



Electronic Compass for SP110



OPERATION

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Spécifications

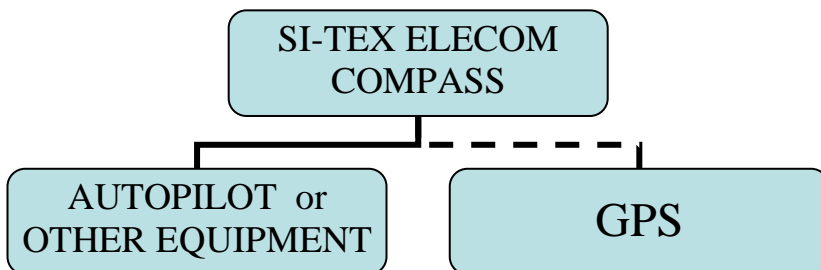
Power Requirement:	12 or 24 Volts DC
Current Draw:	≈ 70mA on 12 VDC
Resolution:	0.1°
Repeatability:	+/- 0.5°
Maximum Rate of Turn:	250°/sec
Tilt Compensation:	+/- 30°
Heading Adjustment (horizontal):	+/- 20°
Data Output (NMEA 0183)	HDM (\$HCHDM, ***,) Default setting
Data Output (Options)	HDM, HDT or HDG – set with Hyperterm
Pitch and Roll Output	Option turn on in Serial Menu
Rate of Turn	Option turn on in Serial Menu
Cable length	5 M
Weight:	350grams
Dimensions:	L: 125mm B: 80mm H: 50mm

Warning!

- **THE SI-TEXCOMPASS USES EXTERNAL INFORMATION TO COMPUTE A HEADING. IF ANY OF THIS INFORMATION IS INCORRECT THE HEADING READING MAY BE INACCURATE.**
- **THE ACCURACY MAY BE REDUCED BY INCORRECT MOUNTING AND OR MAGNETIC INTERFERENCE.**
- **IT IS STRONGLY RECOMMENDED THAT ON A STEEL VESSEL THE UNIT BE MOUNTED AWAY FROM THE INFLUENCE OF THE IRON OR STEEL**
- **IF A GPS IS CONNECTED TO THE SYSTEM, THE GPS ASSISTED MODE WILL NOT OPERATE BELOW A SPEED OF ONE KNOT AND WILL RETURN TO MAGNETIC FIELD DETECTION WHEN THE VESSEL SLOWS TO ONE KNOT.**

SI-TEXCompass System

The SI-TEXELECOM Compass system may comprise the following units: -



*Dashed line (GPS) only for applicable for ELECOMG where a GPS is connected to give COG (course over ground) information to calibrate compass.

The system is used provide heading information to an Autopilot or other equipment. The system requires a supply voltage of **12 Volts DC**. Normally supplied by the Autopilot.

Installation of System Components:

Ensure you have all the components of the system being installed.

Tools required:

- Screwdrivers – flat blade and Philips
- Power drill + assortment of drill bits
- Multi meter (DVM)
- Ancillaries such as tape, connecting block, screws, cable ties, etc.

Access for wiring must be provided. Cables have to be run to the autopilot display or control unit.

All wiring should be kept as far as possible from radio aerials and aerial cables to prevent interference to the radio and to prevent transmitted signals from the radio influencing the heading information. As no steel is used in the compass, there is negligible effect on a steering compass.

The compass must be mounted a minimum distance of 1 metre from any boat compass, radios, speakers or other products with magnetic properties to avoid interference.

Compass

Take care when handling the compass as it is a sensitive piece of equipment. The compass position is the most important item in the installation of the autopilot. Good course holding is dependent on the compass being free from magnetic interference.

Position:

- Select a dry position free from magnetic interference. (Note other side of bulkheads and deck heads for magnetic type objects)
- Avoid positions near radios, speakers, aerial cables or any other current carrying cable.
- Mount the compass horizontally with the arrow (bow) pointing in the same direction as the boat's bow. Use non magnetic screws (304 grade stainless steel)
- Run cable to equipment using heading data (keep away from other cables)

Compass Mounting



The SI-TEX Compass must be mounted on a horizontal surface. (hanging from a deck head, or on a shelf) with the BOW arrow towards the front of the vessel. It must **NOT** be mounted on a vertical surface. If mounted externally, the unit must be mounted on a shelf to eliminate the chance of water pooling in the unit. The unit is internally sealed.

