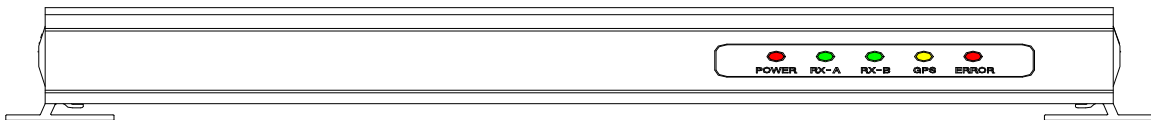







AIS RECEIVER (SI-60RX)

SPECIFICATION

RX Band	156.025 MHz-162.025 MHz Channel 1. Default CH is 88B, AIS(162.025 MHz) Channel 2. Default CH is 87B, AIS(161.975 MHz)
Channel Interval	25KHz
Method of Communication	Simplex and Semi-Duplex
Antenna Impedance	50Ω(SO-239)
Frequency Stability	±10PPM(-20℃ to +60℃)
Baud rate	38400Baud(38.4Kb)/4800 Baud
Format	ITU/NMEA0183
Rated Voltage	DC 12V/24V
Consumption Currency	Maximum 0.4A Max.(DC 12V)
Temperature	-15℃ ~ +55℃
Dimensions	233(W) x 122.8(H) x 41(D)
Weight	1Kg

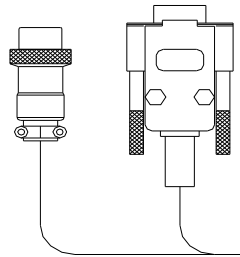
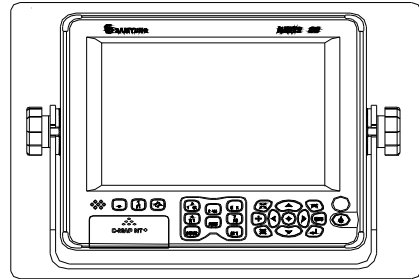
EQUIPMENT ILLUSTRATION



LED	FUNCTION	REMARK
 POWER	-LED is ON when the power is supplied	Red LED
 RX-A	-Blink RX-A when AIS signal receiving -Blink when the communication speed is 4.8k	Green LED
 RX-B	-Blink RX-B when AIS signal receiving -Blink when the communication speed is 38.4k	Green LED
 GPS	-Blink when GPS data receiving	Yellow LED
 ERROR	-Blink when error occurs from data channel -Blink when receiving data is over-flowed -Blink when error occurs from modem IC	Red LED

