

**SITEX** 

SST-110

CE



Sea Water Temperature Gauge

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# Introduction

Thank you for purchasing the SI-TEX SST-110 Sea Water Temperature Indicator. Your new SST-110 represents the latest in Sea Water Temperature Instrumentation available. Whether you use your Sea Water Indicator for Sports fishing or Commercial Fishing, the SST-110 will bring you unlimited hours of trouble-free performance, reliability, and most importantly, good fishing!

Research has indicated that it is not as much the absolute temperature but rather the convergence of temperature layers which signifies the presence of fish. Various species of fish prefer certain temperature ranges and it is desirable to start at that point. If for example, you notice that the fish were biting at 73.40°F on Tuesday; chances are good that they will be biting again at the same temperature at a later date. The unique sensitivity of the SST-110 with its high resolution temperature readout, temperature trend indicators, and temperature alarms will allow you to actually navigate back to a point where you had your previous strike.

When planning the installation of your SST-110 it is important to carefully choose a location for the temperature probe/transducer that will not subject it to high levels of onboard heat such as is found in the engine compartment. The temperature probe is designed for extreme environmental conditions and will provide long, dependable operation when properly installed; it does not have the same installation considerations as a depth transducer would have. Install the temperature probe below the water line of the boat at a point that will not come out of the water during normal cruising. It is not necessary to mount the

probe perpendicular to the bottom; the probe is non directional. Avoid mounting the probe in an area that will submerge the inside portion of the probe in warm bilge water, or Ice water from fish boxes. Also, avoid mounting the probe near the engine exhaust, as this will adversely affect the overall accuracy of the sea water temperature indication

The Si-Tex SST110 provides accurate digital instrumentation for sea water temperature with a resolution of 0.01 degree Fahrenheit or Celsius.

For maximum accuracy, the displayed temperature may be calibrated using the front panel keys to compensate for slight differences in temperature transducers.

You can set high and low temperature alarms and a temperature trend arrow lets you know with a glance if the sea temperature is getting warmer, cooler or constant.

Five levels of backlighting can be selected and remotely switched ON/OFF. All setup and calibration constants are saved to a nonvolatile memory. The SST110 outputs standard NMEA 0183 data of water temperature in Degrees F and degrees C and works on both 12 and 24 VDC systems.

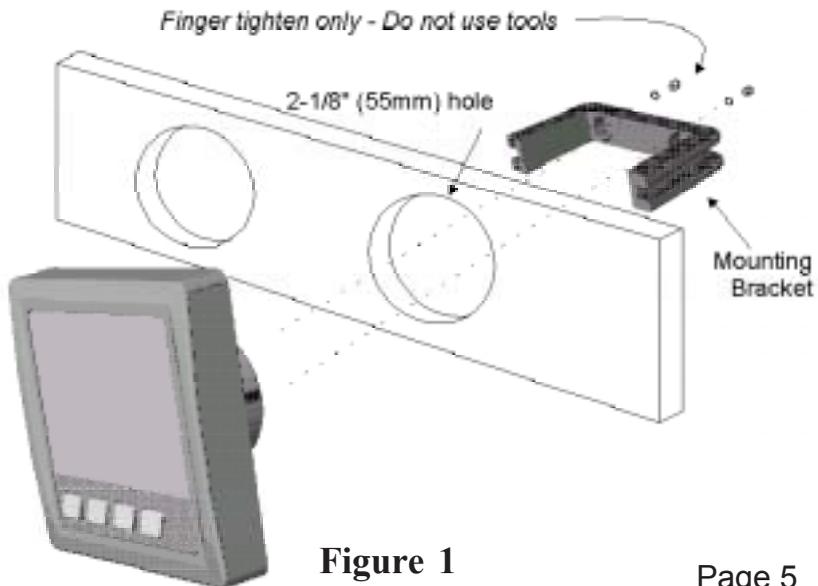
The SST110 with its large display digits draws only .035 amps and only .055 amps with full backlighting. Both transom mount and thru-hull mount temperature transducers are available separately.

The SST110 works with 30Kohm temperature senders and is fully compatible with the popular Dytek temperature probe.

# Installation

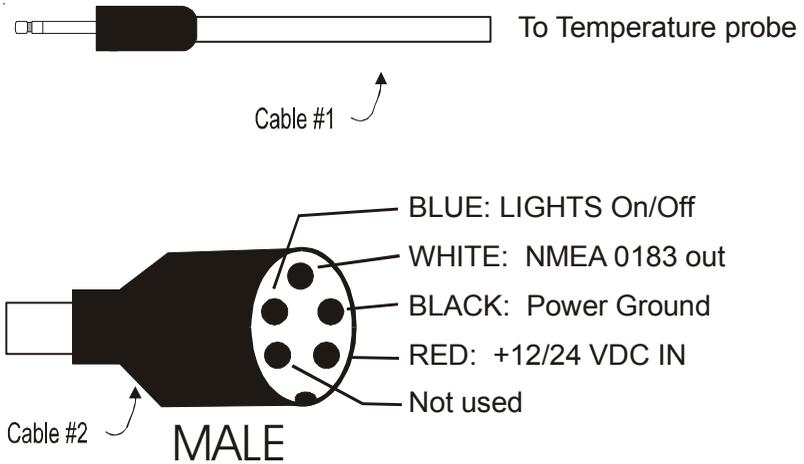
*Before starting the installation, please read this entire section first. Finger tighten the screws that mount the instrument bracket - It is not necessary or recommended to use tools.*

