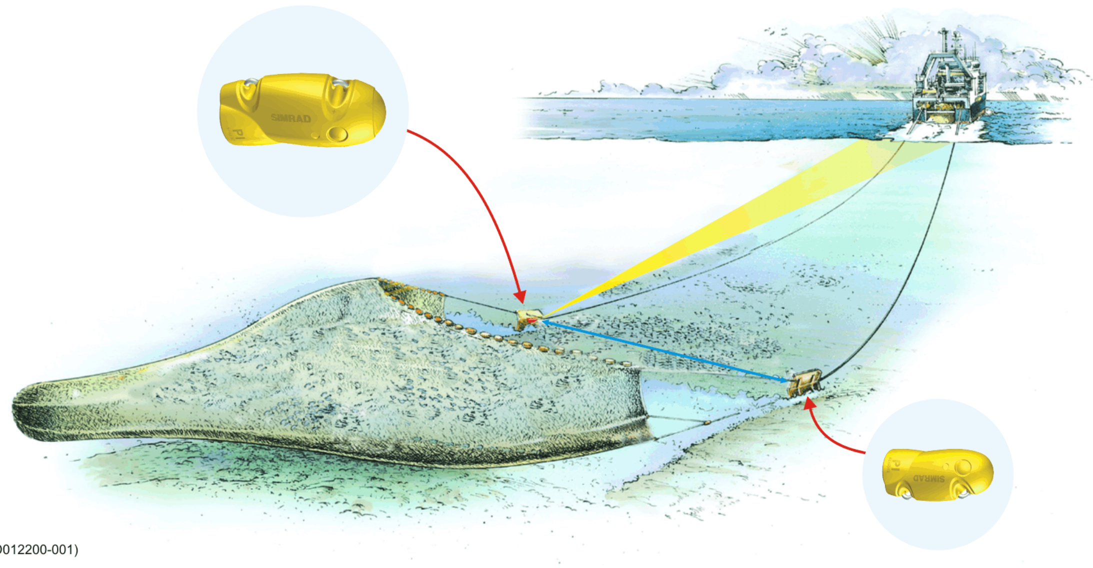
Important

The spread sensor mounted on the port trawl door will always require a remote sensor on the starboard door to do this measurement.

---

Tip

With both the PI Spread sensors and the Simrad PX MultiSensor, two versions are available. They can be set up for standard or extended (XT) spread range. This configuration can be changed in the relevant sensor configuration program.



(CD012200-001)

The following Simrad catch monitoring sensors can be used to measure single and dual spread:

- PI Spread (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PI Spread/Depth (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PX MultiSensor

  Tip

  When the PX MultiSensor is used to measure spread, the remote sensor must be a second PX MultiSensor. The PI Remote sensor can not be used.

### Related topics


- *'Spread' sensor view description* on page 131
- *'Spread' trend view description* on page 154
- *Selecting a sensor for spread measurement* on page 64
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Spread measurements and sensors* on page 251
- *Select Sensors dialog box* on page 197

## About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

**Important**

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

**Note**

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

## About the Simrad PI Spread sensor

This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

**Important**

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MaxiCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the* ***Channel number*** *and* ***Update Rate*** *parameters defined for each sensor in the* ***Select Sensors*** *dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The* ***Channel number*** *must be unique for each sensor in simultaneous use.*

### About the Simrad PI Remote sensor

This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.


Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MiniCharger**.

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup.

- Remote ID

  The Remote ID you select must match the Remote ID programmed for PI Spread sensor.

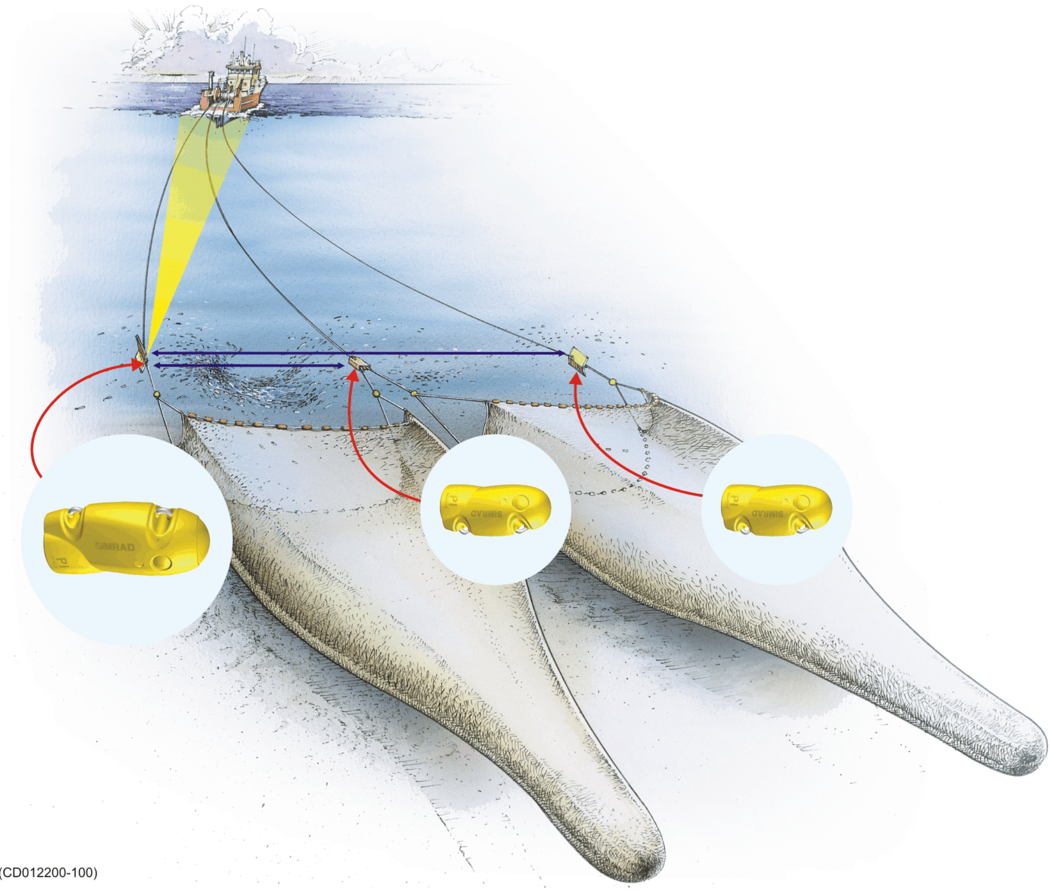
  In a twin spread system, you must select a Remote sensor combination; **1 and 3** or **2 and 4**.

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

## Twin spread measurements and sensors

The purpose of the Simrad twin spread measurement is to establish the distances between the two trawl openings on a dual bottom or pelagic trawl. One spread sensor is mounted on the port door, while two remote sensors are placed on the centre weight and the starboard door.

The three sensors communicate using special transverse acoustic links. Using these links the twin spread sensor system measures the exact distance between the three sensors.



(CD012200-100)

The following Simrad catch monitoring sensors can be used to measure single and dual spread:

- PI Spread (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PI Spread/Depth (with a PI Remote or a PI Remote/Depth sensor on the other door)
- PX MultiSensor

Tip

When the PX MultiSensor is used to measure spread, the remote sensor must be a second PX MultiSensor. The PI Remote sensor can not be used.

### Related topics


- *'Twin Spread' sensor view description* on page 133
- *'Twin spread' trend view description* on page 155
- *Selecting a sensor for twin spread measurement* on page 66
- *Twin spread measurements and sensors* on page 254
- *Select Sensors dialog box* on page 197

## About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

Important

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

Note

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

## About the Simrad PI Spread sensor


This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MaxiCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

#### About the Simrad PI Remote sensor


This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MiniCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup.

- Remote ID

  The Remote ID you select must match the Remote ID programmed for PI Spread sensor.

  In a twin spread system, you must select a Remote sensor combination; **1 and 3** or **2 and 4**.

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

### Spread/Depth measurements and sensors

The purpose of the spread/depth dual measurement is to check both the water depth and the distance between the two trawl doors using a single sensor.

Tip

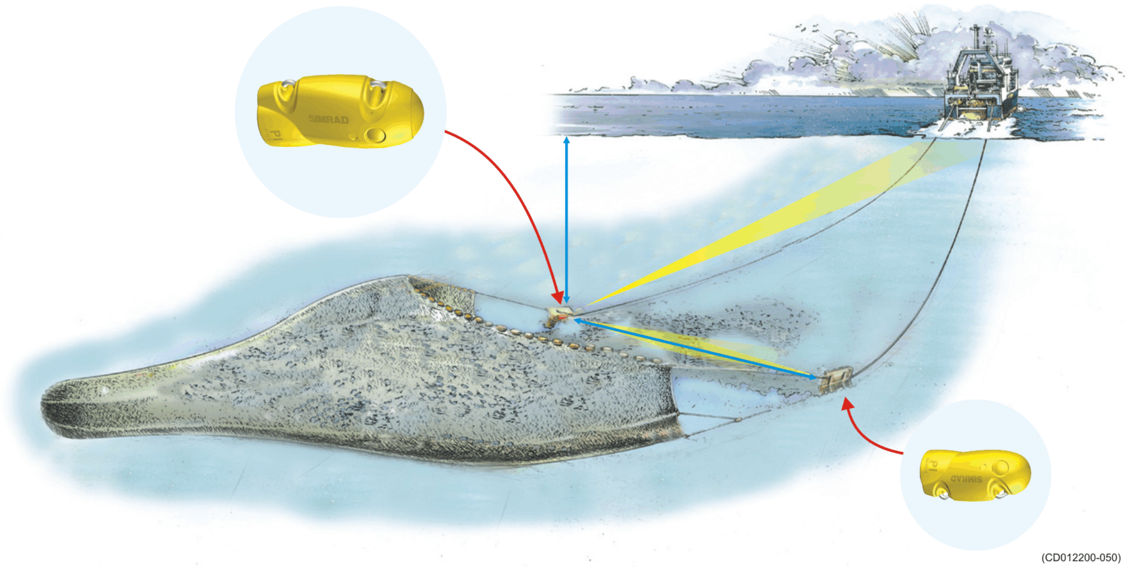
The Spread/Depth sensor view was originally provided exclusively for the Simrad PI Spread/Depth sensor. You may however set up one PX MultiSensor to do the same measurements, and still use this sensor view.