# INSTALLATION

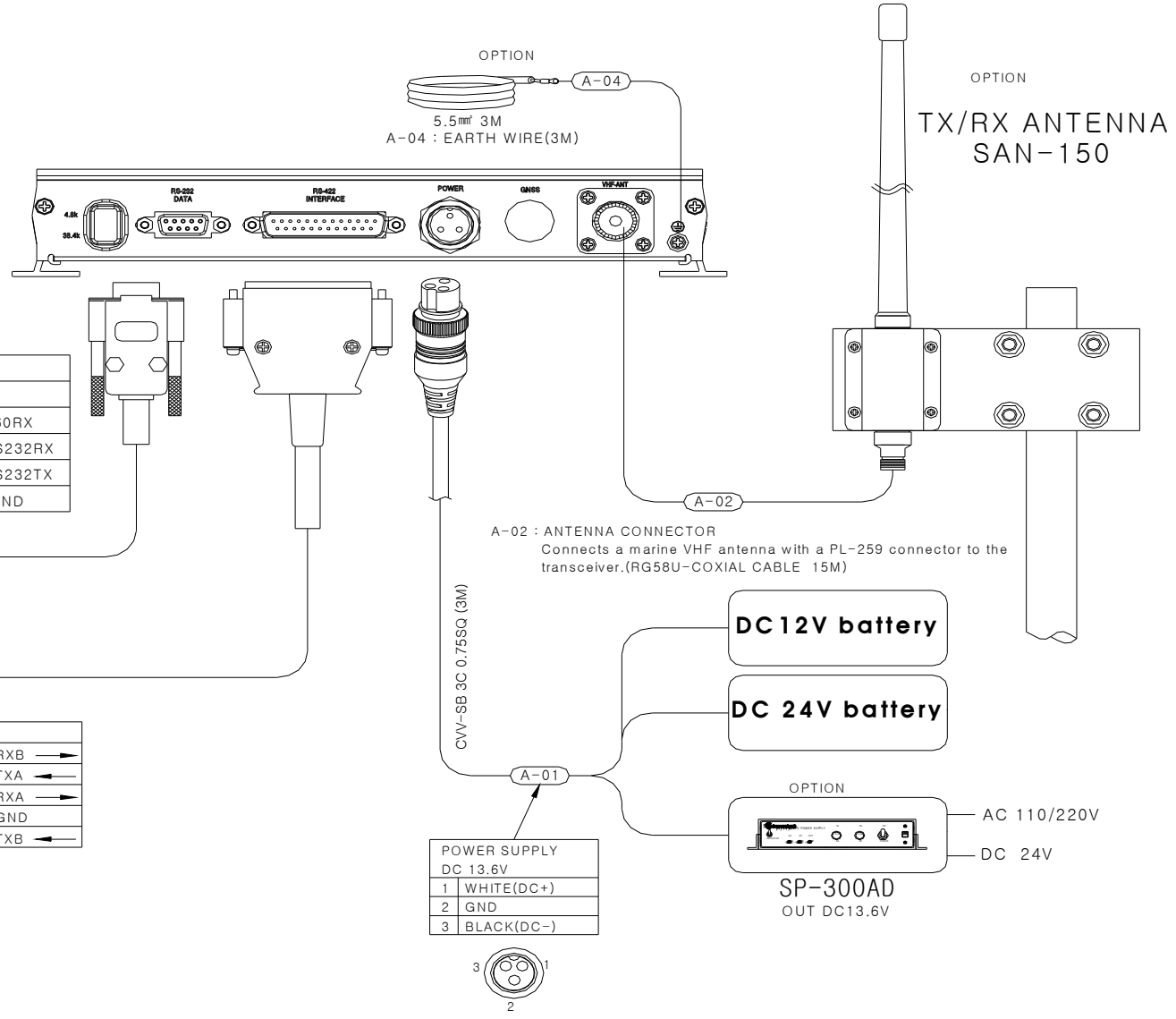
PC / GPS PLOTTER



DATA CABLE			
RS-232 CABLE			
GPS PLOTTER	PC	A-03	SI-60RX
1. RXD	2. RXD	↔	2.RS232RX
2. TXD	3. TXD	↔	3.RS232TX
3/4. GND	5. GND	—	5. GND

DISPLAY

DATA CABLE			
6 : MDK_RXB	RS-422 RXB	→	
7 : MKD_TXA	RS-422 TXA	←	
18 : MDK_RXA	RS-422 RXA	→	
19 : MDK_GND	RS-422 GND	—	
20 : MKD_TXB	RS-422 TXB	←	



## DATA COMMUNICATION SPEED SETTING

It is possible to set up data transmitting speed either 4.8K or 38.4K by using switch on the DATA communication port in the main unit.

### NAVIS-PLOTTER SET-UP(800,2600,3100,5100)

#### ❑ EXTERNAL PORT SET-UP

-FUNCTION FOR THE OUTPUT PORT TO BE COMPATIBLE WITH OTHER EQUIPMENT

MENU → [3.SYSTEM] → [4.SYSTEM SET-UP] → [2.OUTPUT PORT SET-UP] → CHOOSE NMEA VERSION(1.5 OR 2.0) → CHOOSE SPEED(bps) → CHOOSE DISPLAY TIME(SEC.) INTERVAL

