KS200+ series Quick Installation Manual

This manual is applied to KS200A+, KS200A+_SART, KS200B+ and KS200B+_N

Please make sure that the following items are in your package:

1. Main unit (KS200A+, KS200B+, KS200B+_N or KS200A+_SART)

2. Power/Data cable

Introduction

The KS200 series products feature abundant interfaces, enabling connection with various marine navigation equipment and stable data transmission. They accurately process AIS data and utilize the NMEA2000 network and WIFI function to efficiently transmit data, providing precise navigation and dynamic monitoring for ships, effectively enhancing navigation safety. The multiple models of the KS200 series are suitable for different requirements, helping you calmly deal with various challenges during the voyage.

Differences among the four models

The KS200 series includes four different models, each with its own characteristics:

KS200A+: It can receive and transmit AIS signals and has comprehensive functions. It is suitable for marine scenarios with high requirements for navigation positioning and ship communication.

KS200A+_SART: In addition to having the functions of the KS200A+, it is equipped with an SART emergency alarm button, which can quickly send out a distress signal in an emergency.

KS200B+: It can only receive AIS signals and is used for data transmission and obtaining the movements of surrounding ships.

KS200B+_N: Based on the KS200B+, it adds an Ethernet interface, providing more possibilities for data transmission and network connection.

Each model has N2K communication function and wifi transmission function.

Interconnection diagram
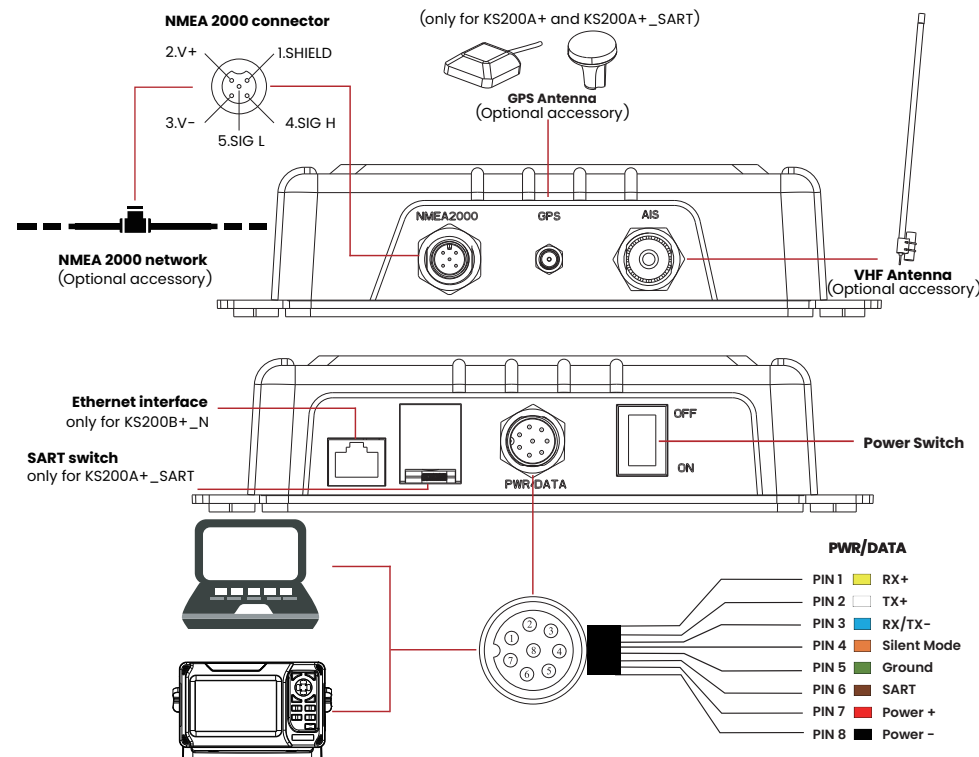
Data transmission mode

1. Output to navigation devices

There are three ways to output data from the KS200 to navigation devices: connecting via the power/data cable, integrating into the NMEA2000 network, and establishing a WiFi connection (via a TCP port).