---

The PI Spread/Depth sensor thus contains both a pressure sensor to measure the water depth, and a spread sensor to measure the distance to the remote sensor on the other trawl door. The PI Spread/Depth sensor has been developed to be used on both bottom and pelagic trawls.

The sensor is normally installed on the port trawl door using an adapter.

With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.




The following Simrad catch monitoring sensors can be used to measure both spread and depth simultanously:

- PI Spread/Depth (with a PI Remote sensor on the other door)
- PX MultiSensor

**Important**

The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

**Tip**

When the PX MultiSensor is used to measure spread, the remote sensor must be a second PX MultiSensor. The PI Remote sensor can not be used.

### Related topics


- *'Spread/Depth' sensor view description* on page 135
- *Selecting a dual sensor for spread and depth measurements* on page 78
- *Setting up spread and depth sensors to measure vertical geometry* on page 85
- *Spread/Depth measurements and sensors* on page 257

## About the Simrad PX MultiSensor

The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.


**Important**

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

**Note**

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

## About the Simrad PI Spread/Depth sensor

This is a dual purpose Simrad catch monitoring sensor. It is designed to do two measurements simultanously. Both are fixed, and they can not be changed. This sensor will seize two communication channels on your PI50.


**Important**

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MaxiCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

### About the Simrad PI Remote sensor

This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.


Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MiniCharger**.

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup.

- Remote ID

  The Remote ID you select must match the Remote ID programmed for PI Spread sensor.

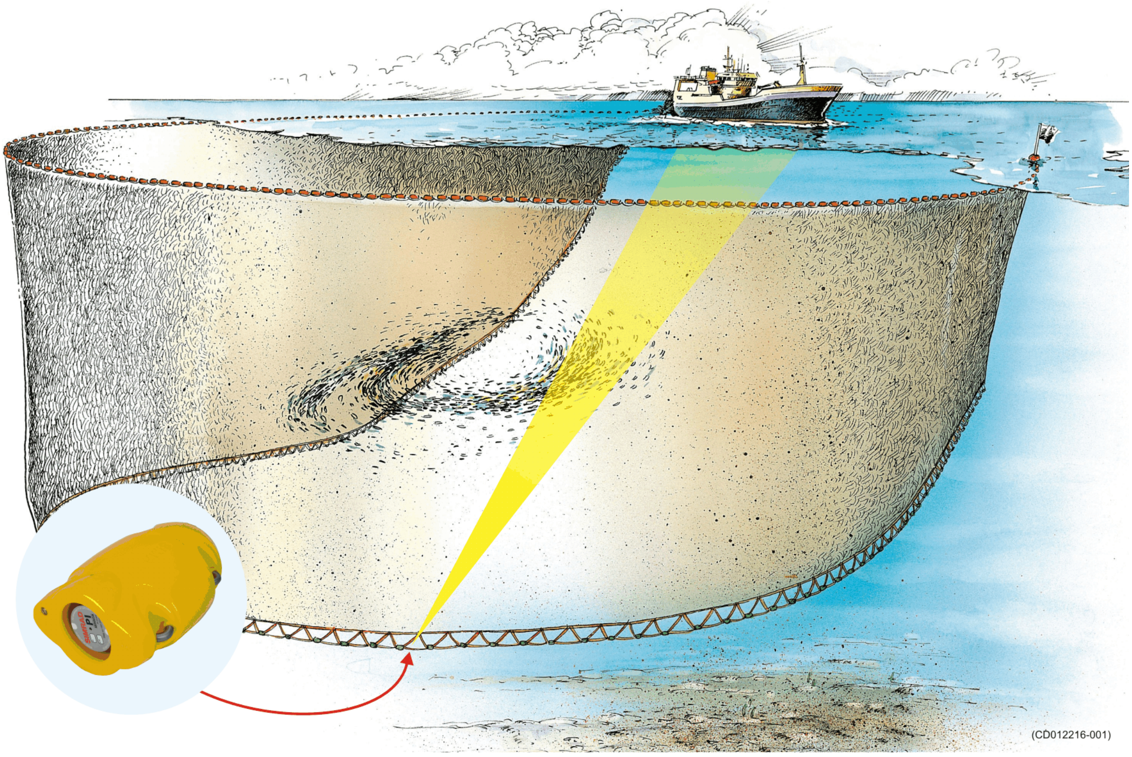
  In a twin spread system, you must select a Remote sensor combination; **1 and 3** or **2 and 4**.

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

## Temperature measurements and sensors

The Simrad temperature sensor tells you the exact sea water temperature while you are fishing.

The water temperature is an important parameter. Fish and bait are temperature sensitive, and they are normally found within specific temperature zones for feeding and spawning. However, the temperature layers in the water are constantly changing, and for this reason the temperature must be monitored constantly.




The following Simrad catch monitoring sensors can be used to measure temperature:

- PS Temperature
- PI Temperature
- PX MultiSensor

Important

The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

## Related topics


- *'Temperature' sensor view description* on page 138
- *'Temperature' trend view description* on page 155
- *Selecting a sensor for temperature measurement* on page 68
- *Temperature measurements and sensors* on page 260
- *Select Sensors dialog box* on page 197

## About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

Important

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

Note

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

## About the Simrad PI/PS Temperature sensors


This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MiniCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

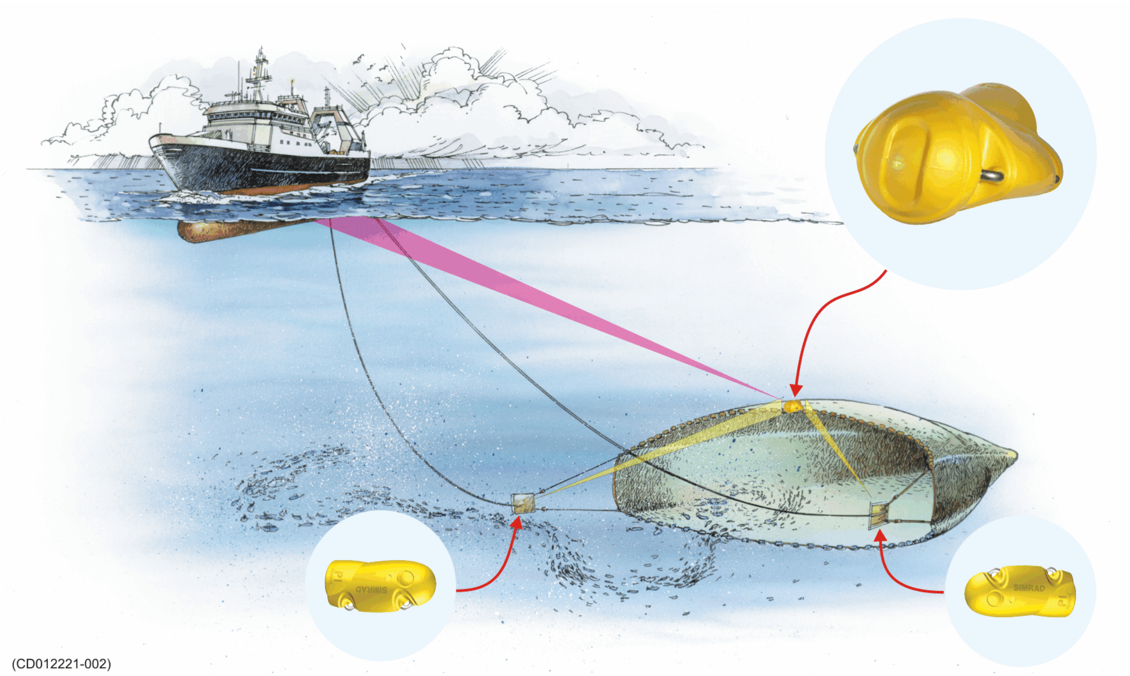
*The **Channel number** must be unique for each sensor in simultaneous use.*

## Geometry measurements and sensors

The purpose of the geometry measurement is to monitor the geometry of your trawl or danish seine – that is the relative position between the trawl doors.

The measurement is made by checking the distances between the centre of the headrope above the trawl opening (or the footrope at the bottom) and each of the trawl doors or wing ends. If these distances are not identical the trawl (or danish seine) will be skewed and unbalanced, and this reduces the catch efficiency.

The Simrad geometry sensors have been developed to be used on both bottom and pelagic trawls, as well as pair trawls and danish seiners.



(CD012221-002)

The following Simrad catch monitoring sensors can be used to measure geometry:

- PX MultiSensor

  You need three sensors. One must be set up as the “geometry” sensor and placed behind the headrope. The two others must be set up as “remote” sensors and placed on each trawl door.

**Important**

When a PX MultiSensor is placed on the trawl door for geometry measurements, it must be placed “backwards” with the tip of the sensor pointing towards the headrope.

**Tip**

You can also use one PX MultiSensor behind the headrope and two PI Mini-R transponders on the trawl doors.

- PI Geometry

  You need one PI Geometry sensor, and two PI Mini-R transponders. The PI Geometry sensor is placed behind the headrope, while the two PI Mini-R transponders are mounted on the trawl doors (or trawl wings).

**Related topics**

- *‘Geometry’ sensor view description* on page 141
- *‘Geometry Differential’ sensor view description* on page 143
- *‘Geometry’ trend view description* on page 156
- *Selecting a sensor for geometry measurement* on page 70
- *Geometry measurements and sensors* on page 263

## About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

**Important**

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

**Note**

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

## About the Simrad PI Geometry sensor

This is a dual purpose Simrad catch monitoring sensor. It is designed to do two measurements simultanously. Both are fixed, and they can not be changed. This sensor will seize two communication channels on your PI50.