#### ❑ AIS INFO. DISPLAY SET-UP

-THIS FUNCTION IS TO DISPLAY INFO. FROM OTHER VESSEL WITH AIS SYSTEM ON THE PLOTTER

MENU → [3.SYSTEM] → [4. SYSTEM SET-UP] → [3.AIS SET-UP] → [1.ON/OFF] PRESS "ENTER" KEY TO CHANGE ON/OFF STATUS

#### ❑ NAVIS-PLOTTER SET-UP(3700)

EXTERNAL PORT SET-UP

-FUNCTION FOR THE OUTPUT PORT TO BE COMPATIBLE WITH OTHER EQUIPMENT

MENU → [4.INITIAL SET-UP] → [7.DATA FORM<INPUT/OUTPUT>] → [INPUT/OUTPUT] PRESS "SHIFT" KEY TO CHANGE INPUT/OUTPUT STATUS

#### ❑ AIS INFO. DISPLAY SET-UP






-THIS FUNCTION IS TO DISPLAY INFO. FROM OTHER VESSEL WITH AIS SYSTEM ON THE PLOTTER

MENU → [4.INITIAL SET-UP] → [7.DATA FORM<INPUT/OUTPUT>] → [INPUT/OUTPUT] →

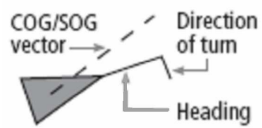
[5. RCV-3800] → SELECT THE SPEED [1.4800/4.38400] → AIS INFO. DISPLAY SET-UP

## AIS SIGNAL INFORMATION

SI-60RX SHOWS 5 SIGNALS AND EACH SIGNAL MEANS AS FOLLOWS.

1.  : SIGNAL FOR ANCHORING VESSEL
2.  : SIGNAL FOR MOVING VESSEL
3.  : SIGNAL FOR CHOSEN VESSEL
4.  : SIGNAL FOR THE CLOSE VESSEL
5.  : SIGNAL FOR THE VESSEL WITH NO DATA INFORMATION

## TERMS OF SIGNAL



COG/SOG: COURSE OVER GROUND/SPEED OVER GROUND

HEADING

DIRECTION OF TURN


## 통신 속도 설정

본체에서 DATA통신포트(RS-232, 422)의 전송 속도를 스위치를 이용해서 4.8K/38.4K로 설정 가능

## NAVIS-PLOTTER 설정(800, 2600, 3100, 5100)


### □ 외부 포트 설정

- 출력 포트를 타 장비와 호환되도록 설정하는 기능

 ➡ [3.시스템] ➡ [4.시스템 설정] ➡ [2.출력 포트 설정] ➡ 타 장비와 호환성 있는 NMEA 선택 후, ➡ 속도(bps)를 선택 후, ➡ 시간(초) 간격 선택 후,

### □ AIS 정보 표시 작동 설정

- AIS가 설치된 선박으로부터 정보를 수신하여 플로터 화면에 AIS 선박정보를 표시하는 기능

 ➡ [3.시스템] ➡ [4.시스템 설정] ➡ [3.AIS 설정] ➡ [1.작동/중지] (누를 때마다 작동/중지 반복 선택됨)

## NAVIS-PLOTTER 설정(3700)

### □ 외부 포트 설정

- 출력 포트를 타 장비와 호환되도록 설정하는 기능

[메뉴] ➡ [4.초기설정] ➡ [7.데이터 폼<입력/출력>] ➡ [입력/출력] (“전환”버튼을 누를 때 마다 입력/출력 반복 선택됨)


### □ AIS 정보 표시 작동 설정


- AIS가 설치된 선박으로부터 정보를 수신하여 플로터 화면에 AIS 선박정보를 표시하는 기능


[메뉴] ➡ [4.초기설정] ➡ [7.데이터 폼<입력/출력>] ➡ [입력/출력] ➡ [5. RCV-3800] ➡ [1.4800 / 4.38400] 통신속도선택 ➡ AIS 정보 표시 작동 설정


## AIS 기호설명


본 장비의 AIS는 네 가지 기호로 표시되며 각각의 기호의 기능은 다음과 같다.

