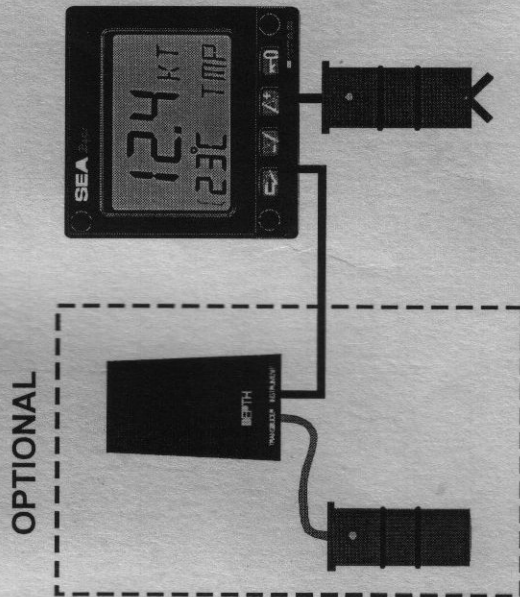


SEA Data

- Easy to install
- Easy to use
- Complete with all cables needed
- Three light levels on LCD and Push buttons
- 8 m transducer cable, 3 m power cable
- Add on depth transducer as an option
- Water proof instrument

CONNECTIONS



MAIN FUNCTIONS



Boat speed. Displays either speed in knots, Miles/h or Km/h. (0-35 knots) If an optional depth transducer is connected, depth is displayed in metres or feet.



Water temperature. -10° C to 50° C or 14° F to 122° F



Trip distance. Re-settable distance 0-199.99 Nm



Total distance. Non resettable distance 0-1999.99 Nm



Depth. An optional depth transducer can be connected which will provide depth and alarms.

Star



SEA Data

OPERATION MANUAL • BRUKSANVISNING
BEDIENUNGSANWEISUNG • DESCRIPTION D'UTILISE

WARRANTY

GENERAL

All our products are designed and built to comply to the highest class industry standards. If the products are correctly installed, maintained and operated, as described in the installation and operation manual, they will provide long and reliable service. Our international network of distributors can provide you with the information and assistance you may require virtually anywhere in the world.

Please read through and fill in this warranty card and send it to your national distributor for product registration.

LIMITED WARRANTY

The warranty covers repair of defective parts, due to faulty manufacture and includes labour when repaired in the country of purchase. The warranty period is two years, and commences from the date of purchase. The above warranty is the Manufacturer's only warranty and no other terms, expressed or implied, will apply. The Manufacturer specifically excludes the implied warranty of merchantability and fitness for a particular purpose.

CONDITIONS

- The supplied warranty card and receipt with proof of purchase date, must be shown to validate any warranty claim. Claims are to be made in accordance with the claims procedure outlined below.
- The warranty is non-transferable and extends only to the original purchaser. The warranty does not apply to Products from which serial numbers have been removed, faulty installation or incorrect fusing, to conditions resulting from improper use, external causes, including service or modifications not performed by the manufacturer or by its national distributors, or operation outside the environmental parameters specified for the Product.
- The Manufacturer will not compensate for consequential damage caused directly or indirectly by the malfunction of its equipment. The Manufacturer is not liable for any personal damage caused as a consequence of using its equipment.
- The manufacturer, its national distributors or dealers are not liable for charges arising from sea trials, installation surveys or visits to the boat to attend to the equipment, whether under warranty or not. The right is reserved to charge for such services at an appropriate rate.
- The manufacturer reserves the right to replace any products returned for repair, within the warranty period, with the nearest equivalent, if repair within a reasonable time period should not be possible.
- The terms and conditions of the warranty as described do not affect your statutory rights.

CLAIMS PROCEDURE

Equipment should be returned to the national distributor, or one of its appointed dealers, in the country where it was originally purchased. Valid claims will then be serviced and returned to the sender free of charge.