**Tip**

In order to “save “ a communication channel on your PI50 system, you can set up one of the two Geometry Differential sensor views.

---

**Important**

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MaxiCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

*It is very important that the* ***Channel number*** *and* ***Update Rate*** *parameters defined for each sensor in the* ***Select Sensors*** *dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The* ***Channel number*** *must be unique for each sensor in simultaneous use.*

### About the Simrad PI Mini-R transponders

This is a single purpose Simrad catch monitoring sensor. It is only designed to do this specific measurement.

Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MiniCharger**.

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup.

- Mini-R ID

  The Mini-R ID you select must match the Remote ID programmed for PI Geometry sensor.

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

## Height/Depth measurements and sensors

The purpose of the height/depth dual measurement is to simultaneously check both the water depth and the distance from the sensor and down to the bottom.

Tip

The Height/Depth sensor view was provided exclusively for the Simrad PI SeineSounder sensor. You may however set up one PX MultiSensor to do the same measurements, and then use this sensor view.

The Simrad PI SeineSounder sensor contains both a pressure sensor to measure the water depth, and a small echo sounder to measure the height above the bottom.

It has been developed to be used on both bottom and pelagic trawls, as well as on purse and Danish seiners. The sensor must be installed in two different ways depending on the application. On a trawl, it is mounted horizontally behind the headrope. On a purse seine, it is mounted vertically below the footrope.

**Important**

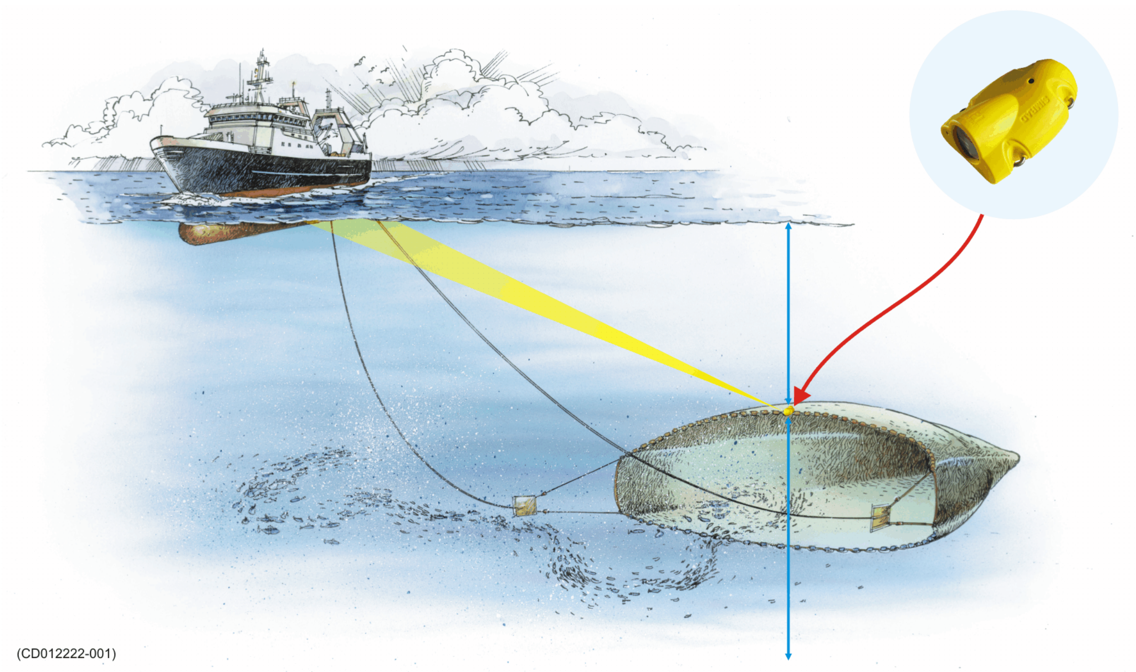
In order to provide the two Simrad PI SeineSounder applications and mounting methods, the echo sounder inside the sensor has been equipped with two transducers. By means of a "sensor key" you can easily define which transducer to use.

- Trawl: Use the short bolt
- Purse seine: Use the long bolt

Provided with the sensor is a "gift box" with two sensor keys. These are two special bolts, and by means of magnetism inside the bolts, these will select which echo sounder transducer to use. The bolts will also act as water detectors, and that means that they will slowly disintegrate. When you mount the sensor on a trawl or a purse seine, it is therefore important that you use the correct key:

---

With the PI and PS Depth sensors, three depth versions are available. These are set up for maximum depth 300 m, 600 m or 1000 m. The depth range is fixed by the factory, and can not be changed in the PI Configurator utility. The Simrad PX MultiSensor is set to a fixed 1000 meters range.



The following Simrad catch monitoring sensors can be used to measure both depth and height simultanously:

- PI SeineSounder
- PX MultiSensor

  Important

  The PX MultiSensor must be equipped with a dedicated lid to make this measurement.

### Related topics

- *'Height/Depth' sensor view description* on page 145
- *Selecting a dual sensor for height and depth measurements* on page 76
- *Height/Depth measurements and sensors* on page 266

## About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

Important

To charge this sensor, use the **Simrad PX Charger**.

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

Note

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

### About the Simrad PI SeineSounder sensor


This is a dual purpose Simrad catch monitoring sensor. It is designed to do two measurements simultanously. Both are fixed, and they can not be changed. This sensor will seize two communication channels on your PI50.

In order to provide the two Simrad PI SeineSounder applications and mounting methods, the echo sounder inside the sensor has been equipped with two transducers. By means of a "sensor key" you can easily define which transducer to use.

- Trawl: Use the short bolt
- Purse seine: Use the long bolt

Provided with the sensor is a "gift box" with two sensor keys. These are two special bolts, and by means of magnetism inside the bolts, these will select which echo sounder transducer to use. The bolts will also act as water detectors, and that means that they will slowly disintegrate. When you mount the sensor on a trawl or a purse seine, it is therefore important that you use the correct key:

Important

To charge this sensor, use the **Simrad PI Charger** or the **Simrad PI MaxiCharger**.

---

Unless you can use the default communication parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Update rate

To do this, use the **PI Configurator** program, or ask your authorized dealer to do it for you.

Note

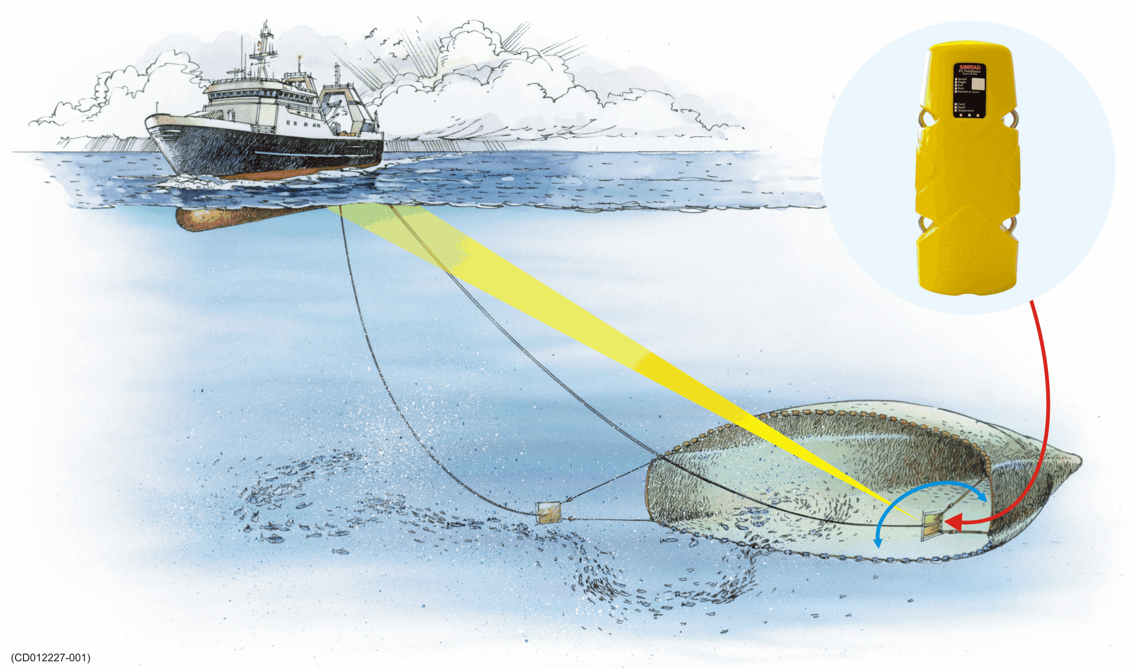
*It is very important that the **Channel number** and **Update Rate** parameters defined for each sensor in the **Select Sensors** dialog box matches the corresponding parameters programmed into the sensor. If these vital parameters do not match, you will not receive information from the sensor.*

*The **Channel number** must be unique for each sensor in simultaneous use.*

---

## Pitch measurements and sensors

The pitch measurement allows you to monitor the movements of the trawl door. If the door tilts forward or backwards in an uncontrolled manner, you are able to detect this immediately.



