



# ***Simrad Echo sounder system***

## ***Software Release Note***

### ***Release 24.1***

This document describes the changes introduced with the new software version.

- **Software version:** 24.1
- **Upgrade from version:** 23.1

This software controls all functionality in the echo sounder system. This includes transmission and reception, interfaces with external peripherals and sensors, and all user interface.

The publication is valid for the following products:

- Simrad CP60
- Simrad ES80
- Simrad EQ50

The software license controls which product you have. The product name on the top bar changes accordingly.

Additional end-user documents related to the echo sounder system can be found on our website. This includes publications that are translated into other languages. Selected publications are also provided in IETM (*Interactive Electronic Technical Manual*) formats.

- [www.kongsberg.com/fisherysounder](http://www.kongsberg.com/fisherysounder)

**SIMRAD**  
By KONGSBERG

## Document information

- **Product:** echo sounder
- **Document:** Software Release Note
- **Document part number:** 412841
- **Document ISBN number:** N/A
- **Revision:** R
- **Date of issue:** 9 February 2024

## Copyright

*The information contained in this document remains the sole property of Kongsberg Discovery AS. No part of this document may be copied or reproduced in any form or by any means, and the information contained within it is not to be communicated to a third party, without the prior written consent of Kongsberg Discovery AS.*

## 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. You must be familiar with the contents of the appropriate manuals before attempting to operate or work on the equipment.***

***Kongsberg Discovery disclaims any responsibility for damage or injury caused by improper installation, use or maintenance of the equipment.***

## Disclaimer

*Kongsberg Discovery 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.*

## Support information

If you require maintenance or repair, contact your local dealer. You can also contact us using the following address: [support.science@kd.kongsberg.com](mailto:support.science@kd.kongsberg.com). If you need information about our other products, visit <https://www.kongsberg.com>. On this website you will also find a list of our dealers and distributors.

# Table of contents

- SOFTWARE CHANGES ..... 5**
- DO I NEED TO UPGRADE? ..... 8**
- SOFTWARE LICENSES ..... 9**
- SOFTWARE INSTALLATION..... 10**
- END-USER DOCUMENTATION ..... 11**
- UPDATED FUNCTIONS AND DIALOG BOXES..... 12**
  - ADCP information pane ..... 12
  - ADCP page ..... 17
  - ADCP Layers page ..... 21
  - Relay Output page..... 22
  - Bottom Detection dialog box ..... 25
  - Ping function..... 28
- MINIMUM COMPUTER REQUIREMENTS ..... 31**
- MINIMUM DISPLAY REQUIREMENTS ..... 34**



# Software changes

This software update solves a number of software bugs that have been reported by our users, or detected during our own product testing. New functionality is also introduced.

The following specific changes have been made.

## Multiple products supported

The new software version is valid for the following products:

- Simrad CP60
- Simrad ES80
- Simrad EQ50

The software license controls which product you have. The product name on the top bar changes accordingly.

## New presentation options in ADCP Information pane

Several changes have been made to the data presentation in the ADCP information pane.

### Show only numerical values

Select **Show only numerical values** to hide the compass rose and present the velocity information using only numerical values.

### Use Large Captions

This is an "on/off" switch. Select **Use Large Captions** to increase the size of the text in the information pane. The numerical information is moved from the bottom of the information pane to the right side of the compass rose. The numerical information from each layer is presented in separate rectangles using the same colours as the vectors inside the compass rose.

### Athwartship Drift Indicator

Even if you steer your vessel on a fixed course with a fixed speed, it will drift sideways due to the forces of the wind and the sea currents. You can use the ADCP functionality to monitor this athwartship drift in the *ADCP* information pane. The settings provided allow you to choose the reference for the athwartship drift measurements and the scale used in the readout.

The presentation of the athwartship drift appears at the bottom of the *ADCP* information pane.

- A *green* bar demonstrates that the vessel drifts towards the starboard relative to the chosen source.
- A *red* bar demonstrates that the vessel drifts towards port relative to the chosen source.

### **Vector Direction**

Each measurement of the water current velocity is presented as a vector drawn as an arrow. The length of the arrow indicates the velocity of the water. The tip of the arrow indicates the direction. In the compass rose presentation, you can choose whether the vectors should point towards the vessel or outwards from the vessel symbol.

### **Velocity Vector**

Each measurement of the water current velocity is presented as a vector drawn as an arrow. The length of the arrow indicates the velocity of the water. The tip of the arrow indicates the direction. The horizontal velocity vectors can be presented using relative or true bearings.

- Select **Geographical** to present the vector relative to the cardinal directions (north, south, east and west).
- Select **Vessel Relative** to present the vector relative to the vessel directions (fore, aft, port and starboard).
- Select **Layer Relative** to present the vector relative to one of the other layers.

➤ [ADCP information pane, page 12](#)

➤ [ADCP page, page 17](#)

➤ [ADCP Layers page, page 21](#)

### **Access to setup parameters when ADCP Information pane is docked**

You can now access the setup parameters in the **Information Pane Options** dialog box even when the information pane is docked.

### **Temperature information from transducer sensor**

You can manually adjust how often the echo sounder system shall export the temperature information.

You can adjust the timer interval from 1 to 60 seconds.

The data export takes place regardless of whether a new temperature is available from the transducer. If the reading remains unchanged, the same value is exported repeatedly at your chosen frequency.

➤ [Relay Output page, page 22](#)

### "Best bottom" introduced

A new "Best bottom" functionality has been added to the **Bottom Detection** dialog box.

In some situations, the echo sounder system may find it challenging to locate the bottom or to stay locked on an existing bottom contact. If this happens, select one of the channels to provide the "best bottom". The bottom detected by this channel is applied as the "master" depth.