The system must always have power disconnected and reconnected, if the method of mounting is changed.

Ensure no magnetic influence nearby will interfere with the natural earths magnetic field. Keep away from steel or radio speakers.

Wiring when used with an SP110

Pin 1	Positive Power to Compass (Autopilot input Power)
Pin 2	Heading Data
Pin 3	0v Volts Feedback Supply
Pin 4	0v Volts Feedback Supply
Pin 5	Calibration Data from Autopilot
Pin 6	Not Used

Note: Pin locations are relative to pin 1 which always has a dot adjacent.

SI-TEX Electronic Compass – E-Compass (ELECOM) – Wiring Colour Code

E-Compass Internal connections

<u>PCB Pin #</u>	<u>Wire Colour</u>	<u>Signal</u>	<u>Description</u>
P1	Red	+10 V	DC Voltages In
P2	Yellow	TX	Transmit Data +
P3	Shield	V-	DC Voltage –
P4	Blue	RX-	Receive Data In –
P5	Green	RX+	Receive Data In +

Connection to SP-110

<u>Wire Colour</u>	<u>Signal</u>	<u>LTW Plug Pin</u>
Red	+10 V	Pin 1
Yellow	TX	Pin 2
Shield	V-	Pin 3
Blue	RX-	Pin 4
Green	RX+	Pin 5

Compass Heading

- Switch on power to system
- Check display heading
- Check this heading against a known accurate bearing

If display reading differs from known heading *, the compass can be calibrated by following the autopilot manual.

Compass Alignment

The compass may need to be aligned with a known heading

- Loosen the two mounting screws on the compass base plate
- Rotate compass until display reads the same the known bearing
- Re-tighten the screws

Definition of Terms

Heading: This is the magnetic * heading of the vessel at the current time.

Course-to-steer: The heading which the autopilot is attempting to maintain.

Testing Procedure

Initial Inspection and Testing



1. Confirm power to be connected is the required DC voltage.	
2. Power Supply 12V DC is available.	
3. Ensure polarity of the voltage supply is correct.	
4. All electrical connections are correct.	
5. Loose cables are clipped or tied up.	

Dockside Tests

1. Check the compass will not be damaged by any moving object.	
2. Check compass heading.	
3. Adjust if necessary.	

Trouble Shooting

Display is not displaying any heading.

- Check power is available – 12VDC
- Check circuit breaker (if applicable)
- Check all wiring connections

Warranty

SI-TEX products are thoroughly inspected and tested before shipment from the factory and are warranted to be free of defects in workmanship and materials for a period of one year from the date of shipment from the factory.

This warranty is extended to and is solely for the benefit of the original consumer purchaser.

All units in need of repair will be repaired without charge to the purchaser during the above mentioned period in accordance with the following terms and conditions:

1. The defective unit is returned "freight prepaid" to **Si-Tex Marine Electronics 25 Enterprise Zone Drive, Suite #2 Riverhead, NY 11901**.
2. Proof of purchase is supplied and original Serial Numbers on equipment have not been changed.
3. Information is provided regarding the nature of the failure or problem occurring.
4. A return address is supplied to enable the equipment to be returned by road freight. Any other means of transport will be charged to the customers account and must be paid in advance.

This warranty does not cover defects or damages caused by unauthorised service or damage through accident, misuse or abuse. The owner is also responsible for providing reasonable maintenance and weather protection of the equipment.

SI-TEX shall not be liable for damage or loss incurred resulting from the use and operation of this product. SI-TEX reserves the right to make changes or improvements to later models without incurring the obligation to install similar changes to equipment already supplied. Some states do not allow the exclusion or limitation of incidental or consequential damages; therefore the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

Additional Information

Refer to SI-TEX website