(CD012227-001)

The following Simrad catch monitoring sensors can be used to measure pitch:

- PX MultiSensor

### Related topics


- *'Pitch' sensor view description* on page 148
- *'Pitch' trend view description* on page 157
- *Selecting a sensor for pitch angle measurement* on page 75
- *Pitch measurements and sensors* on page 269
- *Select Sensors dialog box* on page 197

### About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

Important

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

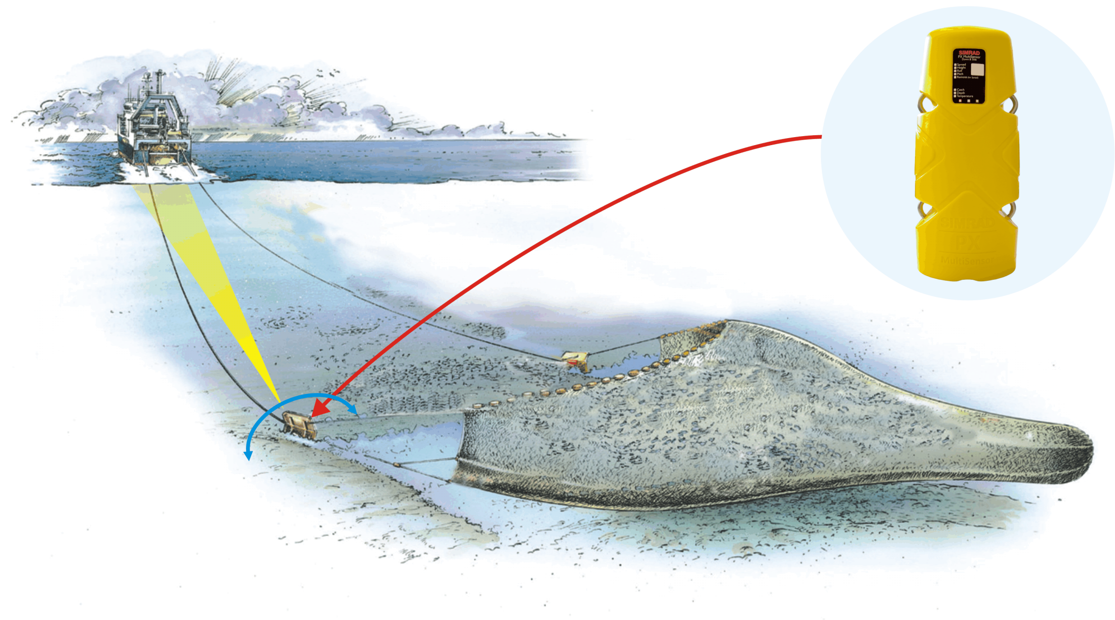
Note

*The* ***Channel Number*** *parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

## Roll measurements and sensors

The roll measurement allows you to monitor the movements of the trawl door. If the door tilts sideways in an uncontrolled manner, you are able to detect this immediately.



(CD012228-001)

The following Simrad catch monitoring sensors can be used to measure roll:

- PX MultiSensor

### Related topics


- *'Roll' sensor view description* on page 149
- *'Roll' trend view description* on page 157
- *Selecting a sensor for roll angle measurement* on page 73
- *Roll measurements and sensors* on page 271

## About the Simrad PX MultiSensor


The Simrad PX MultiSensor is a multi purpose catch monitoring sensor. It is designed to make several different measurements, but only two at the time.

**Important**

To charge this sensor, use the **Simrad PX Charger**.

---

Unless you can use the default communication and measurement parameters programmed by Simrad, you must set up the following important parameters to match your system setup:

- Communication channel
- Type of measurement(s) to make

To do this, use the **PX Configurator** program, or ask your authorized dealer to do it for you.

**Note**

*The **Channel Number** parameter is vital. The communication channel number you choose here must comply to the channel number programmed into the sensor. If these do not match, the communication will not work. By default, the channel number will match the factory setting.*

---

# About catch monitoring sensor configuration

All sensors are provided from Simrad with predefined communication channels and update rates.

Important

In order to allow the information from the various sensors to be accepted and understood by the PI50, the receiver must be set up correctly. This means that you must tell the receiver that the sensor exists by entering the sensor type, communication channels and update rate.

---

By means of the PI Configurator or PX Configurator programs, these parameter settings may be modified to suit your operational preferences.

**Topics**



## Default communication channels and update rates

See the table below for the initial values for the communication channels and update rates for the various PI and PX catch monitoring sensors.

Note

*The information is these tables were correct when this documentation was published. Consult* [*http://www.simrad.com*](http://www.simrad.com) *for any changes to the default communication channels and update rates.*

---

### Default communication channels and update rates for PI and PS catch monitoring sensors

| Sensor/Measurement | Communication channel(s) | Update rate |
|---|---|---|
| PI/PS Bottom Contact | 6 | Normal |
| PI/PS Catch | 4 | Normal |
| PI/PS Depth | Depth 300M: 16<br>Depth 600M: 12<br>Depth 1000M: 10 | Fast<br>Fast<br>Fast |
| PI Height | 14 | Normal |
| PI SeineSounder | Depth 300M: 3<br>Depth 600M: 9<br>Depth 1000M: 1<br>Height: 14 | Fast<br>Fast<br>Normal<br>= Depth |

| Sensor/Measurement | Communication channel(s) | Update rate |
|---|---|---|
| PI Remote/Depth | Depth 300M: 11<br>Depth 600M: 15<br>Depth 1000M: 13 | Normal<br>Normal<br>Normal |
| PI Spread | 2 | Normal |
| PI Spread/Depth | Depth 300M: 16<br>Depth 600M: 12<br>Depth 1000M: 10<br>Spread: 2 | Normal<br>Normal<br>Normal<br>Normal |
| PI Twin Spread | 2 and 7 | Normal |
| PI/PS Temperature | 8 | Normal |
| PI Geometry | Standard: 1 and 3<br>Extended range (XT): 1 and 3<br>Differential (DF): 1 | Normal<br>Normal<br>Normal |

### Related topics


- *Changing a communication channel* on page 276
- *Changing the update rate* on page 276
- *PI and PX Configurator programs* on page 277


## Default communication channels for the PX MultiSensor

Note

*If you use the PX MultiSensor, the* ***Update Rate*** *is fixed. You must always choose Normal update rate.*

| Sensor/Measurement | Default PX Communication channel |
|---|---|
| Catch | 4 |
| Depth | 10 |
| Height | 14 |
| Spread | 2 |
| Twin Spread | 2 and 7 |
| Temperature | 8 |
| Geometry | Standard: 1 and 3<br>Differential (DF): 1 |
| Pitch | Port door: 22<br>Starboard door: 24 |
| Roll | Port door: 18<br>Starboard door: 20 |

### Related topics


- *Changing a communication channel* on page 276
- *Changing the update rate* on page 276
- *PI and PX Configurator programs* on page 277

## Changing a communication channel

It may be required to change one or more communication channels, and there may be many reasons for this.

- You have more than one of each sensor. For example, if you have three temperature sensors, they MUST communicate on three different channels.
- Other vessels near your use the same catch monitoring system (or a similar), and they have one or more of their sensors set up to the same communication channels as you have. This will create interference, as you will "read" each others sensors.
- If your sensors are set up to use communication channels too close to each other (for example, you have chosen channels 4, 5 and 6), this will limit the vessel speed. The reason for this is the Doppler effect. If the speed is too high, the Doppler will cause the transmission frequencies to change so much that they overlap, and this will create interference. The PI system will provide a warning if this is about to happen! You must then either change to other communication channels further apart, or reduce the maximum shooting speed.
- If you operate at the maximum range of the sensors, you may be able to increase this range slightly if you use lower communication channels. This is because the lower communication channels use lower transmission frequencies.

All sensors are provided from Simrad with a default communication channel. In some cases you may find that the chosen channel does not suit your operational needs, for example if you have more than one sensor of any given type. This is a decision you have to make depending on how many sensors you use, and how many of these that are identical.

**Related topics**

- *Default communication channels and update rates* on page 274

## Changing the update rate

It may be required to change the update rate on a sensor, that is how often it sends information back to the PI catch monitoring system. A high update rate will give frequent information updates, but the sensor will use more battery power. If you need your batteries to last as long as possible, you must consider lowering the update rate.

- A low update rate will provide you with fewer information updates, but the battery will last very long.
- A high update rate will give you frequent information updates, but the battery will run out faster.

All sensors are provided from Simrad with a default update rate setting. In some cases you may find that this update rate does not suit your operational needs. This is a decision you have to make depending on the local fishing conditions.

Note

*If you use the PX MultiSensor, the* ***Update Rate*** *is fixed. You must always choose Normal update rate.*

**Related topics**


- *Default communication channels and update rates* on page 274


### PI and PX Configurator programs

Simrad has developed two dedicated computer programs – the PI Configurator and the PX Configurator – to change the PS, PI and PX sensor configurations. By means of an ordinary desktop or laptop computer and a special interface unit or cable you can do this job yourself.

You can also use these programs to verify that the sensor is operational.

The PI Configurator and the PX Configurator programs can be downloaded free of charge from www.simrad.com. It will run on all computers with operating systems Microsoft® XP® and Microsoft® 7.

You can run the these programs on the same computer as the PI50, but you can not run both the PI50 and any of the configuration programs simultaneously.

If you do not require frequent configurations, you can contact you local dealer for assistance.

## Charging the catch monitoring sensors

This section explains how you shall recharge the battery in the Simrad catch monitoring sensors. All sensor and charger types are explained.

**Topics**



### Proper handling of the catch monitoring sensor battery

The operational time and service life of the catch monitoring sensor's battery rely on proper use and regular charging. Observe the following precautions, as these will have an influence on the battery performance.

- Observe the charging temperatures.
- Charge sensors regularly. Avoid draining the sensor battery completely before charging.

- Charge the sensor battery before storage, and at three-month intervals under long-term storage.
- Operational life may be initially reduced after long-term storage.
- Sensors are not damaged by being left attached to a charger for several days. However, do not store the sensor for extended periods under charge.

We recommend that a wooden box is made to keep the sensor in a secure place during charging and storage. Make openings in the bottom to drain sea water.

## Cleaning the PX charger sockets

### Purpose

This procedure provides a basic method to clean the charger sockets on the PX MultiSensor.