Bottom measurements may differ from channel to channel due to reverberation or noise. If a channel locks on a bottom that differs from the bottom found by the master channel, it will display this depth as 0.0 metres. When you have defined a master channel, the channel will, for the next ping, search for a new bottom lock in the range offered by this master channel.

☛ [Bottom Detection dialog box, page 25](#)

### Improved visualization of minimum operational depth

A new **Auto Minimum Depth Limit** function has been added to the **Bottom Detection** dialog box on the **Active** menu.

This is an "on/off" switch. Select **Auto Minimum Depth Limit** to enable the echo sounder system to automatically calculate the minimum depth value. The calculated value ensures a valid minimum depth setting. The value is based on the current pulse length and the transducer offset. The value is specified relative to the sea surface.

☛ [Bottom Detection dialog box, page 25](#)

### Automatic start of operation when the echo sounder is turned on

The **Auto Start** function allows the echo sounder system to start "pinging" automatically when the software program starts.

You must use this functionality with care! The **Auto Start** function will start the pinging even if your vessel is in a dry dock. You must never set the echo sounder system to normal operation when the ship is in dry dock.

☛ [Ping function, page 28](#)

### New alarm

A new alarm message has been introduced to notify you if a transducer cable is shorted or broken.

### Trawl lines

The presentation of the trawl lines has been improved to make these easier to see.

### Catch sensors

Catch sensors with channel numbers higher than 60 are now accepted.

### Indonesian

The user interface can now be accessed using the Indonesian language.

# Do I need to upgrade?

This is an important update. The introduction of new functionality and improvement in the existing functionality will add value to your installation. Major new functionality has been added in this version.

We recommend that all users update their software.

An update is essential if you have an echo sounder system with the CP200 transducer and ADCP functionality.



# Software licenses

The echo sounder system needs one or more software licenses to work. Each software license code "unlocks" one transceiver for operational use with a set of predefined properties.

You do not need to obtain any new license string(s) when you update from a previous version of a licensed echo sounder system.

In order to obtain a software license you must contact one of our dealers or distributors. You can also use the request form on our website, or contact our support department directly.

Tip

---

*Once you receive your software license string(s), do not lose them. We suggest that you copy the information into a text file (for example Notepad), and add relevant information. Place the text file on the computer desktop, and make sure that backup copies are made.*

---

# Software installation

When a new software version is released for the echo sounder system it must be installed on your Processor Unit. Contact your local dealer, or a Simrad distributor, to have the new software version installed.

A dedicated wizard is used to install the software. You need administrative privileges on your Processor Unit to do the software installation. Installation of additional operating system components may be required. These are installed automatically. Observe the information offered in the wizard.

If you have a preliminary ("Beta") software version installed, it must be removed before you can update. Use the operating system functionality to remove the old software version.

Registered dealers and distributors can download the new software version from our website.

# End-user documentation

The end-user documentation for the echo sounder system has been updated with this software release.

The echo sounder *Reference Manual* is included with the echo sounder software as context sensitive on-line help.

Additional end-user documents related to the echo sounder system can be found on our website. This includes publications that are translated into other languages. Selected publications are also provided in IETM (*Interactive Electronic Technical Manual*) formats.

- [www.kongsberg.com/fisherysounder](http://www.kongsberg.com/fisherysounder)

# Updated functions and dialog boxes

This new software version has resulted in changes to some of the functions and dialog boxes in the echo sounder user interface.

## Topics

[ADCP information pane, page 12](#)

[ADCP page, page 17](#)

[ADCP Layers page, page 21](#)

[Relay Output page, page 22](#)

[Bottom Detection dialog box, page 25](#)

[Ping function, page 28](#)

## ADCP information pane

The *ADCP* (acoustic Doppler current profiler) information pane displays the velocities of the water currents. Horizontal water velocities are shown in a 360-degrees presentation resembling a compass rose.

### Prerequisites

This information pane is available only when ADCP functionality is activated.

### How to open

Select **ADCP Views** on the top bar to open the *ADCP* information pane.



To *close* the information pane, select it one more time on the top bar. You can also select **Close** in the top right corner of the pane.

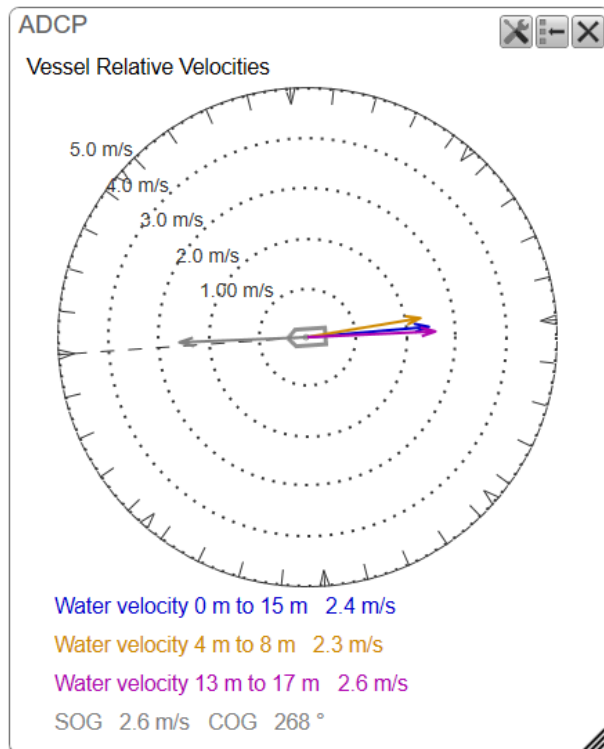
## Description

The *ADCP* (acoustic Doppler current profiler) information pane displays the velocities of the water currents. The numerical values are shown at the bottom of the information pane.

Each measurement of the water current velocity is presented as a vector drawn as an arrow. The length of the arrow indicates the velocity of the water. The tip of the arrow indicates the direction.

