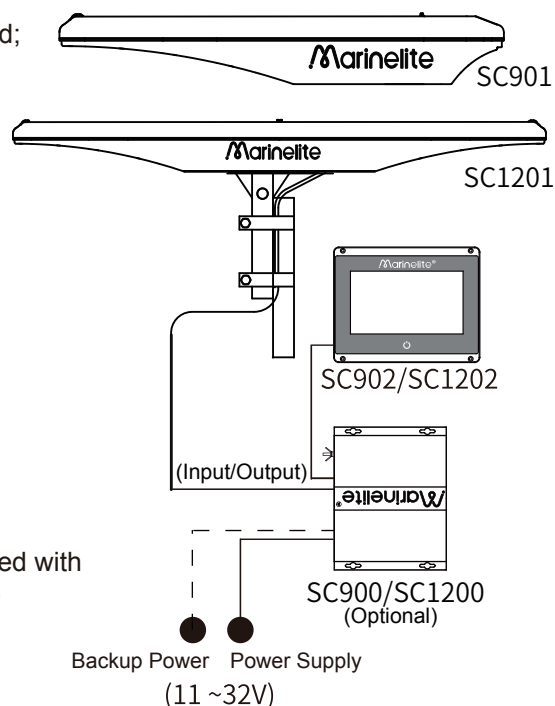


SC90/SC120 Satellite Compass Operation Manual

Introduction

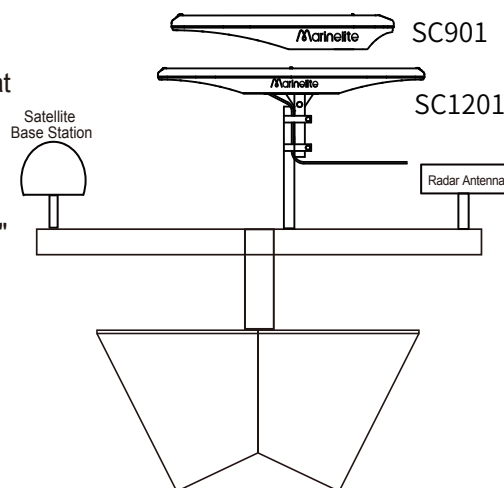
- Pre-type carrier phase decoding technology, more precise orientation;
- Beidou/GPS dual-star system with faster directional speed;
- Advanced speed and course filtering technology to make the data more stable; Built-in gyro compensation system has better heading performance;
- It has the characteristics of fast start, signal recapture, fast heading update, and high turning rate;
- Excellent industrial product design, stylish appearance, easy installation;
- Maintenance free and no recurring cost as there are no mechanical parts;
- Standard NMEA0183 output, providing high-stability, high-precision ship heading data and positioning data for Radar, ARPA, ECDIS, AIS, Chart Plotter, Autopilot, Sonar and other marine navigation equipment;
- Optional full-touch compass display, the display is equipped with multiple display modes, the data is more intuitive, and the equipment is more convenient.



Antenna Installation

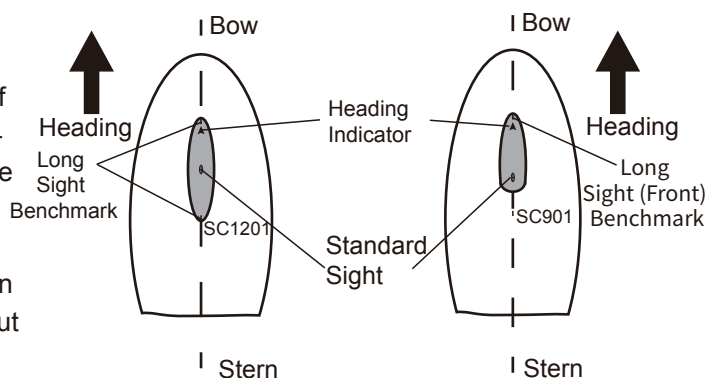
➤ Installation location

- The satellite compass antenna is recommended to be installed at the highest position on the ship, without any obstructions in the satellite signal receiving surface;
- Stay away from any metal surface or magnetic surface that can reflect satellite signals. This reflection may lead to signal "multipath" to a certain extent, thereby reducing the heading performance and accuracy of the compass; With the compass as the center, there should be no metal surface above the horizontal plane of the fuselage within a radius of 2m;
- Install away from radio frequency radiation sources to avoid RF radio frequency interference. If there are radar systems, satellite stations, etc., ensure that the antenna is installed outside the range of the radar radiation beam.



