DEPTH MANUAL

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9/16/97

1 Introduction

Thank you for choosing the SI-TEX DEPTH.

SI-TEX DEPTH is a digital instrument that can display all necessary data from the SEA. SI-TEX DEPTH is as standard, a depth instrument providing you information about you depth and shallow and deep alarms. As an option a sensor can be connected, giving speed, trip distance, total distance and water temperature.

Both 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 N.M. resetable. Stored in permanent memory.
Total distance:	0-19999.99 N.M. non-resetable. Stored in permanent memory.
Depth:	0.5-150 m (2-400ft)
Deep alarm:	Adjustable
Shallow alarm:	Adjustable

1.2 Part specifications

SI-TEX DEPTH is delivered with all mounting material. Make sure all these parts are in the package.

QTY	ITEM
1	Instruction for use
1	Warranty card
1	Instrument SEA Data
1	Instrument cover
1	Back cover
1	Screw connector

QTY	ITEM
1	Drill template
4	Mounting screws
4	Rubber plugs
1	Red and black power supply cable (3m)
1	Bag with wire protectors and silicon paste

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 "don'ts" 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 Philips and small flat head screw driver.
  Hole saw for the instrument clearance hole 63 mm ($2^1/_2$ ").
  Hole saw for the transducer fitting, hole 43 mm (1 11/16").
  2.8 mm ($^7/_{64}$ ") drill for the mounting holes
  Plastic cable ties.
  Silicon sealing for use under water (not supplied)

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 ($^{7}/_{64}$ ") drill. Use a 63 mm ($2^{1}/_{2}$ ") hole saw to cut the clearance hole for the instrument connection socket.

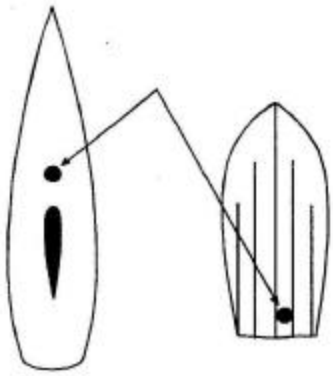
Note! Never drill through the instruments four mounting holes as the gasket may be damaged and thus cause leakage. The warranty is not valid for damage caused by drilling through the mounting holes.

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 powerboats 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.



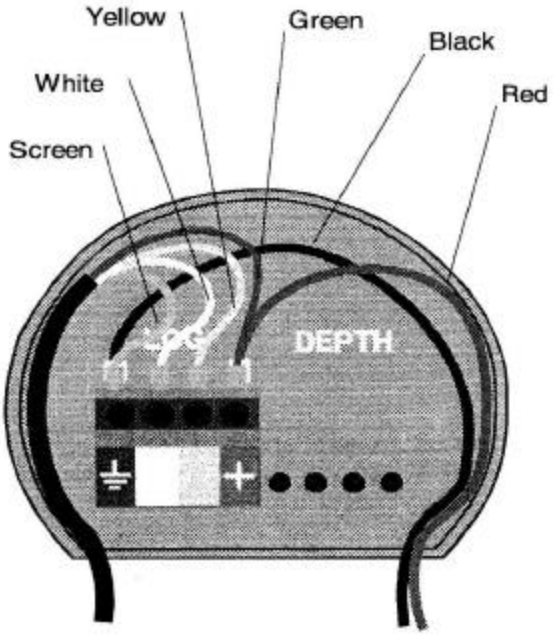
The log and depth transducers have the same through hull fitting. Decide where to position the transducer and cut a 43 mm ($1\ ^{11}/_{16}$ ") hole with a hole saw. Use sandpaper to smooth the surface. Clean the surface around the hole on both sides of the hull. Use silicon paste for under water use 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

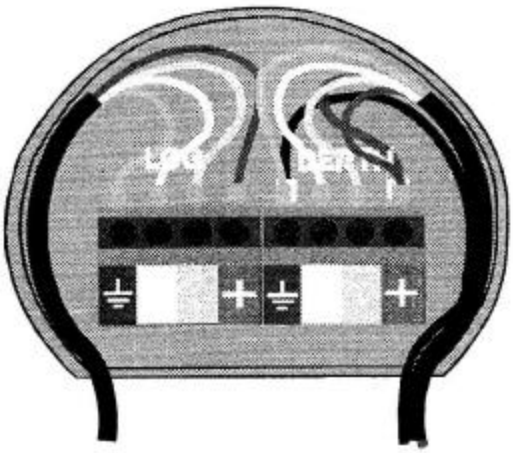
For mounting of depth transducer, see instruction included with transducer.

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 depth transducer according to the colours to the connector for DEPTH, the blank wire is ground. If a log transducer is connected use the LOG connector for that. Power supply is either connected to green and ground for DEPTH or LOG.