(1)  : 쉬고 있는 선박을 표시하는 기호

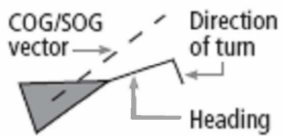
(2)  : 움직이는 선박을 표시하는 기호

(3)  : 선박을 선택할 경우 표시되는 기호

(4)  : 위험이 있는 선박을 표시하는 기호

(5)  : 선박에서 데이터 정보가 수신 안될 때 표시하는 기호

기호의 의미는 다음과 같다.

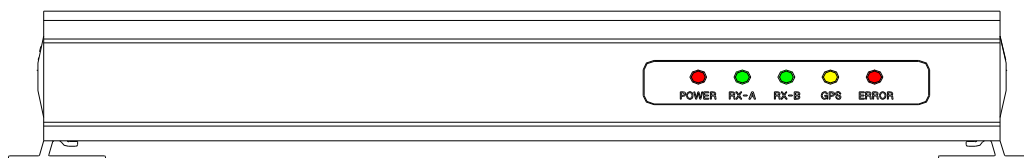


- COG/SOG : 대지속력, 대지침로의 방향을 의미한다.
- Heading : 선박의 앞부분을 의미한다.
- Direction of turn : 선박의 회전방향을 의미한다.

## 主机指标

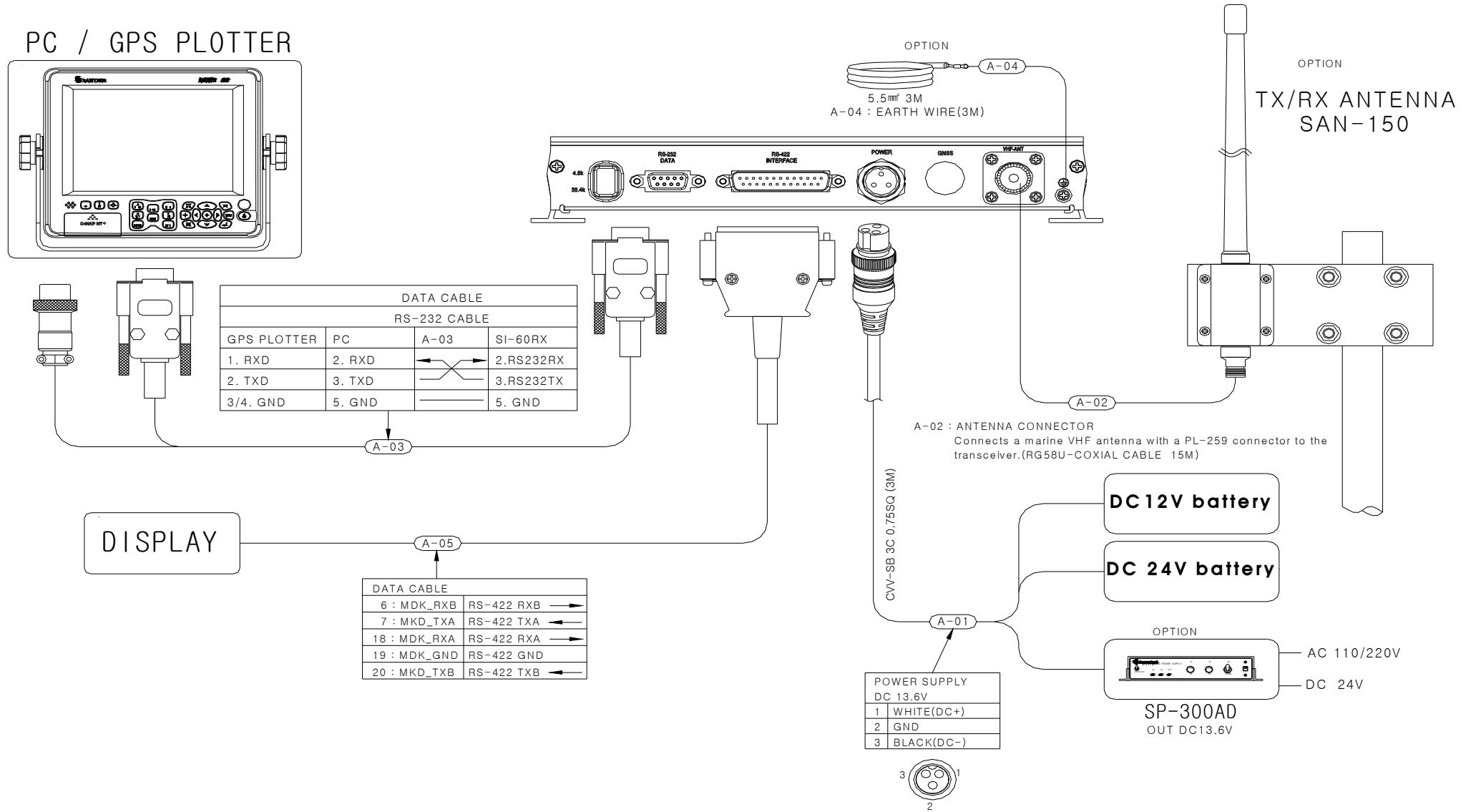
接收频率	156.025 MHz-162.025 MHz 接收机 1. 默认 CH is 88B, AIS (162.025 MHz) 接收机 2. 默认 CH is 87B, AIS (161.975 MHz)
带宽	25KHz
通信方式	单工和半双工
Antenna Impedance	50Ω(SO-239)
频率稳定范围	±10 PPM(-20℃ to +60℃)
Baud rate	38400Baud(38.4Kb)/4800 Baud
Format	ITU/NMEA 0183
工作电压	DC 12V/24V
工作电流(13.6V)	Maximum 0.4A MAX (D 12V)
工作温度	-15℃ ~ +55℃
尺寸	235(w) x 122.8(H) x 41(D)
重量	1Kg