### Tip

Use the **ADCP** page to control the basic properties of the *ADCP* information pane. To open the **Information Pane Options** dialog box, select the button on the **Active** menu. You can also select the **Setup** button in the information pane.



Velocity can be measured in different units. Choose the unit of measurement on the **Units** page. The **Units** page is located in the **Installation** dialog box.

## Depth layers

Depth layers increase the functionality of the *ADCP* information pane, as they allow you to measure the velocities on different depths.

Use the **ADCP Layers** page to add depth layers.

- Select **New Layer** to create a new depth layer. The depth layer has a fixed range that depends on the current pulse length. The centre depth of the layer is shown in the diagram. Select the layer line and drag it up or down to adjust the depth.
- Each depth layer is shown with a dedicated colour. The same colour is used in the *ADCP* information pane.

## Horizontal velocity

Horizontal water velocities are shown in a 360-degrees presentation resembling a compass rose. Your vessel is located in the centre of the presentation. Speed ranges are shown with dotted circles. Two different velocities are presented.

### Water velocity

The measurement presents the estimated velocity of the water current. The measurement is shown as a coloured arrow. The length of the arrow indicates the velocity of the water. The tip of the arrow indicates the direction.

The **Show full water column average velocity** function measures the average velocity for the entire depth of the water column. The measurement is shown as a dark blue arrow.

The numerical values are shown at the bottom of the information pane.

#### **Speed over ground/Course over ground**

The *ADCP* information pane also presents the vessel's speed and course relative to the ground. The measurement is shown as a grey arrow. The length of the arrow indicates the speed. The tip of the arrow indicates the course.

The numerical values are shown at the bottom of the information pane.

The properties of the arrows are defined on the **ADCP** page in the **Information Pane Options** dialog box.

#### **Properties defined on the ADCP page**

##### **Orientation**

The **Orientation** choices specifies the physical direction of the 360-degree presentation as related to your vessel. This setting will affect the direction of the velocity arrows.

- Select **Bow Up** to place the vessel with its bow up at all times. The presentation of the velocities, regardless of any relativity, will adapt to this setting.
- Select **North Up** to place "North" at the top of the 360-degree presentation at all times. The presentation of the velocities, regardless of any relativity, will adapt to this setting.

##### **Compass**

The "compass rose" presentation will be applied with either cardinal or vessel relative directions.

- Select **Geographical** to present the compass relative to the cardinal directions (north, south, east and west).
- Select **Vessel Relative** to present the compass relative to the vessel directions (fore, aft, port and starboard).

##### **Bow Marker**

You can add a bow marker to easier identify your current heading. The bow marker shows you the vessel heading related to the direction of the horizontal current.

This is an "on/off" switch. Select the box to enable the function. The bow marker is shown as a dotted line drawn from the bow of the vessel symbol. The line reflects your vessel's current heading.

##### **Velocity Vector**

Each measurement of the water current velocity is presented as a vector drawn as an arrow. The length of the arrow indicates the velocity of the water. The tip of

the arrow indicates the direction. The horizontal velocity vectors can be presented using relative or true bearings.

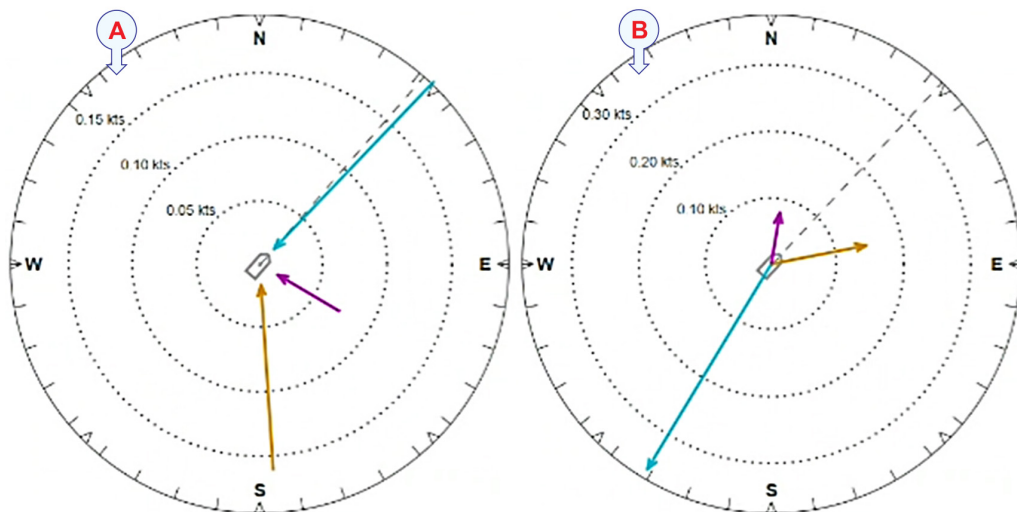
- Select **Geographical** to present the vector relative to the cardinal directions (north, south, east and west).
- Select **Vessel Relative** to present the vector relative to the vessel directions (fore, aft, port and starboard).
- Select **Layer Relative** to present the vector relative to one of the other layers.

If you choose to present the vectors relative to the vessel, the speed of the vessel is superimposed to the velocity of the water current.

### Vector Direction

Each measurement of the water current velocity is presented as a vector drawn as an arrow. The length of the arrow indicates the velocity of the water. The tip of the arrow indicates the direction. In the compass rose presentation, you can choose whether the vectors should point towards the vessel or outwards from the vessel symbol.

- Select **Tide Coming** to present the water currents as they flow towards your vessel.
- Select **Tide Flowing** to present the water currents as they flow away from your vessel and towards the outer rim of the compass rose.



**A** *Tide Coming*

**B** *Tide Flowing*

### Maximum Speed

This is the maximum speed setting for the velocities presented in the *ADCP* information pane. It thus controls the scale in the "compass rose" presentation. Adapting the maximum speed range to the maximum velocity value provides a better visualisation of the velocity and the changes in the velocity.