### Description

The charger sockets on the PX MultiSensor offer a fail-safe method for the battery charger connection. However, the sockets are exposed to sea water when the sensor is used. In order to ensure that the charging is efficient – and to reduce the wear and tear of the sockets and the charger plug – it is important that the sockets are cleaned thoroughly before charging or sensor configuration takes place.

Salt and moisture in the charger sockets will increase the transition resistance, and it will cause the charger plugs to corrode.

**Important**

The PX MultiSensor must never be charged when it is mounted in the door adapter or on the trawl.

### Prerequisites


In order to clean the sockets, you need the following:

- Pressurized air (for example from an aerosol can)
- Clean, lint free cloth
- Small brush or cotton swab

### Procedure

1. Use high pressure air, and direct the nozzle into each of the sockets. Blow out water and moisture.
2. Use a small brush or a cotton swab, and clean each socket thoroughly.
3. Wipe off the sensor with a dry lint free cloth. Pay special attention to the area close to the sensor sockets.

## Charging the Simrad PX MultiSensor using the Simrad PX Charger

### Purpose

This procedure explains how to use the Simrad PX MultiSensor Charger to charge your sensors.

**Important**

The Simrad PX MultiSensor Charger must only be used to charge the Simrad PX MultiSensor.

---

### Related topics

- *Cleaning the PX charger sockets* on page 278

### Procedure

1. Make sure that the ambient temperature is between 0 and +45°C (+32 to +113°F).

   **Tip**

   If you try to charge the sensor in ambient temperatures below 0°C (32 °F), an internal safety mechanism will prevent the charging.

2. Verify that the sensor sockets are clean and dry, and that salt residues and moisture have been removed.

   **Important**

   This is important. Salt and moisture in the sensor sockets will increase the transition resistance, and it will cause the charger plugs to corrode.

**3** Connect the 3–pin charger plug to the sockets at the end of the sensor body.

**4** Connect the charger to a mains power outlet (100 to 230 Vac).

**5** Observe that a small lamp close to the sockets on the sensor body is lit to indicate that the charger is correctly connected.

Verify that the lamp flashes once every four seconds to indicate that the charging is in progress.

**6** Observe that the indicator lamp on the charger is lit with an **Orange** colour.

This means that fast charging is in progress.

Tip

If you connect the charger to a fully charged sensor the indicator lamp on the charger will be **Orange** for a short period, and then change to **Green**. Charging is then not required.

---

**7** After some time, observe that the indicator lamp on the charger for a short period changes colour to **Yellow**.

This means that the battery has reached almost full charge.

**8** Observe that the indicator lamp on the charger changes colour to **Green**.

The sensor battery is now charged, and trickle charging has started.

Normal charging time for a fully depleted sensor is approximately three hours.

**9** Unplug the charger from the AC mains, then disconnect the charger plug from the sensor body.

Tip

The battery will not be damaged even if you leave the charger connected for a long period of time.

---

**10** Observe the small instructional booklet provided by the charger manufacturer for more information.

## Charging the PI and PS sensors using the Simrad PI Charger

### Purpose

This procedure explains how to use the Simrad PI Charger to charge your PS and PI catch monitoring sensors.

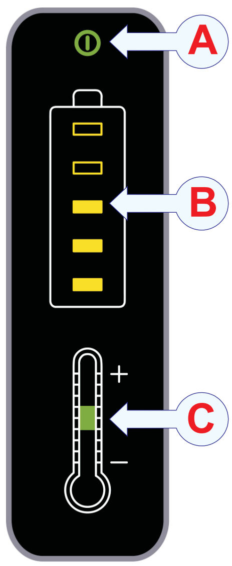
### Description

The Simrad PI Charger is an intelligent battery charger for fast and secure charging of all PS and PI sensors. The charger will automatically set up the correct charging current depending on the sensor type and the battery temperature. A "fuel meter" shows the status of the battery during the charge.

The charger communicates with the sensor at regular intervals. The fast charge cycle is controlled by data exchanged between the PI sensor and the charger. A series of safety mechanisms control the termination of the fast charging current.

#### Tip

Even though the Simrad PI Charger is designed for fast charging of the PI sensors, it can also charge the PS sensors, but only at normal charge rate. This is because the PS sensors do not communicate with the charger. A constant charge current of 58 mA is then set up by the charger regardless of the battery temperature.




**A** *+12 to 32 Vdc connected*

**B** *Fuel meter*

The number of LEDs illuminated shows the current charging status. A complete charging cycle is indicated with all "full" battery. Charging is indicated as follows:

**Fast flashing**: Fast charging in progress

**Slow flashing**: Normal charging in progress

**On/off every four seconds**: Trickle charging in progress

**C** *Battery temperature indicators*

These indicators are used during fast charging of PI sensors.

**Green**: Battery temperature between +5 and +40°C. Fast charge is enabled.

**Green** and **Blue**: Battery temperature between 0 and +5°C. Fast charge is disabled, normal charge is used.

**Green** and **Red**: Battery temperature between +40 and +50°C. Fast charge disabled, normal charge is used.

**Blue**: Battery temperature is below 0°C. No charging takes place.

**Red**: Battery temperature is above +50°C. No charging takes place.

### Procedure

1 Ensure that mounting materials on the sensor do not short circuit the charging lugs.

This may be ropes, wires, chains or other items that obstruct or short circuit the electrical connections between the charger and the sensor.

Note

*The charging clamps on the battery charger cable must be properly secured onto the charging lugs with metal against metal!*

2 Attach the charging clamps to the sensor as follows:

a Connect the **Red clamp** to the positive (+) fastening lug

b Connect the **Black clamp** to the negative (–) fastening lug

On every sensor the polarity of the fastening lugs are engraved on the sensor body using + and – characters.

3 When the charger is connected to the sensor, check the charger lamps.

Once connected, the charger will identify whether the sensor connected can be fast charged or not. This is shown by the yellow lamps. If the top lamp flashes rapidly, the sensor is fast charged.

If your sensor can be fast charged, the charger will also check the internal temperature of the sensor. The temperature is shown on the “thermometer” on the charger's front panel. If you charge a sensor that can not be fast charged, this “thermometer” does not work.

4 Observe the charge times and temperature limitations!

- **Fast charge**

  The PI Charger will first recharge the sensor battery for approximately one hour to reach 70% battery capacity, then approximately three hours to reach 100% capacity. Once fully charged, a constant trickle charge will compensate for self discharging.

  Note

  *Fast charging only applies to PI sensors!*

- **Normal charge**

  The PI Charger will first recharge the sensor battery for 16 hours for full battery capacity. This mode applies for charging PI sensors outside specified temperature range, and for all PS sensors.

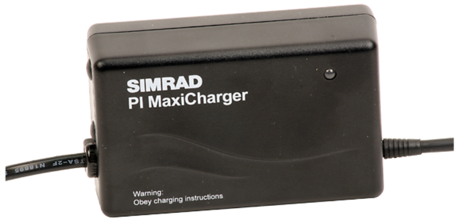
  Note

  *Charging must only take place within the specified temperature range. For best results, keep the ambient temperature between +10 and +25°C.*

  *Do not charge sensors in temperatures above +50°C or below 0°C!*

## Charging large PI sensors using the Simrad MaxiCharger

### Purpose




This procedure explains how to use the Simrad MaxiCharger to charge your PS and PI catch monitoring sensors.

### Description

The Simrad PI MaxiCharger is a plain battery charger to be used with the large PI sensors. These following sensors can be charged:

- PI Spread
- PI Height
- PI SeineSounder
- PI Spread/Depth
- PI Remote/Depth
- PI Geometry

*Caution*

*Do not use the PI MaxiCharger on any other PI or PS sensors than those listed here! The large charging current may damage the battery!*

The charger is equipped with a single indicator lamp. This lamp will change its colour to show the status of the charging process.

- **Yellow**: The charger is connected to 230 Vac, it has not been connected to the sensor, and it is ready for use.
- **Orange/Red**: The charger is connected to a sensor, and fast charging is in progress.
- **Green with short yellow flashes**: Top charging is in progress.
- **Green**: Trickle charging is in progress.

Tip

The charger is provided with a small booklet from the manufacturer (Mascot). Read this booklet before you put the charger to work!

### Procedure

**1** Connect the charger to 230 Vac, and check that the charger lamp is lit in yellow.

**2** Ensure that mounting materials on the sensor do not short circuit the charging lugs.

This may be ropes, wires, chains or other items that obstruct or short circuit the electrical connections between the charger and the sensor.

Note

*The charging clamps on the battery charger cable must be properly secured onto the charging lugs with metal against metal!*

**3** Attach the charging clamps to the sensor as follows:

  **a** Connect the **Red clamp** to the positive (+) fastening lug

  **b** Connect the **Black clamp** to the negative (–) fastening lug

  On every sensor the polarity of the fastening lugs are engraved on the sensor body using + and – characters.

**4** When the charger is connected to the sensor, check the charger lamps.

  After a few seconds, the lamp on the charger will change from yellow to orange/red. This means that fast charging is in progress.

  When the battery in the sensor has reached 90% capacity the lamp will change from orange/red to green with short yellow flashes. This means that top charging is in progress.

  When the battery is fully charged, the lamp turns steady green. Trickle charging is now active. You can safely allow trickle charging for long periods of time.

## Charging small PI and PS sensors using the Simrad MiniCharger

### Purpose

This procedure explains how to use the Simrad MiniCharger to charge your PS and PI catch monitoring sensors.


### Description

The Simrad PI MiniCharger is a plain battery charger to be used with the small PI sensors. These following sensors can be charged:

- PI Bottom Contact
- PI Catch
- PI Depth
- PI Temperature
- PI Remote (small version)
- PI Mini-R responder

Tip

You may use the Simrad PI MiniCharger to charge the large PI sensors too, but due to the small charge current, this will not be efficient.

---

The charger is equipped with a single indicator lamp. This lamp will change its colour to show the status of the charging process.