## 设备说明



LED	功 能	其它
 POWER	-指示设备电源已接通	红色 LED
 RX-A	-指示接收机A接收AIS信号	绿色 LED
 RX-B	-指示接收机B接收AIS信号	绿色 LED
 GPS	-指示接受GPS数据	黄色 LED
 ERROR	-指示在数据频道发生错误 -指示接收的数据量过多 -指示在Modem IC发生错误	红色 LED

# 安装方法





## 通信速度设置

设置数据速度（RS-232,422）时，按主机后面的开关可以选择4.8K/38.4K。

## NAVIS-PLOTTER 设置(800,800S,/F/FS,2500,2500S,3000,3700,5100)

### □ 外部数据设置

- 跟其他设备互换信息的功能

[MENU] → [3.系统] → [4.系统设置] → [2.输出口设定] → 选择有互换性的NMEA → 选择速度(bps) → 选择时间间隔(秒)

### □ AIS信息显示设置

- 从安装AIS的船舶接收信息，在NAVIS屏幕上显示AIS信息的功能。

[MENU] → [3.系统] → [4.系统设置] → [3.AIS SET] → [1.RUN / STOP SET] (按钮的时，能反复选择[RUN/STOP])

## NAVIS-PLOTTER 设置(3700 C-MAP 用)

### □ 外部数据设置

- 跟其他设备互换信息的功能

[MENU] → [4.UNIT] → [7.DATA FORMAT <IN/OUT>] → [IN/OUT] (按“切换”钮的时，能反复选择[RUN /STOP])


### □ AIS信息显示设置

- 从安装AIS的船舶接收信息，在NAVIS屏幕上显示AIS信息的功能。


[MENU] → [4.UNIT] → [7.DATA FOMMAT<IN/OUT>] → [IN/OUT] → [5. RCV-3 800] → [1.4800 / 4.38400] 选择通信速度 → 设置AIS信息显示