Select **Auto** if you want the echo sounder system to provide automatic scaling.

Velocity can be measured in different units. Choose the unit of measurement on the **Units** page.

#### Use Large Captions

This is an "on/off" switch. Select **Use Large Captions** to increase the size of the text in the information pane. The numerical information is moved from the bottom of the information pane to the right side of the compass rose. The numerical information from each layer is presented in separate rectangles using the same colours as the vectors inside the compass rose.

#### Show only numerical values

Select **Show only numerical values** to hide the compass rose and present the velocity information using only numerical values.

#### Athwartship Drift Indicator

Even if you steer your vessel on a fixed course with a fixed speed, it will drift sideways due to the forces of the wind and the sea currents. You can use the ADCP functionality to monitor this athwartship drift in the *ADCP* information pane. The settings provided allow you to choose the reference for the athwartship drift measurements and the scale used in the readout.

- Select **Scale** to choose the scale used to present the measurement.  
Select **Auto** if you want the echo sounder system to provide automatic scaling.
- Select **Source** to specify the reference for the drift measurement.
  - Select **Navigation** to use the input from the course and speed sensors as reference.
  - Select **Layer 1** to use the sea current measurements in the top layer as reference.

The presentation of the athwartship drift appears at the bottom of the *ADCP* information pane.

- A *green* bar demonstrates that the vessel drifts towards the starboard relative to the chosen source.
- A *red* bar demonstrates that the vessel drifts towards port relative to the chosen source.

#### Reset size

You can easily change the physical size and shape of each information pane. Click in its lower right corner, and drag to a new size. To reset the information pane to its default size, select the **Reset size** button in its top right corner.





## Transparency

The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.

## Details

### Close



Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.

### Reset Size



You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.

### Setup



Select **Setup** to open the **Information Pane Options** dialog box. This dialog box allows you to change the presentation parameters related to the information pane.

## ADCP page

The *ADCP* (acoustic Doppler current profiler) information pane displays the velocities of the water currents in the horizontal and vertical directions. Horizontal water velocities are shown in a 360-degree presentation resembling a compass rose. The vertical velocity is presented with a bar graph. Use the **ADCP** page to control the basic properties of the *ADCP* information pane.

## Prerequisites

This page is available only when ADCP functionality is activated.

## How to open

This dialog box is opened from the **Active** menu. You can also open the **Information Pane Options** dialog box by selecting **Setup** in selected information panes.



## Description

To present the water current information accurately in the *ADCP* information pane the relevant settings must be correct. Several settings are required to present the velocity values. If these settings are not known to you, use the default values.

## Details

The *ADCP* (acoustic Doppler current profiler) information pane displays the velocities of the water currents in the horizontal and vertical directions. Horizontal water velocities are shown in a 360-degree presentation resembling a compass rose.

Each measurement of the water current velocity is presented as a vector drawn as an arrow. The length of the arrow indicates the velocity of the water. The tip of the arrow indicates the direction.

## Orientation

The **Orientation** choice specifies the physical direction of the 360-degree presentation as related to your vessel. This setting will affect the direction of the velocity arrows.

- Select **Bow Up** to place the vessel with its bow up at all times. The presentation of the velocities, regardless of any relativity, will adapt to this setting.
- Select **North Up** to place "North" at the top of the 360-degree presentation at all times. The presentation of the velocities, regardless of any relativity, will adapt to this setting.

## Compass

The "compass rose" presentation will be applied with either cardinal or vessel relative directions.

- Select **Geographical** to present the compass relative to the cardinal directions (north, south, east and west).
- Select **Vessel Relative** to present the compass relative to the vessel directions (fore, aft, port and starboard).

## Bow Marker

You can add a bow marker to easier identify your current heading. The bow marker shows you the vessel heading related to the direction of the horizontal current.

This is an "on/off" switch. Select the box to enable the function. The bow marker is shown as a dotted line drawn from the bow of the vessel symbol. The line reflects your vessel's current heading.

## Velocity Vector

Each measurement of the water current velocity is presented as a vector drawn as an arrow. The length of the arrow indicates the velocity of the water. The tip of the arrow indicates the direction. The horizontal velocity vectors can be presented using relative or true bearings.

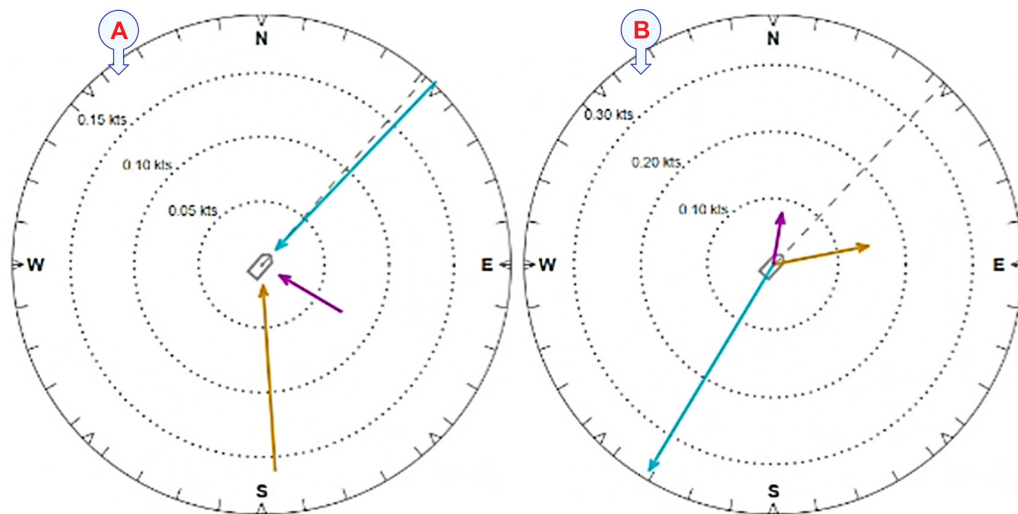
- Select **Geographical** to present the vector relative to the cardinal directions (north, south, east and west).
- Select **Vessel Relative** to present the vector relative to the vessel directions (fore, aft, port and starboard).
- Select **Layer Relative** to present the vector relative to one of the other layers.