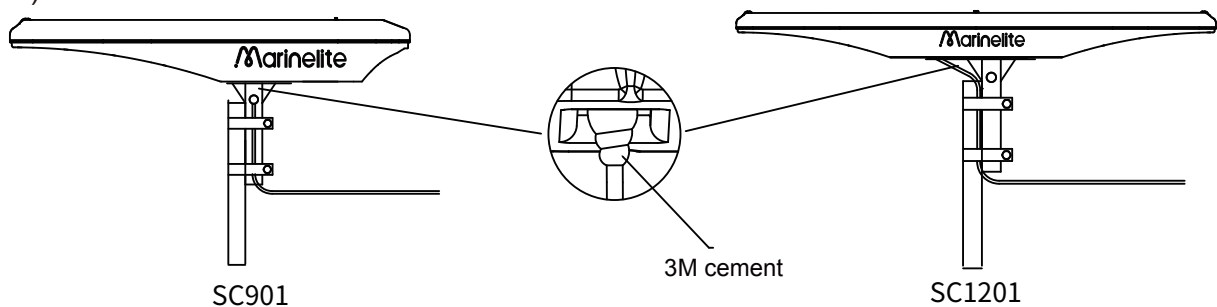
➤ Installation direction

Under normal circumstances, the longitudinal axis should be aligned with or parallel to the centerline of the ship's fore and aft during installation. The antenna shell has a heading direction mark and a long line of sight rod at the end. Adjust the position of the antenna through the standard line of sight. If there is deviation when fixing the antenna, You can pass the display(Optional) or Junction box carries out the installation angle deviation correction, the correction range is $-180^{\circ} \sim 180^{\circ}$, and the factory default value is 0° .