Log transducer and power supply



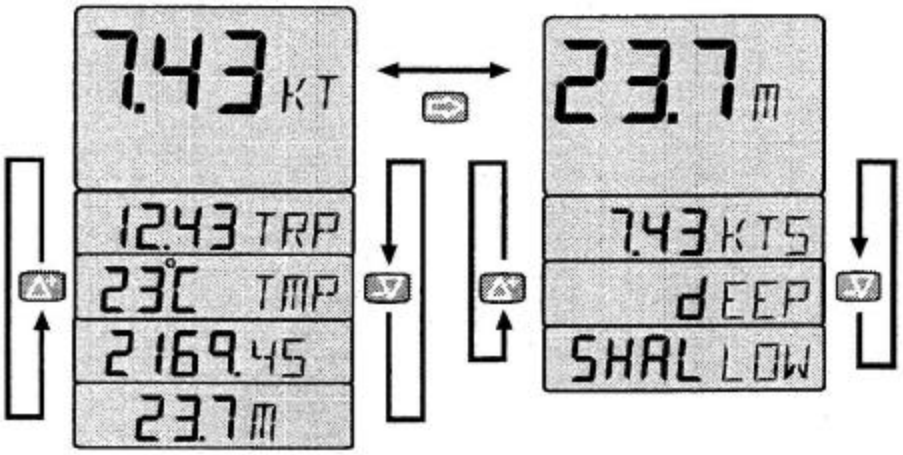
Log and depth transducers and Power supply

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

3 Function overview

The SI-TEX DEPTH instrument can work as a depth instrument, a log 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 **depth** mode and **log** 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.

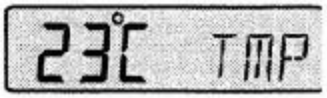
3.1.5 Clear

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

3.2 Log functions (requires optional sensor)

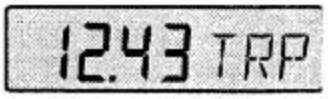
3.2.1 Boat speed

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



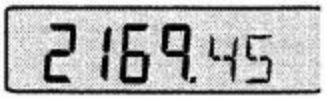
3.2.2 Water temperature

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.



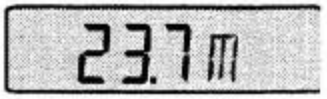
3.2.3 Trip distance

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 N.M.



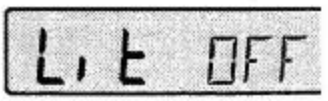
3.2.4 Total distance

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 N.M.



3.2.5 Depth

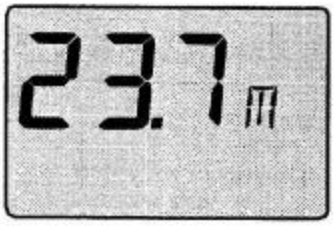
To view depth press **UP** or **DOWN** until the text DPT is displayed. **The depth function is only displayed if instrument type is set to combi**. To change instrument type, see 4.2.3.



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



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 received, the depth reading will be three dashes i.e. no echo.

3.4.1 Boat speed (optional)

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 and 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

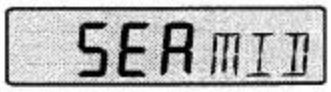
To enter the calibration mode press **KEY** until the text C10 RET appears.
RET stands for return.
To exit calibration press **KEY** in C10 RET (return).

4.2 Calibration groups

4.2.1 C10 Return (RET)

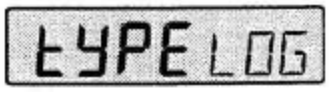
To exit calibration press **KEY** in this when the text RET is displayed.

4.2.2 C11 Damping (SEA MID)



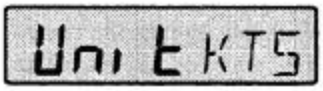
Damping is used to get the most stable reading for the situation. Depending on the weight of the boat and the sea conditions, you may want to change the dampening of the reading. If optional speed sensor is used, an average of the speed over a longer period will be displayed. This function will not effect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

4.2.3 C12 Instrument type (Type LOG)



The SI-TEX DEPTH instrument can either be operating as a depth instrument (DPT), a log instrument (LOG) 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) and 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)

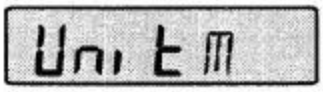
Because of different shapes of the hull, the instrument has to be calibrated. This calibration will effect speed, trip and total distance. The range for the calibration is 1.00-1.99 where the calibration value will be multiplied with the speed.
To calibrate your log, run the boat at normal speed a measured distance.
Compare the distance with the trip distance.
Calculate the calibration value with the following formula:

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

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

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**.