- **Yellow**: The charger is connected to 230 Vac, it has not been connected to the sensor, and it is ready for use.
- **Orange/Red**: The charger is connected to a sensor, and fast charging is in progress.
- **Green with short yellow flashes**: Top charging is in progress.

- **Green**: Trickle charging is in progress.

Tip

The charger is provided with a small booklet from the manufacturer (Mascot). Read this booklet before you put the charger to work!

### Procedure

**1** Connect the charger to 230 Vac, and check that the charger lamp is lit in yellow.

**2** Ensure that mounting materials on the sensor do not short circuit the charging lugs.

This may be ropes, wires, chains or other items that obstruct or short circuit the electrical connections between the charger and the sensor.

Note

*The charging clamps on the battery charger cable must be properly secured onto the charging lugs with metal against metal!*

**3** Attach the charging clamps to the sensor as follows:

**a** Connect the **Red clamp** to the positive (+) fastening lug

**b** Connect the **Black clamp** to the negative (–) fastening lug

On every sensor the polarity of the fastening lugs are engraved on the sensor body using + and – characters.

**4** When the charger is connected to the sensor, check the charger lamps.

After a few seconds, the lamp on the charger will change from yellow to orange/red. This means that fast charging is in progress.

When the battery in the sensor has reached 90% capacity the lamp will change from orange/red to green with short yellow flashes. This means that top charging is in progress.

When the battery is fully charged, the lamp turns steady green. Trickle charging is now active. You can safely allow trickle charging for long periods of time.

## Charging PS sensors using the Simrad PS Charger

### Purpose

This procedure explains how to use the Simrad PS Charger to charge your PS catch monitoring sensors.


### Description

The Simrad PS Charger is an battery charger for secure charging of the Simrad PS and PI sensors. It can be used on the following sensors:

- All PS sensors

- PI Bottom Contact
- PI Catch
- PI Depth
- PI Temperature
- PI Remote (small version)

*Caution*

*Do not use the Simrad PS Charger to charge other PI sensors that are not listed here.*

---

Tip

Even though the PS Charger is designed for charging the PS sensors, it can also charge the PI sensors, but only at normal charge rate.

---

### Procedure

**1** Connect the charger to 230 Vac or 115 Vac.

The AC voltage required by the charger is printed on the panel.

**2** Ensure that mounting materials on the sensor do not short circuit the charging lugs.

This may be ropes, wires, chains or other items that obstruct or short circuit the electrical connections between the charger and the sensor.

Note

*The charging clamps on the battery charger cable must be properly secured onto the charging lugs with metal against metal!*

---

**3** Attach the charging clamps to the sensor as follows:

**a** Connect the **Red clamp** to the positive (+) fastening lug

**b** Connect the **Black clamp** to the negative (–) fastening lug

On every sensor the polarity of the fastening lugs are engraved on the sensor body using + and – characters.

**4** When the charger is connected to the sensor, check the charger lamps.

It will flash once every four seconds during charging.

**5** Observe the charge times and temperature limitations.

It will take approximately 16 hours to charge a battery to its full capacity.

Note

*Charging must only take place within the specified temperature range. For best results, keep the ambient temperature between +10 and +25°C.*

*Do not charge sensors in temperatures above +50°C or below 0°C!*

---

Tip

If the charger lamp is illuminated, but the sensor lamp does not flash every four seconds, the battery is not being charged properly. Most likely, this is because the sensor was not switched off when the charger was connected.

To correct, charge the sensor for ten minutes, then disconnect the alligator clips. Use a small wire, and make contact between the water switch sensor and one of the fastening lugs. This will cause the sensor to flash its start-up code. If not, wash the sensor in fresh water to disengage the water switch.

# Testing the catch monitoring sensors

If you wish to check the operation of a sensor before you attach it to the net, there are a few simple procedures you can do. These are not in any way accurate, but you can check that the battery has been fully charged, and that the sensor is switched on when the water switch is activated.

**Topics**


- *Simple test of the PX MultiSensor* on page 287
- *Simple test of all PI and PS sensors* on page 288
- *Checking sensors using the PI and PX Configurator programs* on page 289
- *Checking depth sensors* on page 290
- *Checking bottom, catch and rip sensors* on page 290
- *Checking the PI SeineSounder* on page 290
- *Simrad PI sensor start-up identification* on page 291


**Related topics**


- *Cleaning the PX charger sockets* on page 278


## Simple test of the PX MultiSensor

**Purpose**

This procedure provides a simple way to test that your sensor is operational

**Requirements**

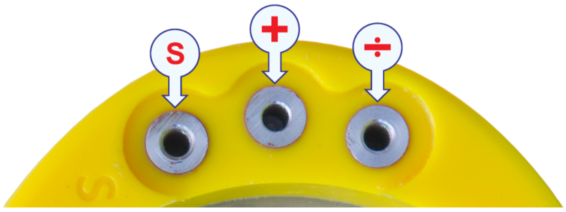
In order to do this test, you need the following equipment:

- A standard multimeter
- A short piece of wire

**Related topics**


- *Cleaning the PX charger sockets* on page 278
- *Charging the Simrad PX MultiSensor using the Simrad PX Charger* on page 279

### Procedure




1 Place the PX MultiSensor on the deck.

2 Inspect the sensor for visual damage.

Check that there are no cracks in the sensor surface, and that the charger sockets are not damaged.

3 If the sensor surface is covered with an excessive layer of salt, this may also activate the sensor and cause the battery to run out. To fix this, wash the sensor with fresh water.

4 Use a multimeter, and check the voltage between the water switch (left socket identified with an "S") and the positive (middle) or negative (right) charging socket.

If the sensor battery is fully charged, you will measure approximately 13 Vdc.

Tip

If the battery voltage is lower than approximately 8 Vdc, the sensor will switch itself off, and you will measure 0 Vdc. You must then charge the sensor.

5 Use the short piece of wire, and hold it between the water switch (left socket identified with an "S") and the negative charging socket (right hand side).

This will activate the sensor. If the sensor is operational, you will see that it gives a single flash.

## Simple test of all PI and PS sensors

### Purpose

This procedure provides a simple way to test that your sensor is operational

### Requirements

In order to do this test, you need the following equipment:

- A standard multimeter
- A short piece of wire

### Procedure

1 Place the sensor on the deck.

2 Inspect the sensor for visual damage.

Check that there are no cracks in the sensor surface, and that the charger lugs are not damaged.

Note

*If you fail to remove ropes, wires, chains or other items that obstruct or short circuit the electrical connections during charging, the lugs and the internal electronic circuitry may be damaged.*

**3** Ensure that mounting materials on the PI and PS sensor do not short circuit the charging lugs.

This may be ropes, wires, chains or other items that obstruct or short circuit the electrical connections between the positive and negative charger lugs.

If the sensor surface is covered with an excessive layer of salt, this may also activate the sensor and cause the battery to run out. To fix this, wash the sensor with fresh water.

**4** Use a multimeter, and check the voltage between the water switch and the negative charging lug.

If the sensor battery is fully charged, you will measure approximately 12 Vdc.

**5** Use a multimeter, and check the current between the water switch and the negative charging lug.

If the sensor battery is fully charged, you will measure approximately 68 µA.

**6** Use the short piece of wire, and hold it between the water switch and one of the charging lugs.

This will activate the sensor. If the sensor is operational, you will see that the internal lamp flashes. Single sensors will flash their identification status, while dual sensor will only give a single flash.

Note

*This test will not work with PI and PS Depth sensors if they are set up with the default configuration "Ping Control > 2m". The sensor will then not be activated unless it is lowered to minimum 2 meters depth. If you wish to activate a depth sensor like this you must first use the PI Configurator program and set it to "Ping Control = Always".*

## Checking sensors using the PI and PX Configurator programs

Simrad has developed two dedicated computer programs – the PI Configurator and the PX Configurator – to change the PS, PI and PX sensor configurations. By means of an ordinary desktop or laptop computer and a special interface unit or cable you can do this job yourself.

You can also use these programs to verify that the sensor is operational.

The PI Configurator and the PX Configurator programs can be downloaded free of charge from www.simrad.com. It will run on all computers with operating systems Microsoft® XP® and Microsoft® 7.

You can run the these programs on the same computer as the PI50, but you can not run both the PI50 and any of the configuration programs simultaneously.

If you do not require frequent configurations, you can contact you local dealer for assistance.

## Checking depth sensors

### Purpose

Observe this procedure to do a simple operational check of depth sensors.

### Related topics

- *Simple test of the PX MultiSensor* on page 287
- *Simple test of all PI and PS sensors* on page 288

### Procedure

1. Observe the general test procedure for all sensors.
2. Attach a solid rope to one of the charging lugs of the sensor.
3. Lower the sensor into the water from the aft deck.

   You must lower them to 3 to 5 meters depth before they are activated.
4. Verify that the PI50 reads the depth information from the sensor.

## Checking bottom, catch and rip sensors

### Purpose

Observe this procedure to do a simple operational check of bottom, catch and rip sensors.

### Related topics

- *Simple test of the PX MultiSensor* on page 287
- *Simple test of all PI and PS sensors* on page 288

### Procedure

1. Observe the general test procedure for all sensors.
2. Attach a solid rope to one of the charging lugs of the sensor.
3. Lower the sensor into the water from the aft deck.

   You must lower them to 3 to 5 meters depth before they are activated.
4. Verify that the PI50 reads the depth information from the sensor.
5. Hoist the sensor.
6. Unscrew the wire assembly.
7. Lower the sensor back into the water.
8. Verify that the status information from the sensor has changed.

## Checking the PI SeineSounder

### Purpose

Observe this procedure to do a simple operational check of the PI SeineSounder.