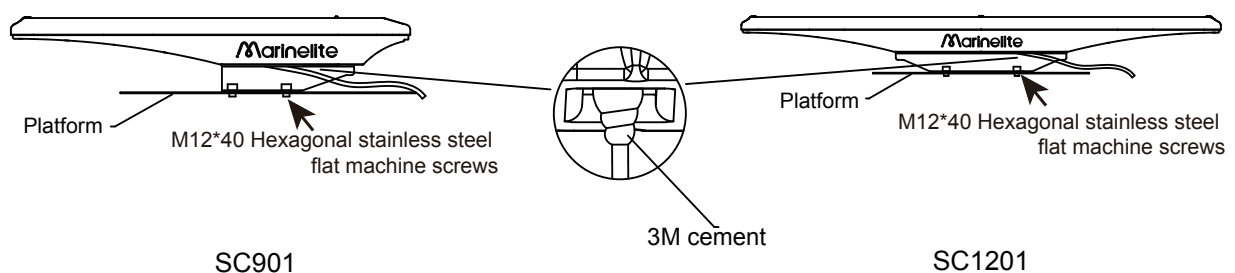
➤ Installation and connection

a) Pole-mounted installation



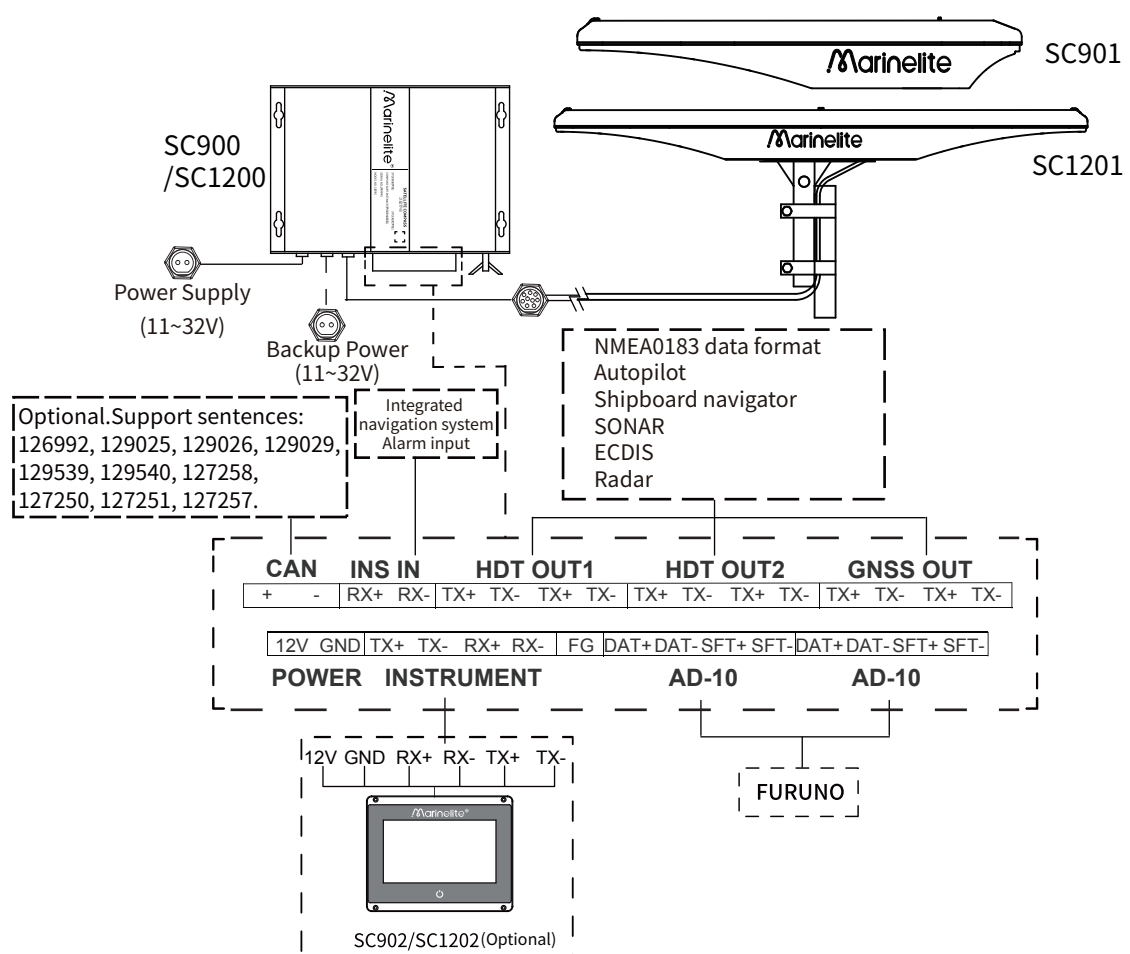
Note: In order to ensure good connection of wiring and good waterproof effect, pls refer to above installation diagram and wrapped with 3M cement

b) Platform installation



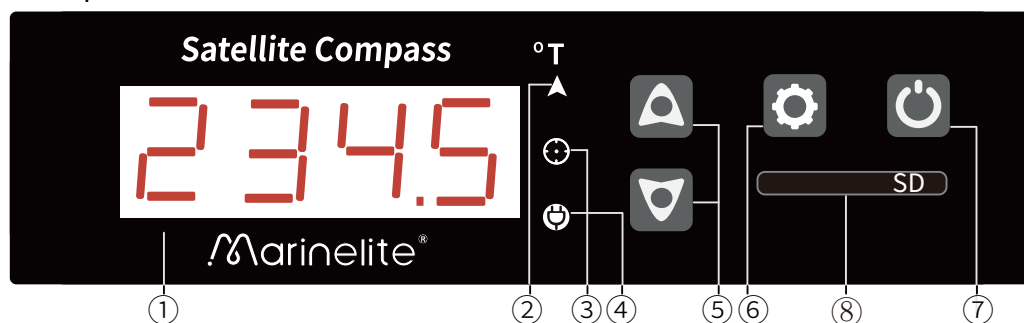
Note: The cable should not be too tight to prevent thermal expansion and contraction from pulling the cable and causing equipment damage.

c) Connection



Junction Box description

➤ Display Description



①	Screen Display	Heading data display or the current time or installation angle correction value;
②	Heading Indicator	If the heading is not locked within 2 minutes after starting, the heading indicator light will not be on; When the heading is not locked after 2min, the red heading indicator light will flash; After locking the heading data, the green heading indicator light is on; Heading is still not locked after compensation, indicating light will flash; When heading is lost, the heading indicator red light will flash. If hdt lost alarm is acknowledged, the hdt light is red.
③	Positioning Indicator	No positioning within 2 minutes after starting, the indicator light will not be on; No positioning after 2min, the red indicator light will flash; After locating data, the green indicator light is on; If the location is lost, the red indicator light will be flash. If positioning lost alarm is acknowledged, the positioning indicator is red.
④	Over-voltage alarm indicator	When the power supply is working normally, the over-voltage alarm indicator does not light up; If the power supply voltage exceeds 34V, the red indicator light is always on.
⑤	Up and down keys	Adjust the increase the brightness of the screen and indicator light;Respond to the alarm; When setting the function, switch the menu option, long press to switch quickly without cycling.
⑥	Function Key	Short press to switch the display content: heading data, time, installation angle correction data. Press Function Key continually to enter the menu function setting; In the menu function page: Press shortly to enter the sub-menu setting; Press continually to return the previous menu or exit the menu.
⑦	Power Key	Press it shortly to turn on; Press it for 3S to turn off Power failure abnormally, the device will start automatically after power on
⑧	SD card socket	Users can upgrade data boxes using SD cards.