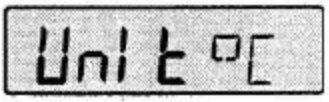
4.2.7 C16 Adjusting depth (0.00 ADJ)

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

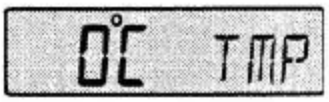
Note! Calibration should be carried out in the same unit chosen for display.

4.2.8 C17 Unit for temperature (Unit °C)



The unit for temperature is selectable between Celsius (°C) and 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 flashes. 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**.

CERTIFICATE OF LIMITED WARRANTY

Providing you present a valid proof of purchase, SI-TEX Marine Electronics Inc. warrants all parts of each new product against defects in material and workmanship under normal use and will repair or exchange any parts proven to be defective at no charge for a period of two years for parts and one year for labor from the date of purchase, except as provided below under Limited Warranty Exceptions.
Defects will be corrected during normal working hours by an authorized SI-TEX Marine Electronics Inc. dealer, service center, or at the SI-TEX office in St. Petersburg, Florida. There will be no charge for labor for a period of one year from the date of purchase, except as provided below under Limited Warranty Exceptions.
This Warranty and Proof of Purchase must be made available to the authorized SI-TEX Marine Electronics Inc. service location or dealer at the time of service.

LIMITED WARRANTY EXCEPTIONS

SI-TEX Marine Electronics Inc. will not be responsible for equipment which has been subjected to water or lightning damage, accident, abuse, or misuse, nor any equipment on which the serial number label has been removed, altered or mutilated.

SI-TEX Marine Electronics Inc. assumes no responsibility for damage incurred during installation.
This Limited Warranty is effective only with respect to the original purchaser.
Any cost associated with transducer replacement, other than the cost of the transducer itself, is specifically excluded from this Limited Warranty.
Travel costs incurred will not be accepted for SI-TEX Marine Electronics Inc. products.
THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF.

SPECIFIC EXCLUSIONS

Charges for overtime, stand-by, holiday, and per diem are specifically excluded from the Limited Warranty.

Chart paper, stylus, stylus belt, lamps, and fuses are consumable items and are not covered by this Limited Warranty.

Installation workmanship or materials except as provided directly by SI-TEX Marine Electronics Inc. are not covered by this Limited Warranty.
SI-TEX Marine Electronics Inc. equipment or parts thereof, which have been repaired or altered except by an authorized

SI-TEX Marine Electronics Inc. dealer or service center, are not warranted in any respect.

Transducer, software update, battery, microphone, magnetron, and microwave components and water damage on water resistant VHF radio are items excluded from the two-year warranty and are covered by warranty for a period of one year for both parts and labor.

SI-TEX Marine Electronics Inc. will not, at any time, assume any costs or labor charges for checkout or external line fuse replacement or problems not found to be at fault in equipment itself.

THERE ARE NO WARRANTIES OR GUARANTEES EXPRESSED OR IMPLIED WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. SI-TEX MARINE ELECTRONICS INC. HAS NO OTHER LIABILITY TO PURCHASE FOR DIRECT OR CONSEQUENTIAL DAMAGE OR ANY THEORY INCLUDING ABSOLUTE LIABILITY, TORT, OR CONTRACT. THIS LIMITED WARRANTY CANNOT BE ALTERED OR MODIFIED IN ANY WAY AND SHALL BE INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF FLORIDA. THIS WARRANTY IS LIMITED TO THE CONTINENTAL U.S.A., ALASKA, HAWAII, AND CANADA.

HOW TO OBTAIN SERVICE UNDER THIS WARRANTY

To provide better flexibility, SI-TEX Marine Electronics Inc. gives you the option of obtaining service under this warranty by either:

a) Contacting an authorized SI-TEX Marine Electronics Inc. service station (The closest service station may be found by contacting your dealer of purchase. Or

b) Shipping your equipment prepaid via UPS or truck with insurance prepaid to SI-TEX Marine Electronics Inc. at the address provided below. SI-TEX Marine Electronics Inc. will, whenever possible, make all repairs covered by Limited Warranty within two weeks of receiving the equipment in Florida and return same to you, freight prepaid.

c) You must present a copy of your Purchase Sales Slip at the time you request warranty service.

Shipping/Mailing Address:

SI-TEX Marine Electronics Inc.
11001 Roosevelt Blvd., Suite 800
St. Petersburg, FL 33716
727-576-5734

SI-TEX Marine Electronics Inc. offers a complete line of quality marine electronics including fishfinders, electronic charting systems, radars, autopilots, GPS/WAAS/Loran receivers, SSB receivers, direction finders, VHF/FM radiotelephones and integrated systems.
For more information, contact your SI-TEX dealer or the main office, located in St. Petersburg, Florida.