Alternatively, if the equipment is being used away from the country of purchase, it may be returned to the national distributor, or one of its appointed dealers, in the country where it is being used. In this case valid claims will cover parts only. Labour and return postage will be invoiced to the sender at an appropriate rate.

DISCLAIMER

Common sense must be used at all times when navigating and the manufacturer's navigation equipment should only be considered as aids to navigation. The manufacturer's policy of continuous improvement may result in changes to product specification without prior notice.

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1 Introduction

Thank you for choosing Star SEA Data.

SEA Data is a digital instrument which will display all necessary data from the SEA. SEA Data is as standard, a log instrument, providing you information about speed, trip distance, total distance and water temperature. As an option a depth transducer can be connected, giving you depth, shallow and deep alarm.

The two transducers are connected to the back of the instrument. They are easy to install due to the colour coded 4-pole jack plugs.

The display is divided into two lines, main function and sub function. The main function displays either speed or depth. The sub functions are divided into two lists, one under each main function.

1.1 Specifications

Speed: 0-30 knots (0-45 knots with optional high speed paddle wheel)

Trip distance: 0-199.99 Nm resettable. Stored in permanent memory.

Total distance: 0-19999.99 Nm non resettable. Stored in permanent memory.

Depth: 0.5-150 m

Deep alarm: Adjustable

Shallow alarm: Adjustable

1.2 Part specifications

Star SEA Data is delivered with all mounting material. Make sure all these parts are in the package.

QTY	ITEM	QTY	ITEM
1	Instruction for use	1	Drill template
1	Warranty card	4	Mounting screws
1	Instrument SEA Data	4	Rubber plugs
1	Instrument cover	1	Red and black power supply cable (3m)
1	Back cover	1	Bag with wire protectors and silicon paste
1	Screw connector		

2 INSTALLATION

2 Installation

- **The installation includes 6 major steps:**

1. Read the installation and operation manual.
2. Plan where to install the transducer and instrument.
3. Install the transducer, then the instrument.
4. Run the cables.
5. Take a brake and admire your installation.
6. Learn the functions and calibrate your instrument.

- **Before you begin drilling...** think about how you can make the installation as neat and simple as your boat will allow. Plan where to position the transducers and instruments. Think about leaving space for additional instruments in the future.

- **A few "do not's" you should consider:**

- Do not cut cables too short. Allow extra cable length at the instrument so it can be removed for inspection without having to disconnect attached cables.
- Do not place sealant behind the instrument. The instrument gasket eliminates the need for sealant.
- Do not run cables in the bilge, where water can appear.
- Do not run cables close to the fluorescent light sources, engine or radio transmitting equipment to avoid electrical disturbances.
- Do not rush, take your time. A neat installation is easy to do.

- **The following material is needed:**

- Wire cutters and strippers.
- Large Phillips and small flat head screw driver.
- Hole saw for the instrument clearance hole 63 mm ($2\frac{1}{2}$ ").
- Hole saw for the transducer fitting, hole: 43 mm ($1\frac{1}{16}$ ").
- 2.8 mm ($\frac{7}{64}$ ") drill for the mounting holes
- Plastic cable ties.
- Silicon sealing for use under water

If you are doubtful about the installation, obtain the services of an experienced technician.

2.1 Installing the instrument

- Place the adhesive drill template in the desired position for the instrument. Drill the four screw holes using a 2.8 mm ($1/64$ ") drill. Use a 63 mm ($2\frac{1}{2}$ ") hole saw to cut the clearance hole for the instrument connection socket.

Note! Never drill through the instruments four mounting holes as the gasket may be damaged and thus cause leakage. The warranty is not valid for damage caused by drilling through the mounting holes.

2.2 Installing transducer

The log and depth transducers need to be positioned carefully. The transducer must remain in the water at all speeds. Turbulent water causing air bubbles must be avoided.

The best position for the log and depth transducers is as close to the centre line of the boat and as far forward as possible.