If you choose to present the vectors relative to the vessel, the speed of the vessel is superimposed to the velocity of the water current.

### Vector Direction

Each measurement of the water current velocity is presented as a vector drawn as an arrow. The length of the arrow indicates the velocity of the water. The tip of the arrow indicates the direction. In the compass rose presentation, you can choose whether the vectors should point towards the vessel or outwards from the vessel symbol.

- Select **Tide Coming** to present the water currents as they flow towards your vessel.
- Select **Tide Flowing** to present the water currents as they flow away from your vessel and towards the outer rim of the compass rose.



- A** Tide Coming
- B** Tide Flowing

### Maximum Speed

This is the maximum speed setting for the velocities presented in the *ADCP* information pane. It thus controls the scale in the "compass rose" presentation. Adapting the maximum speed range to the maximum velocity value provides a better visualisation of the velocity and the changes in the velocity.

Select **Auto** if you want the echo sounder system to provide automatic scaling.

Velocity can be measured in different units. Choose the unit of measurement on the **Units** page.

#### Use Large Captions

This is an "on/off" switch. Select **Use Large Captions** to increase the size of the text in the information pane. The numerical information is moved from the bottom of the information pane to the right side of the compass rose. The numerical information from each layer is presented in separate rectangles using the same colours as the vectors inside the compass rose.

#### Show only numerical values

Select **Show only numerical values** to hide the compass rose and present the velocity information using only numerical values.

#### Athwartship Drift Indicator

Even if you steer your vessel on a fixed course with a fixed speed, it will drift sideways due to the forces of the wind and the sea currents. You can use the ADCP functionality to monitor this athwartship drift in the *ADCP* information pane. The settings provided allow you to choose the reference for the athwartship drift measurements and the scale used in the readout.

- Select **Scale** to choose the scale used to present the measurement.  
Select **Auto** if you want the echo sounder system to provide automatic scaling.
- Select **Source** to specify the reference for the drift measurement.
  - Select **Navigation** to use the input from the course and speed sensors as reference.
  - Select **Layer 1** to use the sea current measurements in the top layer as reference.

The presentation of the athwartship drift appears at the bottom of the *ADCP* information pane.

- A *green* bar demonstrates that the vessel drifts towards the starboard relative to the chosen source.
- A *red* bar demonstrates that the vessel drifts towards port relative to the chosen source.

### Related functionality

#### ADCP information pane

The *ADCP* (acoustic Doppler current profiler) information pane displays the velocities of the water currents. Horizontal water velocities are shown in a 360-degrees presentation resembling a compass rose.

Select **ADCP Views** on the top bar to open the *ADCP* information pane.



To *close* the information pane, select it one more time on the top bar. You can also select **Close** in the top right corner of the pane.

## ADCP Layers page

The *ADCP* (acoustic Doppler current profiler) information pane displays the velocities of the water currents in the horizontal and vertical directions. Horizontal water velocities are shown in a 360-degrees presentation resembling a compass rose. Use the **ADCP Layers** page to add depth layers. Depth layers increase the functionality of the *ADCP* information pane, as they allow you to measure the velocities on different depths.

### Prerequisites

This page is available only when ADCP functionality is activated.

### How to open

This dialog box is opened from the **Active** menu. You can also open the **Information Pane Options** dialog box by selecting **Setup** in selected information panes.



### Description

Select **New Layer** to create a new depth layer. The depth layer has a fixed range that depends on the current pulse length. The centre depth of the layer is shown in the diagram. Select the layer line and drag it up or down to adjust the depth.

Each depth layer is shown with a dedicated colour. The same colour is used in the ADCP information pane.

To remove a depth layer click on the line, then select **Delete Layer**.

### Details

#### Use cell-size layers

Select **Use cell-size layers** to change each layer's vertical depth range manually. Select any layer line and drag it up or down to adjust the depth.

#### Use auto-generated layers

Select **Use auto-generated layers** to set up the layers automatically. The current water column, from the end of the blind zone to the detected bottom, is divided into five layers with identical heights.

#### Note

---

*The function is unavailable if your echo sounder system has no bottom lock.*

---

### New Layer

Select **New Layer** to create a new depth layer. The depth layer has a fixed range that depends on the current pulse length. The centre depth of the layer is shown in the diagram. Select the layer line and drag it up or down to adjust the depth.

### Delete Layer

To remove a depth layer click on the line, then select **Delete Layer**.

### Show full water column average velocity

The **Show full water column average velocity** function measures the average velocity for the entire depth of the water column. The measurement is shown as a dark blue arrow.

## Relay Output page

The echo sounder system allows you to *export* the same sensor data that was originally imported. This functionality permits you to *reuse* the sensor data on other systems. Use the **Relay Output** functionality to set up and control the sensor data export.

### Prerequisites

The **Output** dialog box is not available when your echo sounder system is set to *Inactive* mode.

### How to open

This page is located in the **Output** dialog box.

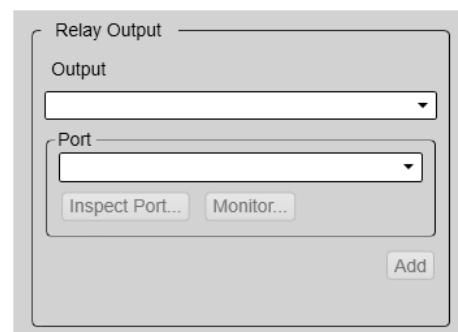
The **Output** dialog box is located on the **Operation** menu.