### Related topics

- *Simple test of all PI and PS sensors* on page 288

### Procedure

1 Observe the general test procedure for all sensors.

2 Check that one of the water switch screws is properly inserted.

- **Short screw**: Height and depth operation
- **Long screw**: SeineSounder and depth operation

Note

*If the sensor is lowered into the water with the water switch screw missing, the sensor will be switched off after just a few minutes.*

## Simrad PI sensor start-up identification

### Purpose

This procedure explains how you can test the PI sensors by observing the start-up identification.

### Description

If you use a short piece of wire to short the sensor's water switch and a charging lug the sensor will be activated. The sensor will then flash its individual LED identification codes.

Note

*This will not happen if the sensor is connected to a battery charger.*

The identification code for single PI sensors is provided as follows:

1 One long flash: It has a duration of approximately 1 second.

2 One start flash: This signals that the first digit of the channel number is next.

3 None, one, two or three short flashes: The number of short flashes signifies the first digit of the programmed channel number.

4 A second start flash: This signals that the second digit of the channel number is next.

5 None to nine short flashes: The number of short flashes signifies the second digit of the programmed channel number.

### Procedure

1 Use a short piece of wire to short the sensor's water switch and a charging lug.

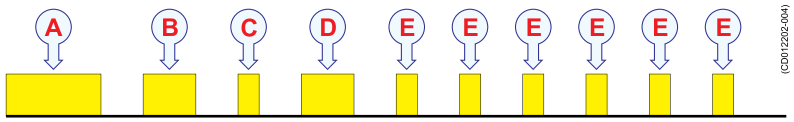
2 Observe that the internal LED flashes the activation code.

Note

*Single sensors will flash the identification code as described here.*

*Dual sensors will only give a single flash to acknowledge the activation.*

*Example 10 Show channel, example; Channel #16 at start-up*




**A** *A one second "long flash"*

**B** *A start "flash"*

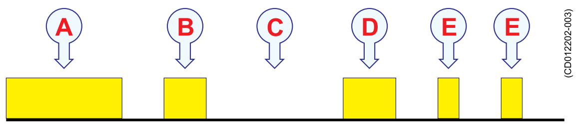
**C** *One "quick flash" (first digit of 16 is 1)*

**D** *A start "flash"*

**E** *Six "quick flashes" (second digit of 16 is 6)*

Normal operation starts.

*Example 11 Show channel, example; Channel #2 at start-up*




**A** *A one second "long flash"*

**B** *A start "flash"*

**C** *No short flashes (first digit of 02 is 0)*

**D** *A start "flash"*

**E** *Two short flashes (second digit of 02 is 2)*

Normal operation starts.

# Telegram formats

This chapter details the standard NMEA, third party and proprietary Simrad telegrams, as well as – if applicable – dedicated file formats for data transfer.

According to their web site, the *National Marine Electronics Association (NMEA)* is the unifying force behind the entire marine electronics industry, bringing together all aspects of the industry for the betterment of all in our business.

All NMEA, third party and proprietary telegrams available are not described here, only those used by the PI50. If the specifications here differ from the original specifications published by NMEA, the specifications issued by NMEA must be regarded as the correct version.

**Topics**



**Related topics**

- http://www.nmea.org.

# About the NMEA telegram format

The Simrad PI50 can send and receive information to and from several different peripherals. All transmissions take place as **telegrams** with data sentences. Each telegram has a defined format and length.

The **NMEA 0183** standard is the most common protocol used to receive and transmit data to and from peripheral sensors. A parametric sentence structure is used for all NMEA data. The sentence start with a “$” delimiter, and represent the majority of approved sentences defined by the standard. This sentence structure, with delimited and defined data files, is the preferred method for conveying information.

For more information about the NMEA standard, the format and the data sentences, refer to their official publications. Their document *NMEA 1083 - Standard for interfacing marine electronic devices* explains the formats in detail. The document can be obtained from http://www.nmea.org.

**Topics**



## National Marine Electronics Association (NMEA)

The *National Marine Electronics Association (NMEA)* has defined communication standards for maritime electronic equipment, and the PI50 echo sounder conforms to these standards. The most common standard is *NMEA 0183*, and the National Marine Electronics Association describes it as follows:

> The NMEA 0183 Interface Standard defines electrical signal requirements, data transmission protocol and time, and specific sentence formats for a 4800 baud serial data bus. Each bus may have only one talker but many listeners.
>
> — *National Marine Electronics Association*

For more information about the National Marine Electronics Association and the NMEA 0183 standard, refer to the organization's web site at:

- http://www.nmea.org

## NMEA telegram principles

To move information between two electronic units, the data are collected in **telegrams**. The content (protocol) of each telegram is defined by the NMEA standard, and several telegram types exist to allow different type of data to be distributed.

The phrase **datagram** is also frequently used about this communication method.

Unless you wish to write your own software, you do not need to know how these telegrams are designed. However, whenever you set up equipment interfaces, you need to ensure that each system on your communication line is set up to send and receive the same telegram. The standard allows one system to send data (a “talker") and several others to receive data simultaneously ("listeners") on the same line. Therefore, you must ensure that all products receiving data on a communication line is set up to receive the same telegram(s) that the transmitting product provides.

## Standard NMEA 0183 communication parameters

The communication parameters defined for **NMEA 0183** are:

- **Baudrate**: 4800 bits per second
- **Data bits**: 8
- **Parity**: None
- **Stop bits**: One

Some instruments will also offer other parameters and/or choices.

## NMEA sentence structure

The following provides a summary explanation of the approved parametric sentence structure.

```
$aaccc,c—c*hh<CR><LF>
```

1. **“$”**: *Start of sentence* (Hex: 24).
2. **aaccc**: *Address field*. The first two characters (**aa**) identifies the *Talker ID*, while the last three characters are the *Sentence formatter* mnemonic code identifying the data type and the string format of the successive fields.
3. **“,”**: *Field delimiter* (Hex: 2C). This character starts each field except the address and checksum fields. If it is followed by a null field, it is all that remains to indicate no data in the field.
4. **c—c**: *Data sentence block*. This is a series of data fields containing all the data to be transmitted. The data field sentence is fixed and identified by the *Sentence formatter* in the address field. Data fields may be of variable lengths, and they are preceded by the *Field delimiter*.
5. **“*”**: *Checksum delimiter* (Hex: 2A). This delimiter follows the last field of the sentence, and indicates that the following two alphanumerical characters contain the checksum.
6. **hh**: *Checksum*
7. **<CR><LF>**: *Terminates sentence*

### Proprietary telegrams

In some proprietary telegrams received from other Kongsberg Maritime equipment, the **$** character is replaced by the @ character. The checksum field may then not be in use.

# Specification of NMEA telegrams

All standard NMEA telegrams supported by the PI50 are specified here. The information is extracted from the original NMEA specifications. If additional details about the individual telegram formats are required, see the original source file.

### Topics



## DBS Depth below surface

This telegram provides the current depth from the surface. The telegram is no longer recommended for use in new designs.

It is often replaced by the **DPT** telegram.

### Format

```
$--DBS,x.x,f,y.y,M,z.z,F*hh<CR><LF>
```

### Format description

**1** – – = talker identifier

**2** **DBS** = telegram identifier

**3** **x.x,f** = depth below surface in feet

**4** **y.y,M** = depth below surface in meters

**5** **z.z,F** = depth below surface in fathoms

### Related topics


- *I/O Setup dialog box* on page 222


## GLL Geographical position latitude/longitude

This telegram is used to transfer latitude and longitude of vessel position, time of position fix and status from a global positioning system (GPS).

### Format

```
$--GLL,llll.ll,a,yyyyy.yy,a,hhmmss.ss,A,a*hh<CR><LF>
```

### Format description

1 – – = talker identifier

2 **GLL** = telegram identifier.

3 **llll.ll** = latitude north/south, position in degrees, minutes and hundredths. Characters **N** (North) or **S** (South) identifies the bearing.

4 **a** = North/South. Characters **N** (North) or **S** (South) identifies the bearing.

5 **yyyyy.yy,a** = longitude east/west, position in degrees, minutes and hundredths.

6 **a** = West/East. Characters **W** (West) or **E** (East) identifies the bearing.

7 **hhmmss.ss** = coordinated universal time (UTC) of position.

8 **A** = status, characters **A** (data valid) or **V** (data not valid) are used.

9 **a** = mode indicator.

### Related topics

## GGA Global positioning system fix data

This telegram contains time, position and fix related data from a global positioning system (GPS).

### Format

```
$--GGA,hhmmss.ss,llll.ll,a,yyyyy.yy,a,
x,zz,d.d,a.a,M,g.g,M,r.r,cccc*hh<CR><LF>
```

### Format description

1 – – = talker identifier

2 **GGA** = telegram identifier

3 **hhmmss.ss** = coordinated universal time (UTC) of position

4 **llll.ll** = latitude north/south, position in degrees, minutes and hundredths.

5 **a** = North/South. Characters **N** (North) or **S** (South) identifies the bearing.

6 **yyyyy.yy** = longitude east/west, position in degrees, minutes and hundredths.

7 **a** = West/East. Characters **W** (West) or **E** (East) identifies the bearing.

8 **x** = GPS quality indicator (refer to the NMEA standard for further details)

9 **zz** = number of satellites in use, 00 to 12, may be different from the number in view

10 **d.d** = horizontal dilution of precision

11 **a.a,M** = altitude related to mean sea level (geoid) in meters

12 **g.g,M** = geoidal separation in meters

13 **r.r** = age of differential GPS data

14 **cccc** = differential reference station identification, 0000 to 1023

### Related topics

## HDG Heading, deviation and variation

This telegram contains the heading from a magnetic sensor, which if corrected for deviation will produce magnetic heading, which if offset by variation will provide true heading.

### Format

```
$--HDG,x.x,z.z,a,r.r,a*hh<CR><LF>
```

### Heading conversions

To obtain magnetic heading: Add easterly deviation (E) to magnetic sensor reading, or subtract westerly deviation (W) from magnetic sensor reading.