- Drill a 2-1/8" (55mm) mounting hole where you desire to mount the instrument (Figure 1).
- Connect the various wires from Cable 1 and Cable 2 as shown in Figures 2 and Figure 3.
- Carefully check all your wiring against figures 2 and 3 and then mount the instrument in the hole. Use only finger tension to tighten the bracket hold-down nuts

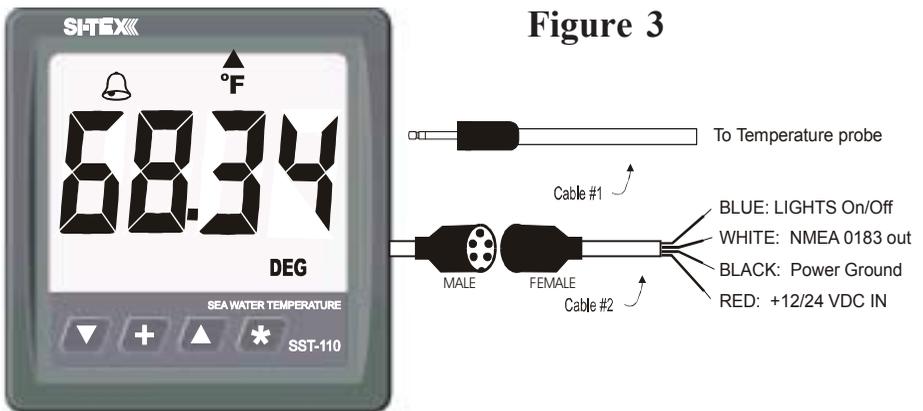


**Figure 1**

### Figure 2



### Figure 3



# Operation

## Key Functions

The ▼, +, ▲ and \* keys are used to select what to display, set backlight levels, calibrate temperature, set alarms and change units of measure. New information is automatically saved to a nonvolatile memory.

## Backlight Intensity

Press + the key 1/2 second to adjust the backlight level for night viewing. Each time you press the + key for 1/2 second the level will get brighter 1, 2, 3, 4, OFF, 1, 2, ... etc. The blue backlight ON/OFF control wire in cable #2 must be switched to +12/24V for the backlights to work and offers external backlight ON/OFF control. If ON/OFF control is not required, connect the blue backlight ON/OFF wire to +12VDC or +24VDC permanently.

## View Sea Water Temperature

Sea Water Temperature is normally displayed except when setting alarms or viewing Maximum Temperature Seen or Minimum Temperature Seen memory .

## View/Set Low Temperature Alarms

To set the Low Temperature Alarm value, press the ▼ key for ten seconds while viewing water temperature (until you hear a long beep). Use the ▼ and ▲ keys to adjust the value. Press the + key for 1/2 second to save the new value to memory.

## View/Set High Temperature Alarms

To set the High Temperature Alarm value, press the ▲ key for ten seconds while viewing water temperature (until you hear a long beep). Use the ▼ and ▲ keys to adjust the value. Press the + key for 1/2 second to save the new value to memory.

## Arming and Disarming the Temperature Alarms

To arm (enable) the low and high temperature alarms, press the ▲ key for one half second while viewing water temperature. The alarm bell symbol will be displayed. If the temperature drops below the Low Temperature alarm value or increases above the High Temperature alarm value (and the alarms are armed), then the alarm buzzer will sound and the alarm bell will flash.

To disarm (disable) the low and high temperature alarms, press the ▼ key for one half second while viewing water temperature. The alarm bell symbol will disappear.

### View Minimum Temperature Seen Memory

To view the minimum temperature seen (since last reset), quick press both the Use the ▼ and + keys. The ▼ icon will blink and after 5 second the display will revert to showing Temperature.

### View Maximum Temperature Seen Memory

To view the maximum temperature seen (since last reset), quick press both the Use the + and ▲ keys. The ▲ icon will blink and after 5 second the display will revert to showing Temperature.

### Reset Minimum/Maximum Temperature seen Memory

To reset the minimum and maximum temperature seen memories, press both the ▼ and ▲ keys for ten seconds while viewing water temperature (until you hear a long beep).

## Calibrating Temperature

To calibrate the temperature value, press and hold both the ▲ and \* keys for ten seconds while viewing water temperature (until you hear a long beep). Use the ▼ and ▲ keys to adjust the value to read correctly. Press the + key for 1/2 second to save the new value to memory. The ▼ and ▲ icons will flash while in temperature calibration mode.

## Selecting Temperature Units (Deg. F/C)

While viewing water temperature, quick press both the ▼ and ▲ keys to toggle between **degrees C** and **degrees F**.