-Power/data cable connection

According to the PWR/DATA interface shown in the figure above, connect the TX + (Pin 2, white wire) and TX - (Pin 3, blue wire) of the Automatic Identification System (AIS) data output to the AIS input of your navigational equipment. AIS output data:

The output baudrate is 38,400 (38.4K) with 8 data bits, one stop bit and no parity.The data

interface conforms to IEC61162-1.The sent messages are conformed to NMEA0183 V3.01:

For KS200A+ and KS200A+_SART: VDM, VDO, RMC, GSV, GGA and GSA

For KS200B+ and KS200B+_N: VDM and VDO

−NMEA 2000 connection

After the KS200+ series products are connected to the NMEA2000 network, the devices in the network can receive the NMEA 2000 data output by the KS200+ device.Output PGN:

GNSS: 126992, 129026, 129540, 129033, 129029, 129025, 129539

AIS: 129810, 129809, 129798, 129040, 129039, 129038, 129041, 129802, 129801, 129794, 129795, 129797, 129793, 129811, 129812

−WIFI connection

Connect to the KS200+ series hotspot with the password. Then connect via TCP on port 10110.

2. Output to PC

Connect the wires of power/data cable to PC as below:

KS200A+/B+	9 - pin serial port of the computer
Pin2, White-TX+	2 - Receive data
Pin1, Yellow-RX+	3 - Send data
Pin 3, Blue-RX-/TX-	5 - GND

Use of silent and SART functions

silent mode: Silent mode can be achieved by setting "TX OFF" on the web page or connecting the corresponding wire (Pin 4 - silent mode) to the ground (Pin 5, green wire).

SART: If you want to use the Search and Rescue Transponder (SART) function, please connect the corresponding wire (Pin 6 - SART) to the ground (Pin 5, green wire).

Configuration

Applicable Devices: KS200A+ and KS200A+_SART and KS200B+ and KS200B+_N.

Preparations before use: It is necessary to program the MMSI, vessel name, and vessel type. The following are the configuration methods.

PC-side Configuration Tool (Only for AIS Part Configuration)

Download the programming software and instructions from http://www.onwamarine.com.

Webpage-side Configuration: Can Configure AIS and Hotspot Wi-Fi

Ensure that the device is powered on, connect to the corresponding Wi-Fi network with a computer, enter http://192.168.4.1 in the browser address bar to access the configuration page. For details, please refer to the full manual.

Setup Instructions for Use with KS33NT :

Applicable Devices: KS200A+, KS200A+_SART, KS200B+ and KS200B+_N

Configuration Purpose: When used in conjunction with the ONWA tracking device KS33NT（When using the ONWA encryption protocol）, it is used to decode the ONWA encrypted messages sent by KS33NT. For details, please contact info@onwamarine.com.

Specification

Physical
- Dimension:
  200mm(l) x 138.7mm(w) x 45.8mm(h)
- Weight: 0.45Kg

Power
- Input: 11 - 30VDC
- Power consumption: 0.20A nominal

Electrical Interface:
- RS232 38,400 baudrate bi-directional

Environment
- IEC 60945 (Cat C)
- Operating Temperature: -25ºC to +60ºC

WIFI
- Mode: Hotspot (default) or WIFI terminal
- User name: KS200xx_ESP32_xxxxxxxx
- Password: 12345678(default)
- IP: 192.168.4.1

For KS200A+ and KS200A+_SART :
GPS Receiver (AIS Internal)
  - IEC 61108-1 compliant
Connectors
  - VHF Antenna connector PL259 female
  - GPS Antenna connector SMA female
  - NMEA 2000 Interface

VHF Transceiver
- Frequency:
  - 161.975 MHz (AIS Channel 1: CH87B)
  - 162.025 MHz (AIS Channel 2: CH88B)
- Transmitter x 1
- Receiver x 2
- Output Power: 5W
- Channel bandwidth: 25KHz
- Modulation modes: GMSK
- Bit rate 9600 b/s GMSK
- Rx Sensitivity：<-112dBm @20% PER

For KS200B+ and KS200B+_N :
Connectors
  - VHF Antenna connector Pl259 female
  - NMEA 2000 Interface
VHF Receiver
- Frequency:
  - 161.975 MHz (AIS Channel 1: CH87B)
  - 162.025 MHz (AIS Channel 2: CH88B)
- Receiver x 2
- Channel bandwidth: 25KHz
- Rx Sensitivity：<-112dBm @20% PER

For more detail please download the full manual from http://www.onwamarine.com

All specifications are subject to change without further notice!

Please consider the environment before printing the manual