The transducer must always remain submerged in the water.

Power boats: The waterline of fast power boats shortens considerably at high speeds. Therefore the transducer should be placed at 25-30% from the front line of the waterline at full speed.

Sail boats: Boats with a fin keel must have the transducer located at least 250 mm (1 ft) but not more than 750 mm (3 ft) in front of the keel, and no more than 100 mm off the centre. For boats with full-keel it might be impossible to locate the transducer at the centre line. If the transducer is off centre, the angle of the paddle wheel should meet the bow.

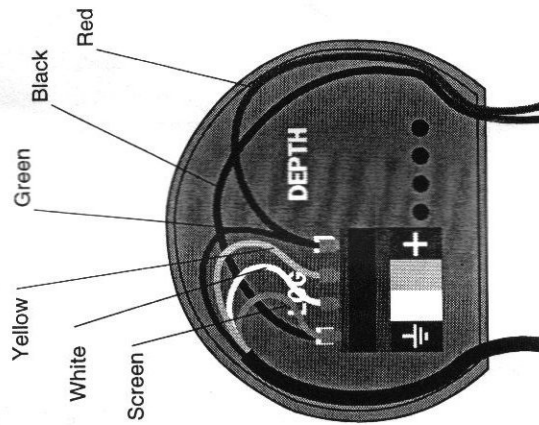
The log and depth transducers have the same through hull fitting. Decide where to position the transducer and cut a 43 mm ($1\frac{1}{16}$ ") hole with a hole saw. Use sand paper to smooth the surface. Clean the surface around the hole on both sides of the hull. Use silicon paste for under water use and spread it on the through hull fitting.

Due to different shapes of hulls, the log transducer has to be calibrated on all boats. See 4.2.5

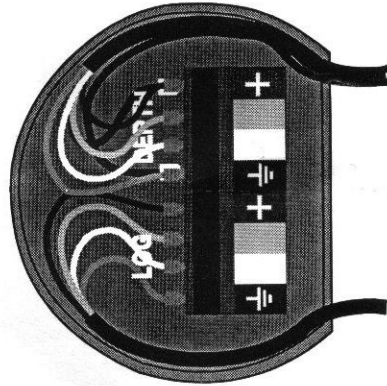
For mounting of depth transducer, see instruction included with transducer.

2.3 Electrical installation

On the back of the instrument there are eight pins; Four for the screw connector for the log transducer and four for the depth transducer. The connector is colour coded with green, yellow white and ground sign. Connect the four wires from the log transducer according to the colours to the connector for LOG, the blank wire is ground. If a depth transducer is connected use the DEPTH connector for that. Power supply is either connected to green and ground for DEPTH or LOG.



Log transducer and power supply



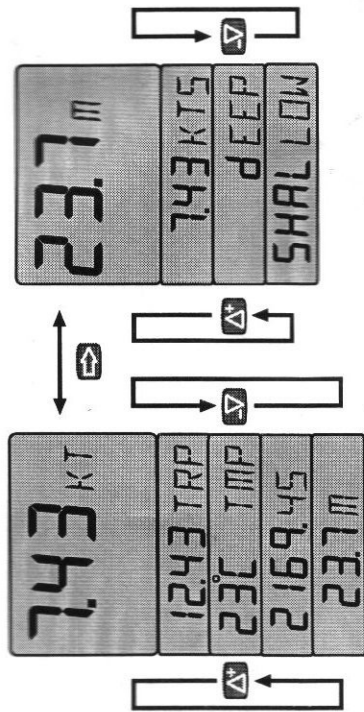
Log and depth transducers and power supply

Connect a 5 Ampere fast fuse between the power battery and instrument on the red plus lead.

3 Function overview

The SEA Data instrument can work as a log instrument, a depth instrument or as a combined log/depth instrument. You simply select the type of instrument you want, during calibration.

3.1 How to use the push buttons



3.1.1 Mode / Light button

This button is used to change between Log mode and Depth mode. One short press changes between the two modes. To select light levels press mode for more than two seconds.