## AIS 标记描述

本机显示4种标记，每个标记的意思如下：

(1) ：停航的船舶标记。

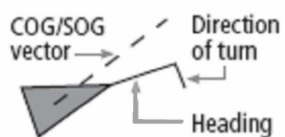
(2) ：航海的船舶标记。

(3) ：选择某个船舶时显示的标记。

(4) ：危险船舶标记。

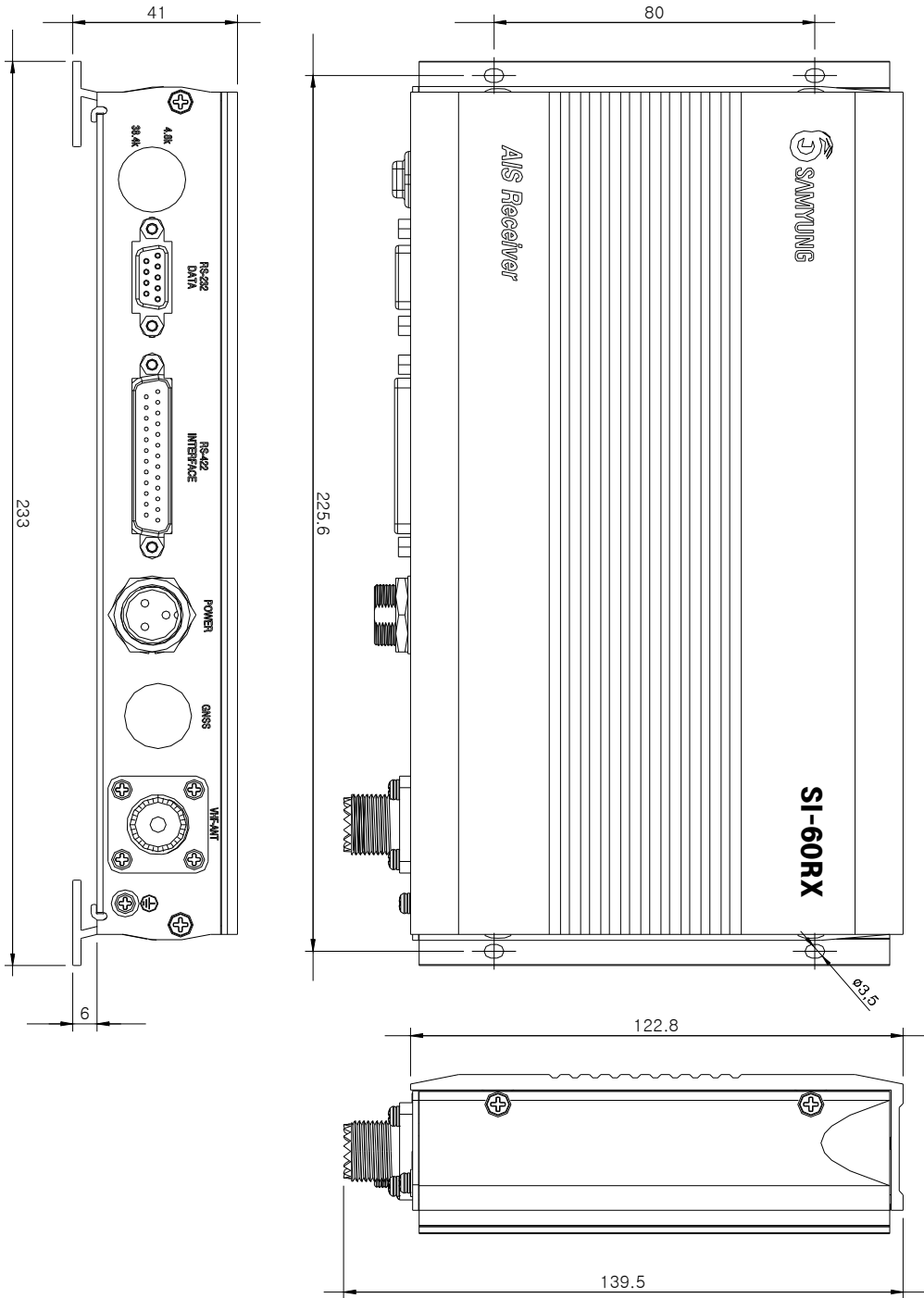
(5) ：停止发射AIS信息的船舶标记。

- 每个标记表示如下



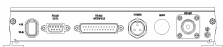
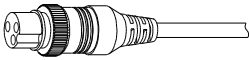
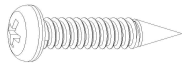
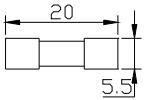