➤ Port Function Description

PORT	FUNCTION
POWER IN	The power supply.Voltage DC 24V, usable range of 11~36V. A voltage alarm will be triggered when the power is cut off.
BACK POWER	Backup power supply. Voltage DC 24V, usable range of 11~36V.
ANT	GNSS compass antenna data interface.
CAN	Optional.Support sentences: 126992, 129025, 129026, 129029, 129539, 129540, 127258, 127250, 127251, 127257.
INS IN	Input port for alarm related reply statement.
HDT OUT1 (COM2)	Heading and positioning sentence output port; The default baud rate is 4800bps, and the sentences are HDT(10Hz),RMC(1Hz),ROT(1 Hz); If you need other sentences, please set it in the display menu. Note: The larger the number of sentences opened or the high frequency of sentences opened, the higher the baud rate is required, otherwise some sentences may be lost.
HDT OUT2 (COM3)	Heading and positioning sentence output port; The default baud rate is 38400bps, and the sentences are HDT(10Hz),RMC(1Hz),ROT(1 Hz); If you need other sentences, please set it in the display menu. Note: The larger the number of sentences opened or the high frequency of sentences opened, the higher the baud rate is required, otherwise some sentences may be lost.
GNSS OUT (COM4)	GNSS positioning sentence output port; Fixed baud rate 9600bps, sentences are RMC、GGA、VTG、GLL、ZDA, output frequency is 1HZ
POWER INSTRUMENT	External power output port, can supply power to display. Display data interface, can be connected to the display unit.
AD-10	The data cycle is 25ms, and it can be connected to applicable equipment such as radar using AD-10 data interface

Menu description

Menu	Function	Description
SF (Smooth Filter)	Filter settings	Hdt : (Hdt) Heading filter, Setting item: 0~60 CoG : (CoG) Speed and course filter, Setting item: 0~255 Rot : (Rot) Rate of turning filter, Setting item: 0~60 Note: For above data, smaller the data set, higher the follow-up performance; larger the data, more stable. SYS : (Sys) Heading filter coefficient, setting item: 0.0~5.0, if larger than the setting value, the filter is closed. STEP : (Step) Step limit value: 0.0°/s to 3.0°/s. 0 is off, and ROT is over the setting value, the heading will output with the setting step value. This setting applies only to COM3 serial port.
OFF (Offset)	Deviation correction for Installation angle	Setting items: -180.0~180.0 Set up when there is deviation in installation
buT (BackUpTime)	Compensation time	Setting items: 1~5 (minutes) When GNSS cannot be oriented for a short time due to some reasons, the heading will use the built-in inertial navigation module to output compensation data
ALT (Alert)	Alarm	beep : (beep) Voice Alerts Hdt : (Hdt) Heading loss alarm Pos : (Pos) Positioning loss alarm Volt : (Volt) Over-voltage alarm Under each submenu item, short press the function key to enter the setting item: OFF , on
baud (baudrate)	Baud rate setting	out1 : (out1) COM2 setting, default 4800 out2 : (out2) COM3 setting, default 38400 Under each submenu, short press the function key to enter the setting item: 0048 0096 0192 0384 0576 1152 4800 9600 19200 38400 57600 115200
ID (ID)	Location source ID	Hdt : (Hdt) Change HDT, HDG, THS, Sentence ID, default HE; The ID options are: GP GB GL GN HE HC HN Rot : (rot) Change the ROT Sentence ID, default TI The ID options are: GP GB GL GN HE HC HN TI GNSS : (GNSS) Change the GNSS related sentence identification, default GP The ID options are: GP GB GL GN
FREQ (Frequency)	HDT output frequency setting	out1 : (out1) COM2 setting, default 1 Hz out2 : (out2) COM3 setting, default 20 Hz The options are: 0 1 5 10 20 50 0Hz 1Hz 5Hz 10Hz 20Hz 50Hz
TIME (time zone)	Time zone setting	-12~14, Default 8

*Note: 1) For any inconsistencies between this operation card and the manual, this operation card shall prevail.

2) This operation card is suitable for versions above V3.1.7, other versions are not compatible, and can be upgraded if necessary.

3) If the parameters are changed, they cannot be changed in time, please consult the seller.