### Description

Information from various sensors provided as input to the echo sounder system can also be useful for other systems on board. The echo sounder system allows you to *export* the same sensor data that was originally imported. When activated, the selected sensor information is sent out on the chosen communication port (serial or LAN).

The following sensor data can be exported:

- Navigation
- Motion sensor
- Temperature



Once an output type has been defined, it is listed under **Installed Outputs** on the left side of the page. Under **Installed Outputs**, select any output to see the relevant settings. You can edit the output settings or delete the output to stop the data export.

The temperature can be provided by a transducer that offers this functionality. An MTW datagram is exported every time one of the following events take place:

- A new temperature value is provided by a transducer.
- A new temperature value is provided by another sensor connected to the echo sounder system.
- A new temperature is selected in the **Environment** dialog box.

You can manually adjust how often the echo sounder system shall export the temperature information.

#### Note

---

*In this context, the phrase "sensor" is used to describe an external device providing information. This information is useful or essential for the operation of the echo sounder system. Typical sensors are those providing navigational information (heading, speed or geographical position) or vessel movements in the sea (motion sensors).*

---

You cannot define the communication port parameters here. If you need to adjust these, you must select **I/O Setup** after you have defined the data output parameters. The **I/O Setup** page is located in the **Installation** and **Output** dialog boxes.

## Details

### Installed Outputs

All the outputs you have defined are listed under **Installed Outputs**. Under **Installed Outputs**, select any output to edit it or remove it.

- Select **Remove** to delete the output.
- Select **Edit** to change the settings.
- Select **New** to add an output.

### Output

Select which information to export.

### Port

Select the Ethernet port or serial port you want to use for the communication.

### Inspect Port

Select **Inspect Port** to check the communication parameters for the port. The relevant port setup dialog box opens. You are not permitted to make any changes. You cannot define the communication port parameters here. If you need to adjust these, you must select **I/O Setup** after you have defined the data output parameters. The **I/O Setup** page is located in the **Installation** and **Output** dialog boxes.

### **Monitor**

Select **Monitor** to open the **Port Monitor** dialog box. The **Port Monitor** dialog box allows you to study the communication stream on the chosen serial line or local area network (LAN) port.

### **Timer**

You can manually adjust how often the echo sounder system shall export the temperature information.

Under **Installed Outputs**, select the temperature output. Select **Edit**. Select **Timer**, and choose how often (in seconds) the echo sounder system shall export the temperature information.

You can adjust the timer interval from 1 to 60 seconds.

The data export takes place regardless of whether a new temperature is available from the transducer. If the reading remains unchanged, the same value is exported repeatedly at your chosen frequency.

### **Add**

Select **Add** to start export of the chosen data format. Once an output type has been defined, it is listed under **Installed Outputs** on the left side of the page.

### **Remove**

Once an output type has been defined, it is listed under **Installed Outputs** on the left side of the page. To remove the output, select the relevant format under **Installed Outputs**, then select **Remove**.

### **Edit**

Once an output type has been defined, it is listed under **Installed Outputs** on the left side of the page. To change the output settings, select the relevant format under **Installed Outputs**, then select **Edit**.

### **Save**

Select **Save** to keep the changes you have made.

## **Related functionality**

### **Temperature read-out**

If a suitable sensor is connected to the echo sounder system, the top bar may show you the current temperature. The function is offered to allow you to monitor the water temperature, but it will display any temperature reading that is made by the sensor. The temperature can be provided by a transducer that offers this functionality.

By default, the temperature is shown in Celcius. You can change the unit of measurement on the **Units** page. The **Units** page is located in the **Installation** dialog box.



## Water Column page

To achieve correct echo information, the current environmental parameters must be known to the echo sounder system. The **Water Column** page collects these parameters. These must be defined to match the current conditions.

Specify the water temperature. Once the salinity and temperature information is provided, the echo sounder system calculates the sound speed and absorption.

This page is opened from the **Environment** dialog box. The **Environment** dialog box is opened from the **Setup** menu.

## Bottom Detection dialog box

Locating the bottom (seafloor) is important for the echo sounder system. The purpose of the **Bottom Detection** settings is to define the upper and lower depth limits most likely to be used during normal operation. You can also modify the setting for **Bottom Backstep** to change the bottom detection relative to the bottom echo.

### How to open

These parameters are accessed from two places in the user interface.

- The dialog box is opened from the **Active** menu
- The page is opened in the **Information Pane Options** dialog box. To open the **Information Pane Options** dialog box, select the button on the **Active** menu. You can also select the **Setup** button in the relevant information pane.

The parameters are the same. It does not matter if you open the page or the dialog box.

Tip \_\_\_\_\_



*To open the **Information Pane Options** dialog box, select the button on the **Active** menu. You can also select the **Setup** button in the relevant information pane.*

---

### Description

Difficult environmental, water or bottom conditions can occasionally prevent a *bottom lock*. The echo sounder system needs this *bottom lock* to locate the correct depth, and to stay on this depth during operation, even if the depth changes continuously. The **Bottom Detection** settings are provided to rectify problems with *bottom lock*.

The **Bottom Detection** settings provide separate limits for minimum and maximum water depth. These depth limits can be used to obtain a *bottom lock* on the current depth when the echo sounder system transmits.

**Bottom Backstep** allows you to manually modify where on the bottom pulse the depth shall be detected. The setting does not have an effect on the ability to detect and track the bottom.

Tip

---

*If you have problems with bottom detection, you may consider disabling it. This can be useful if you only wish to study targets in the water column.*

*If you use an Olex system, you can take advantage of the **Bottom Backstep** parameter to detect seagrass. Decrease the bottom backstep value (make it more negative) so that the bottom is detected at the top of an area of seagrass. The Olex will then detect the real bottom, and the result is the height of the seagrass.*

---

## Details

### Bottom Detection

This is an "on/off" switch. Select the box to enable the function.