## NMEA 0183 Sentences

The SST110 outputs serial data of water temperature once per second in standard NMEA 0183 serial data format. The sentences are output in the following formats:

Water temperature (Degrees C): \$VWMTW,xx.xx,C\*CS

Water temperature (Degrees F): \$IIXDR,G,xx.xx\*CS

Where CS is the NMEA 0183 checksum.

## Temperature Trend Indicators

To help you see if the sea water temperature is falling, rising or stable the SST110 keeps track of this information and displays an UP arrow “▲”, a down arrow “▼” or no arrow.

The sensitivity of the temperature trend indicators (how fast it responds and the duration of its memory) is adjustable using the front panel keys. To adjust the temperature trend indicator sensitivity, press and hold both the ▼ and \* keys for ten seconds while viewing water temperature (until you hear a long beep). Use the ▼ and ▲ keys to adjust the value between 0 (fast/short memory) and 200 (slow/long memory). Press the + key for 1/2 second to save the new value to memory.

## Display Unit Serial Number

To display the unit serial number, quick press both the + and \* keys while viewing water temperature.

## Notes and Warnings

- a) During calibration or setting of values, pressing and holding down the ▼ or ▲ keys will cause the values to scroll faster the longer you hold down the keys.
- b) A “quick press” is any press of a key or keys lasting less than 1/2 second.
- c) A 1/2 second press can be any press longer than 1/2 second and shorter than 2 seconds.
- d) On applying power to the SST110, the software version is displayed for two seconds (e.g. “- - 1.0”).
- e) The temperature will be unstable for the first 10-15 seconds after the power is first turned on. During this time a “U” will be displayed.
- f) The SST-110 will display “-HI-” if the temperature sensor connections are a short circuit or too low a resistance..
- g) The SST-110 will display “-LO-” if the temperature sensor connections are open circuit or too high a resistance.

# Specifications

**Power supply:** 9.50 to 33.00 (absolute maximum)VDC, 0.045 amps nominal. Operation outside this range can cause erratic behavior or damage.

**Operating temperature:** 32 to 122 F ( 0 to 50 C)

**Size:** 4.3" x 4.3" x 3.5" deep (110 x 110 x 89 mm).

**Display Data:** Water Temperature, High and Low alarms, temperature trend arrows, alarm symbol.

**Resolution:** 0.01 deg Fahrenheit or Celsius.

**Accuracy:** Front panel adjustable.

**Range:** 32.00 to 99.99 deg F (0.00 to 37.77 deg C)

**Transducers:** Transom and thru-hull temperature transducers available separately.

**Display:** 4 digit LCD, 5 levels of backlighting.

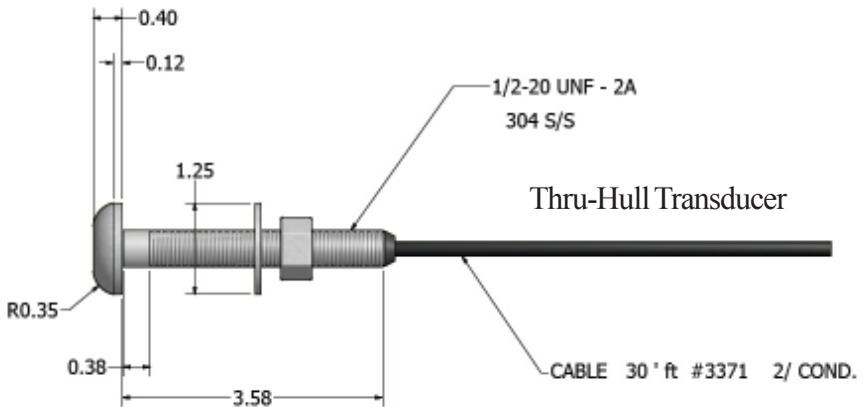
**NMEA 0183 sentences:** Water temperature:  
(Degrees C) \$VWMTW,xx.xx,C\*CS  
(Degrees F) \$IIXDR,G,xx.xx\*CS

CS=Check Sum

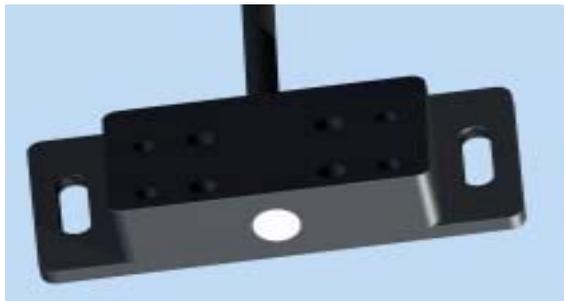
# Transducer Information

The SST110 temperature transducer has the following characteristics:

Temperature		Resistance
50.00 deg F	10.00 deg C	58.80K
59.00 deg F	15.00 deg C	46.20K
68.00 deg F	20.00 deg C	37.00K
77.00 deg F	25.00 deg C	30.00K
86.00 deg F	30.00 deg C	24.42K



Transom Mount  
Transducer





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