3.1.2 Down button

This button is used to move down in the sub function list or to decrease a value in set mode.



3.1.3 Up button

This button is used to move up in the sub function list or to increase a value in set mode.



3.1.4 KEY button

This button is used to lock/unlock a value, to be able to change it.



3.1.5 Clear

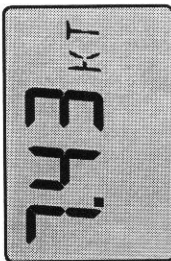
To clear a value or reset trip distance press UP and DOWN together.



3.2 Log functions

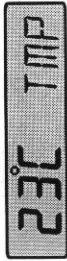
3.2.1 Boat speed

The main functions displays the boat speed. The unit (Knots or Miles/h) is selectable during calibration, see 4.2.4.



3.2.2 Water temperature

To view water temperature press UP or DOWN until the text TMP is displayed. The water temperature can be displayed in Celsius or Fahrenheit. To change unit, see 4.2.8.



3.2.3 Trip distance

To view the trip distance press UP or DOWN until the text TRP is displayed. To clear the trip distance press UP and DOWN together. Range: 0-199.99 Nm.



3.2.4 Total distance

To view the total distance press UP or DOWN. Total distance is not possible to clear and will be stored in the instruments permanent memory. Range: 0- 19999.99 Nm.



3.2.5 Depth

To view depth press UP or DOWN until the text DPT is displayed. The depth function is only displayed if instrument type is set to combi. To change instrument type, see 4.2.3.



3.3 Illumination

The LCD and push buttons have three levels of illumination. To turn on light, press MODE until the text Lit appears. Change level with UP or Down and lock selection with KEY.



3.4 Depth functions (optional)

To change between Log and Depth information press **MODE**. This function will display depth in metres, feet or fathoms. To change unit see 4.2.6. A depth sounder measures the time it takes for a sound pulse transmitted from the transducer, to bounce on the bottom and be received by the transducer again. The strength of the sound pulse decreases with the depth and is also affected by temperature and pollution in the water. A soft bottom with a lot of vegetation will also decrease the strength of the echo, which can result in poor reception by the receiver. If no echo is registered the depth reading will be three dashes i.e. no echo.

3.4.1 Boat speed

To view boat speed press **UP** or **DOWN** until the text **BSP** is displayed. The unit (Knots or Miles/h) is selectable in calibration, see 4.2.4.

3.4.2 Shallow alarm

To get to the shallow alarm function, press **UP** or **DOWN** until the text **SHALLOW** is displayed. To change the alarm value, unlock with **KEY**, increase/decrease the value with **UP/DOWN**, move to the next figure with **MODE** button and lock the value again with **KEY**.

3.4.3 Deep alarm

To get to the deep alarm function press **UP** or **DOWN** until the text **DEEP** is displayed. To change the alarm value, unlock with **KEY**, increase/decrease the value with **UP/DOWN**, move to next figure with **MODE** button and lock the value again with **KEY**. The alarm is activated.

3.4.4 Silencing an alarm

If a shallow alarm limit is reached the instrument will display depth on the top row and the alarm limit flashing on the bottom row. To silence the alarm press any button or steer the boat to deeper water. The alarm will be automatically activated again if the boat is taken to deeper water (2 m more than the limit).

3.4.5 Activate / Deactivate an alarm

To activate / deactivate an alarm, go to the alarm function an press **UP** and **DOWN** together. If an alarm is active the present alarm value is displayed together with the text **SHA** or **DEP**. If the alarm is deactivated the text **SHALLOW** or **DEEP** is displayed instead. The alarm value is stored in the memory even if the alarm is deactivated.

4 Calibration

In calibration mode, there is a list of nine calibration values and set up modes. The list starts at **C10** and stops at **C18**. Calibration related to the speed transducer has the text **ST** after calibration number and the depth transducer has the text **DT**.