### Maximum Depth

The search for the bottom echo extends down to this depth whenever bottom track is lost.

Use a slightly larger depth value than the deepest spot you expect to visit. This will prevent annoyingly long ping intervals every time the bottom track is lost. A depth value of either 0 (zero) or less than the minimum depth disables the bottom detector.

Note

---

*If you set maximum depth to a value identical or smaller than the minimum value, the bottom detection algorithm will be disabled. The echo sounder system will not detect the bottom at all, and the displayed depth will be 0.00 m.*

---

### Minimum Depth

The bottom detector starts the search for the bottom echo at this depth. The detector will fail in shallow water if you select a too large depth value, and the tail of the transmitting pulse may cause problems if a too small value is set.

Note

---

*If you set maximum depth to a value identical or smaller than the minimum value, the bottom detection algorithm will be disabled. The echo sounder system will not detect the bottom at all, and the displayed depth will be 0.00 m.*

---

### Auto Minimum Depth Limit

This is an "on/off" switch. Select **Auto Minimum Depth Limit** to enable the echo sounder system to automatically calculate the minimum depth value. The calculated value ensures a valid minimum depth setting.

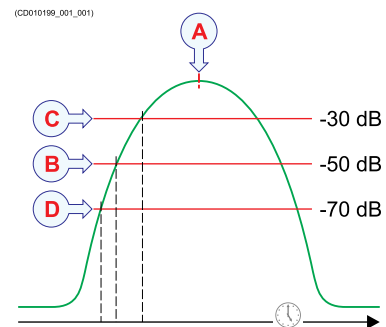
The value is based on the current pulse length and the transducer offset. The value is specified relative to the sea surface.

Select **Minimum Depth** manually to search for the bottom at a different depth than the calculated minimum depth limit.

### Bottom Backstep

**Bottom Backstep** allows you to manually modify where on the bottom pulse the depth shall be detected. The setting does not have an effect on the ability to detect and track the bottom.

- A *The peak of the bottom pulse*
- B *Default bottom backstep level*
- C *Approximate bottom backstep level for flatfish detection*
- D *Approximate bottom backstep level for seagrass detection*



The bottom pulse basically identifies the bottom depth just prior to the peak of the pulse (A).

However, this may not be the true bottom. For example, if the bottom pulse is generated by a rock bottom under a thick layer of mud, the actual depth is slightly shallower. For this reason, the echo sounder system is by default set up to give you a depth reading a few milliseconds before the peak of the pulse. This is done by setting the **Bottom Backstep** level to a default value of -50 dB (B).

The actual bottom will never appear at the peak of the bottom pulse (A), it will always be slightly before the peak. By changing the **Bottom Backstep** value you can detect the bottom earlier. This feature can for example be used when you fish for flatfish, or when you are harvesting seagrass.

#### *Example*

If you fish for sole, flounder or similar species, you can use the **Bottom Backstep** parameter to enhance the detection of the fish. Increase the bottom backstep value (make it more positive) so that the bottom is detected slightly deeper than the correct depth. The echo sounder will then "push through" the fish better, and the flatfish will be shown as they are located "above" the bottom.

### Best Bottom / Master Channel

In some situations, the echo sounder system may find it challenging to locate the bottom or to stay locked on an existing bottom contact. If this happens, select one of the channels to provide the "best bottom". The bottom detected by this channel is applied as the "master" depth.

In this context, the term *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Bottom measurements may differ from channel to channel due to reverberation or noise. If a channel locks on a bottom that differs from the bottom found by the master channel, it will display this depth as 0.0 metres. When you have defined a master channel, the channel will, for the next ping, search for a new bottom lock in the range offered by this master channel.

#### **Apply to All Channels**

Check this box to apply the current setting to all the channels on your echo sounder system. In this context, the term *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

## Ping function

The purpose of the **Ping** function is to enable or disable the acoustic transmissions into the water. Such transmissions are often referred to as "pinging".

#### **Prerequisites**

The **Ping** function is only available when the echo sounder system operates in *Normal* mode.

#### **How to open**

This function is opened from the **Operation** menu.

#### **Description**

The transmission ("pinging") can be turned on or off. Select the middle of the button to see the choices, or either side to enable or disable transmission. The ping symbol on the right side of the button is also used to transmit single pings.

Once pinging is *On*, use **Ping Mode** to choose *how often* the echo sounder system shall transmit.

#### **Tip**

---

*The phrase ping rate is used to describe the parameter that controls how often the echo sounder system can or shall transmit acoustic energy (a "ping") into the water.*

*If you observe a pelagic echo on the echo sounder system, and it seems to follow the bottom contour, it may be a false echo from the previous transmission (ping). The only way to remove this false echo is to reduce the ping rate. If you reduce the ping rate, all the echoes from the previous ping will have disappeared before you transmit the next.*

*On old paper-based echo sounders, the pen spent a long time on the rear side of the paper tray, and that reduced the ping rate. The echo sounder system is much faster, and you may transmit a new ping even before the energy from the previous ping has disappeared.*

---

## Details

### On

The echo sounder system "pings" (transmits) acoustic energy into the water. The ping mode is controlled by the **Ping Mode** and **Ping Interval** settings.

### Off

The echo sounder system does not "ping". No transmissions take place. When **Ping** is set to *Off*, the echo sounder system stops with the current echogram shown.

### Tip

---

*If you want to establish a passive system (transmission switched off, but normal reception), use the functionality offered by the **Normal Operation** dialog box.*

*If you wish to investigate the ambient noise, choose **Passive mode** in the **Normal Operation** dialog box. Any noise or disturbance in the water - within the transducer's frequency range - will then be detected and shown. This feature will for example be able to pick up disturbances from other hydroacoustic systems on your own vessel, or on other vessels in the vicinity.*

---

## Auto Start

The **Auto Start** function allows the echo sounder system to start "pinging" automatically when the software program starts. This functionality requires that the following conditions are met:

- The echo sounder system is fully operational with all relevant transceivers and transducers.
- The echo sounder system was in *Normal* operating mode the last time you turned it off.