To obtain true heading: Add easterly variation (E) to magnetic heading, or subtract westerly variation (W) from magnetic heading.

### Format description

**1** – – = talker identifier

**2** **HDG** = telegram identifier

**3** **x.x** = magnetic sensor heading, degrees

**4** **z.z,a** = magnetic deviation, degrees east/west

**5** **r.r,a** = magnetic variation, degrees east/west

### Related topics

- *Navigation dialog box; Heading tab* on page 218
- *Select Inputs dialog box* on page 235

## HDM Heading, magnetic

This telegram contains vessel heading in degrees magnetic. The telegram is no longer recommended for use in new designs.

It is often replaced by the **HDG** telegram.

### Format

```
$--HDM,x.x,M*hh<CR><LF>
```

### Format description

**1** – – = talker identifier

**2** **HDM** = telegram identifier

**3** **x.x** = heading in degrees, magnetic

### Related topics

- *Navigation dialog box; Heading tab* on page 218

- *Select Inputs dialog box* on page 235

## HDT Heading, true

This telegram is used to transfer heading information from a gyro.

### Format

```
$--HDT,x.x,T*hh<CR><LF>
```

### Format description

**1** – – = talker identifier

**2** **HDT** = telegram identifier

**3** **x.x,T** = heading, degrees true

### Related topics

## RMC Recommended minimum specific GNSS data

This telegram contains time, date, position, course and speed data provided by a global navigation satellite system (GNSS) receiver.

### Format

```
$--RMC,hhmmss.ss,A,llll.ll,a,yyyyy.yy,a,
x.x,z.z,ddmmyy,r.r,a,a*hh<CR><LF>
```

### Format description

**1** – – = talker identifier

**2** **RMC** = telegram identifier

**3** **hhmmss.ss** = coordinated universal time (UTC) of position fix

**4** **A** = status, characters **A** (data valid) or **V** (Navigation receiver warning) are used.

**5** **llll.ll,a** = latitude nort/south. Characters **N** (North) or **S** (South) identifies the bearing.

**6** **yyyyy.yy.a** = longitude east/west. Characters **E** (East) or **W** (West) identifies the bearing.

**7** **x.x** = speed over ground, knots

**8** **z.z** = course over ground, degrees true

**9** **ddmmyy** = date

**10** **r.r,a** = magnetic variation, degrees east/west. Characters **E** (East) or **W** (West) identifies the bearing.

**11** **a** = mode indicator

### Related topics

- *Navigation dialog box; Position tab* on page 212
- *Navigation dialog box; Speed tab* on page 214
- *Select Inputs dialog box* on page 235

## VHW Water speed and heading

This telegram contains the compass heading to which the vessel points and the speed of the vessel relative to the water.

### Format

```
$--VHW,x.x,T,x.x,M,x.x,N,x.x,K*hh<CR><LF>
```

### Format description

**1** – – = talker identifier

**2** **VHW** = telegram identifier

**3** **x.x,T** = heading, degrees true

**4** **x.x,M** = heading, degrees magnetic

**5** **x.x,N** = speed relative to water, knots, resolution 0.1

**6** **x.x,K** = speed relative to water, km/hr, resolution 0.1

### Related topics


- *Navigation dialog box; Heading tab* on page 218
- *Navigation dialog box; Speed tab* on page 214
- *Select Inputs dialog box* on page 235


## VLW Dual ground/water distance

This telegram contains the distance travelled relative to the water and over the ground.

### Format

```
$--VLW,x.x,N,y.y,N,z.z,N,g.g,N*hh<CR><LF>
```

### Format description

**1** – – = talker identifier

**2** **VLW** = telegram identifier

**3** **x.x,N** = total cumulative water distance, nautical miles.

**4** **y.y,N** = water distance since reset, nautical miles.

**5** **z.z,N** = total cumulative ground distance, nautical miles.

**6** **g.g,N** = ground distance since reset, nautical miles.

### Related topics


- *Navigation dialog box; Distance tab* on page 216
- *Select Inputs dialog box* on page 235

## VTG Course over ground & ground speed

This telegram contains the actual course and speed relative to the ground.

### Format

`$--VTG,x.x,T,y.y,M,z.z,N,g.g,K,a*hh<CR><LF>`

### Format description

1 **– –** = talker identifier

2 **VTG** = telegram identifier

3 **x.x,T** = course over ground, degrees true

4 **y.y,M** = course over ground, degrees magnetic

5 **z.z,N** = speed over ground, knots, resolution 0.1

6 **g.g,K** = speed over ground, km/hr, resolution 0.1

7 **a** = mode indicator

### Related topics

# Proprietary telegrams and formats

These are the proprietary telegrams supported by the PI50. These telegram formats have all been defined by Simrad. The telegrams are listed in alphabetical order.

**Topics**



## DBS Depth of trawl below surface

This proprietary Simrad telegram contains the depth of the trawl sensor.

**Format**

```
@IIDBS,,,x.x,M,,<CR><LF>
```

**Format description**

1 **II** = talker identifier (mandatory)

2 **DBS** = telegram identifier

3 **x.x,M** = depth in meters (0 to 2000)

## HFB Trawl headrope to footrope and bottom

This proprietary Simrad telegram contains the distance from the headrope to the footrope, and from the footrope to the bottom.

**Format**

```
@IIHFB,x.x,M,y.y,M<CR><LF>
```

**Format description**

1 **II** = talker identifier (mandatory)

2 **HFB** = telegram identifier

3 **x.x,M** = distance from headrope to footrope, meters

4 **y.y, M** = distance from footrope to bottom, meters

## PSIMP-D1 PI Sensor data

This proprietary Simrad telegram contains the type and configuration of PS and PI sensors used by the external PI catch monitoring system.

Note

*This description is not complete. For further information, contact Simrad.*

### Format

```
$PSIMP,D1,tt,dd,M,U,SNo,MNo,C,V,CR,Q,
In,SL,NL,G,Cb,error*chksum<CR><LF>
```

### Format description

1 **PS** = Talker identifier (mandatory)

2 **IMP** = Telegram identifier

3 **D1** = Sentence specifier

4 **tt** = Time of day

5 **dd** = Current date

6 **M** = Measurement type:

- D = Depth
- T = Temperature
- C = Catch
- B = Bottom
- N = No sensor
- M = Marker

7 **U** = unit, always in SI units

- M = depth and distance measurements
- C = temperature measurements

8 **SNo** = Sensor number

9 **MNo** = Measurement number

10 **C** = channel; the number (1 to 30) of the communication channel for the current data source

11 **V** = value; the magnitude of the current sensor measurement

12 **Cr** = change rate; the rate of change for the current measurement, or time counter for bottom and catch sensors

13 **Q** = quality:

14 **In** = interference:

- 0 = No interference
- 1 = Interference detected

15 **SL** = signal level – the signal level of the telemetry pulse, measured in dB

16 **NL** = noise level – the average noise level of the current channel, measured in dB

17 **G** = the current gain; 0, 20 or 40 dB.

18 **Cb** = cable quality:

- 0 = cable is not connected
- 1 = cable is OK
- 2 = a short circuit, or the hydrophone current is too large

**19** **error** = error detected – 0 when no error is detected, a number >0 indicates an error condition

**20** **chksum** = The checksum field consists of a "*" and two hex digits representing the exclusive OR of all characters between, but not including, the "$" and "*" characters

## PSIMP-D PI Sensor data

This proprietary Simrad telegram contains the type and configuration of PS and PI sensors used by the external PI catch monitoring system.

Note

*This telegram format is no longer in use. It has been replaced by PSIMP-D1. The description is not complete. For further information, contact Simrad.*

### Format

```
$PSIMP,D,tt,dd,M,U,S,C,V,Cr,Q,In,SL,NL,G,
Cb,error*chksum<CR><LF>
```

### Format description

**1** **PS** = Talker identifier (mandatory)

**2** **IMP** = Telegram identifier

**3** **D** = Sentence specifier

**4** **tt** = Time of day

**5** **dd** = Current date

**6** **M** = Measurement type:

- D = Depth
- T = Temperature
- C = Catch
- B = Bottom
- N = No sensor
- M = Marker

**7** **U** = unit; M, f or F for depth measurements, C or F for temperature measurements

**8** **S** = source; number (1, 2 or 3) of the sensor providing the current data values

**9** **C** = channel; the number (1 to 30) of the communication channel for the current data source

**10** **V** = value; the magnitude of the current sensor measurement

**11** **Cr** = change rate; the magnitude of the current depth or temperature measurement

**12** **Q** = quality:

- 0 = No connection between the sensor and the receiver
- 1 = One or two telemetry pulses are lost, current value is predicted
- 2 = The current data value is reliable

**13** **In** = interference:

- 0 = No interference
- 1 = Interference detected

**14** **SL** = signal level – the signal level of the telemetry pulse, measured in dB // 1 μPa

**15** **NL** = noise level – the average noise level of the current channel, measured in dB // 1 μPa

**16** **G** = the current gain; 0, 20 or 40 dB.

**17** **Cb** = cable quality:

- 0 = cable is not connected
- 1 = cable is OK
- 2 = a short circuit, or the hydrophone current is too large

**18** **error** = error detected – 0 when no error is detected, a number >0 indicates an error condition

**19** **chksum** = The checksum field consists of a "*" and two hex digits representing the exclusive OR of all characters between, but not including, the "$" and "*" characters

# Proprietary third party telegrams and formats

All third party telegram formats supported by the PI50 are specified here. These telegram formats are created by third party organizations, and they are supported by the PI50 to allow for interface to third party systems.

### Topics



## Atlas depth telegram

This proprietary Atlas telegram contains the current depth from two channels.

### Format

```
Dyxxxxx.xxm
```

### Format description

1. **Dy** = Channel number; **DA** is channel number 1, **DB** is channel number 2.
2. **xxxxx.xx** = depth in meters
3. **m** = meters

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