To move to the desired calibration group press **UP** and **DOWN** as required.

4.1 Enter and exit calibration

To enter the calibration mode press **KEY** until the text **C10 RET** appears. **RET** stands for return.

To exit calibration press **KEY** in **C10 RET** (return).

4.2 Calibration groups

4.2.1 C10 Return (RET)

To exit calibration press **KEY** in this when the text **RET** is displayed.

4.2.2 C11 Damping (SEA MID)

Damping is used to get the most stable reading for the situation. Depending on the weight of the boat and the sea conditions, you may want to change the dampening of the reading. If **SEA MAX** is used, an average of the speed over a longer period will be displayed. This function will not effect the update rate of the display.

4.2.3 C12 Instrument type (Type LOG)

The Star SEA Data instrument can either be operating as a log instrument (**LOG**), a depth instrument (**DPT**) or as a combined log/depth instrument (**ALL**). There is also a demonstration mode built into the instrument (**DEM**). If **LOG** is selected, only log functions will be displayed. If **DPT** is selected only depth functions will be displayed.

In demonstration mode (DEM) all values are simulated without any transducers connected. **Note!** Trip and total distance will not be stored in the permanent memory after power off in demonstration mode.

4.2.4 C13 Unit for speed (Unit KTS)

The unit for speed is selectable between knots (KTS), kilometres/hour (K/h) or Miles /hour (M/h). To change unit press **KEY** and select unit with **UP** or **DOWN** and confirm with **KEY**.

4.2.5 C14 Speed calibration (1.20 CAL)

Because of different shapes of the hull, the instrument has to be calibrated. This calibration will effect speed, trip and total distance. The range for the calibration is 1.00-1.99 where The calibration value will be multiplied with the speed.

To calibrate your log, run the boat at normal speed a measured distance. Compare the distance with the trip distance.

Calculate the calibration value with the following formula:

$$\frac{T}{L} \times C = N$$

T True distance from sea chart
L Log trip counter distance
C The current calibration value
N New calibration value

If you suspect that there is water flow, drive the boat in both directions and divide the trip distance by two.

To enter the new calibration value press **KEY** increase/decrease with **UP/DOWN**, move to the next figure with **MODE** and confirm with **KEY**.

4.2.6 C15 Unit for depth (Unit M)

The unit for depth is selectable between metres (M), feet (FT) or fathoms (FA). To change unit press **KEY** and select unit with **UP** or **DOWN** and confirm with **KEY**.

4.2.7 C16 Adjusting depth (0.00 ADJ)

It is possible to adjust the depth reading plus/minus 99.9 m. This feature makes it possible to get the reading from either the keel or the water surface.

Example: Your boat has a draft of two metres and the transducer is mounted one half metre below the water surface.

1. if you want the reading from the water surface you have to subtract 0.5 m
2. if you want the reading from the keel you have to add 1.5 m

Note! Calibration should be carried out in the same unit chosen for display.

4.2.8 C17 Unit for temperature (Unit °C)

The unit for temperature is selectable between Celsius (°C) or Fahrenheit (°F). To change unit press **KEY** and select unit with **UP** or **DOWN** and confirm with **KEY**.

4.2.9 C18 Temperature adjustment (0°C TMP)

The temperature reading can be adjusted for accurate reading plus/minus nine degrees.

4.3 Customise your display

The two main functions have one "empty" sub function. One sub function from the other main function group can be moved into this empty space. For example, the trip distance can be moved to the depth group. To do that, go to the trip function and press **KEY** and **MODE** together, the display is flashing. Go to the depth functions by pressing **MODE** and lock with **KEY**.

It is possible to move two functions, one under speed and one under depth.

The last customised display is the display the instrument starts up in, after power on.

If you want the instrument to start up displaying speed and trip after power on, go to the trip function under speed and press **KEY** and **MODE** together. The display will be flashing, lock with **KEY**.