### Note

---

*You must use this functionality with care! The **Auto Start** function will start the pinging even if your vessel is in a dry dock. You must never set the echo sounder system to normal operation when the ship is in dry dock. If the transducer is activated when out of the water it may be damaged beyond repair. It is therefore very important that the echo sounder system remains turned off when the vessel is in dry dock, and that no one tries to use it.*

---

## Related functionality

### Ping Mode

Use **Ping Mode** to control how often the echo sounder system shall transmit its energy into the water. For normal use, choose *Maximum*. If you choose *Maximum*, the echo sounder system will transmit (ping) continuously and as often as possible. The **Ping Mode** function is only available when the echo sounder system operates in *Normal* mode.

### **Ping Interval**

Use **Ping Mode** to control how often the echo sounder system shall transmit its energy into the water. For normal use, choose *Maximum*. If you choose *Maximum*, the echo sounder system will transmit (ping) continuously and as often as possible. **Ping Interval** is only available when the echo sounder system operates in *Normal* mode, and **Ping Mode** is set to *Interval*.

# Minimum computer requirements

Unless specifically ordered from Kongsberg Discovery, the echo sounder system is not provided with a computer. A suitable computer must be purchased locally.

If you purchase a computer locally, make sure that the chosen model meets the functional and technical requirements.

It is important that the chosen computer model is relatively new with sufficient processing power, a high performance graphics adapter, and a high speed Ethernet adapter. The computer must be able to facilitate the various interface requirements made by the echo sounder system, and you may need to add extra Ethernet and/or serial adapters.

## Note

---

*The computer design and construction must allow for maritime use. Easy access to connectors, parts and cables must be provided. Make sure that the installation method allows for the physical vibration, movements and forces normally experienced on a vessel.*

---

A laptop computer may be used as long as it meets the functional and technical requirements.

The minimum technical requirements are:

### **Microprocessor**

Intel Core i7 8700T(or better)

An equivalent microprocessor type from another manufacturer can also be used.

### **Internal memory capacity**

8 GB (Minimum)

### **Hard disk**

256 GB (Minimum)

If you wish to record large amounts of data, make sure that you have enough space on your hard disk. Unless your computer is equipped with a very large disk, we recommend that you save the data to an external storage device.

## Graphics adapter

- Minimum resolution (pixels): 1280 x 1024
- Recommended resolution (pixels): 1920 x 1200 (or better)
- Minimum bandwidth: 1 Gb/s

The graphic adapter must support:

- Microsoft® DirectX v12
- Microsoft® DirectDraw acceleration
- 3D acceleration
- Accelerated Graphics Port (AGP) texture acceleration
- OpenGL

As a general recommendation, you should set the screen resolution as high as possible. This will allow you more "space" in the echo sounder presentation to offer more detailed information. The physical width of your top bar will also be extended, and free space for icons and navigational information.

The operating system allows you to change the size of text, applications and other items by means of a custom scaling level. If this scaling level set to higher than 100%, this may have an effect on the echo sounder presentation.

A large number of commercial graphic adapters are available, and we have not tested all of them. Even adapters that meet the minimum specifications may fail with the echo sounder software. We welcome any feedback with comments or experiences with graphic adapters.

## Ethernet adapter

Type: Intel 82571 (or better)

Minimum bandwidth: 1 Gbit/s

To communicate with the transceiver, a high quality Ethernet adapter is required. If you wish to connect the computer to the ship's network, you need two Ethernet adapters.

The Ethernet adapter communicating with the transceiver must offer a *Receive Buffers* function. You must set all parameters related to communication performance to their maximum values if you use more than one transceiver in your echo sounder system.

- Set *Link Speed* to 1.0 Gbps.
- Set the number of *RSS Queues* equal to the number of cores in your microprocessor. (Example: Select eight *RSS Queues* on an 8-core 16-thread microprocessor.)
- Set *Receive Buffers* to its maximum value.



### **Serial adapters**

The number of serial lines depends on your interface requirements.

If you have connected a USB-to-serial adapter to the computer, do not remove it while the echo sounder system is running. Do not move the adapter to a different USB socket on the computer.

### **Operating system**

We have designed the echo sounder software for *Microsoft® Windows® 10 Pro* and *Microsoft® Windows® 11 Pro*. It is a 64-bit application. These are 64-bit applications.

Note

---

*The echo sounder software will not run on Windows® 7 or older operating systems.*

---

# Minimum display requirements

Unless specifically ordered, the echo sounder system is not provided with a display. The display must then be purchased locally.

You can use more than one display on your Processor Unit depending on personal and/or operational preferences.

## Note

---

*Make sure that the chosen display meets the requirements for the echo sounder system. The design and construction must allow for marine use, and the display must be able to withstand the movements and vibrations normally experienced on a vessel. Verify that you have easy access to cables and connectors, and that the display can be installed in a safe and secure way.*

---

The minimum technical requirements for the display are:

### **Resolution**

Minimum requirement: 1280 x 1024 pixels

The visual quality of the presentation depends on the quality of your graphic adapter and display. We recommend that you use a large display with resolution 1920 x 1080 or 1920 x 1200.

### **Video interface**

The video interface must match the output format(s) provided by the Processor Unit. The Processor Unit may offer video output on several formats. Investigate your options before you purchase a display.

### **Physical screen size**

The screen size depends on personal and/or operational preferences. We recommend that you use 24 inch or bigger diagonal screen size. The echo sounder software supports 16:9 and 16:10 displays.



©2024 Kongsberg Discovery AS