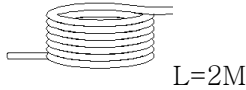
- COG/SOG：对地航向，对地速度。
- Heading：船首。
- Direction of turn：船舶回转的方向。


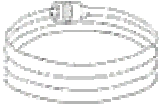
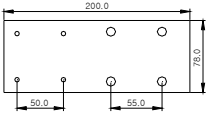

# SI-60RX DIAGRAM



SI-60RX STANDARD COMPONENT (DOMESTIC)							
NO	ITEM	DIAGRAM	SIZE & CODE		Q'TY	CHECK	REMARK
1	MAIN UNIT		SI-60RX		1		
			CODE NO.	SI-301			
2	DC POWER CABLE		CVV-SB 3C 0.75SQ		1	A-01	3 M
			CODE NO.	SNX-302			
3	SCREW		Ø3 X 16		4		
			CODE NO.	SGP-330-2			
4	FUSE		2A(20mm)		1		
			CODE NO.	ACC-FUSE-001			
5	SERIAL CONNECTOR		D-SUB HOOD 9P		1	A-03	HDEB-9S
			CODE NO.				
6	SERIAL CONNECTOR		D-SUB HOOD 25P		1	A-05	HDBB-25S
			CODE NO.				
7	DATA CABLE		2464 SHIELD CABLE 6C X 24AWG		1		
			CODE NO.				
8	ANTENNA		SAN-150		1		
			CODE NO.	STR-585			
9	VHF ANTENNA CABLE		RG-8U		1	A-02	PL-259 x 2
			CODE NO.	STR-586			
10	ANT BRACKET		78 X 200		1		
			CODE NO.	STR-586			
11	U-VOLT		Ø63 X 80mm		2		
			CODE NO.	STR-601			
			CODE NO.	SGP-330-3			
12	MANUAL		SI-60RX		1		
			CODE NO.	SI-304			

**SI-60RX STANDARD(OVERSEAS)**

NO.	ITEM	DIAGRAM	SPECIFICATION	Q'TY	CHECK	REMARK	
1	MAIN UNIT		SI-60RX		1		
			CODE NO.	SI-301			
2	DC POWER CABLE		CVV-SB 3C 0.75SQ		1	A-01	3 M
			CODE NO.	SNX-302			
3	SCREW		Ø3 X 16		4		
			CODE NO.	SGP-330-2			
4	FUSE		2A(20mm)		1		SPARE PARTS
			CODE NO.	ACC-FUSE-001			
5	SERIAL CONNECTOR		D-SUB HOOD 9P		1	A-03	HDEB-9S INCLUDED
			CODE NO.				
6	SERIAL CONNECTOR		D-SUB HOOD 25P		1	A-05	HDBB-25S INCLUDED
			CODE NO.				
7	DATA CABLE		2464 SHIELD CABLE 6C X 24AWG		1		
			CODE NO.				
8	MANUAL		SI-60RX		1		
			CODE NO.	SI-304			

SI-60RX OPTIONAL (OVERSEAS)							
NO	ITEM	DIAGRAM	SPECIFICATION		Q'TY	CHECK	REMARK
1	ANTENNA		SAN-150		1		
			CODE NO.	STR-585			
2	VHF ANTENNA CABLE	 L=15m	RG-8U		1	A-02	PL-259 x 2
			CODE NO.	STR-586			
3	ANT BRACKET		78 X 200		1		
			CODE NO.	STR-599			
4	U-BOLT		Ø63 X 80mm		2		
			CODE NO.	STR-601			
			CODE NO	SGP-330-3			