3. The configuration tool can also be used to view the real time status of the boat. Please note, some computers without dedicated GPU (Graphics Processing Unit) can't support this function.

The AS08 is suitable not just for the marine market but for anyone wanting real-time information regarding heading, rate of turn, pitch and roll of an aircraft, vessel or vehicle. With the configuration tool you can choose the module as vessel, aircraft or vehicle.

3. DATA OUTPUT PROTOCOLS

	NMEA 0183 output
Wire connection	4 wires: 12V, GND, NMEA Out+, NMEA Out-
Signal type	RS-422
Supported messages	$IIHDG - Heading with deviation & variation. $IIHDM - Heading magnetic. $IIROT – Rate of turn(°/minute), '-' indicates bow turns to port. $IIXDR – Transducer measurements: Vessel attitude (pitch and roll). *XDR message example: $IIXDR,A,15.5,D,ROLL,A,11.3,D,PITCH,*3B where 'A' indicates transducer type, 'A' is for angle transducer. '15.5' is the roll value, '-' indicates roll to port. 'D' indicates the unit of measurement, degree. ROLL is the name of transducer and the data type. 'A' indicates transducer type, 'A' is for angle transducer. '11.3' is the pitch value, '-' indicates bow is below level horizon. 'D' indicates the unit of measurement, degree. PITCH is the name of transducer and the data type. *3B is the check sum.

BEFORE LEAVING HOME:

We recommend pre-installing the configuration software or drivers if needed, as you might not have a CD reader/internet access on site.

QUARK-ELEC

SET-UP GUIDE

QK-AS08
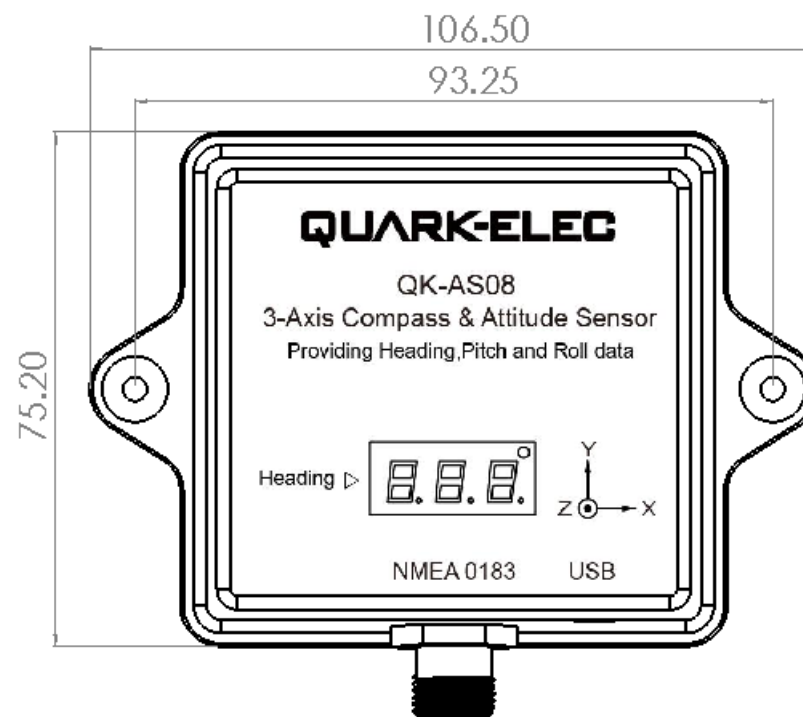
3-AXIS COMPASS & ATTITUDE SENSOR

PROVIDING HEADING, PITCH & ROLL DATA
NMEA 0183 & USB OUTPUT
SUPER ELECTRONMAGNETIC COMPATIBILITY
RELIABLE AND PRECISE ATTITUDE INFORMATION

Please recycle your packaging

CE, RoHS certified
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⚠️ **This is an overview only. Always familiarize yourself with the product manual and the manuals of any connecting devices before installation. Designed to be connected by an experienced installer.**

1. INSTALLATION:

The AS08 connects directly to your 12V power and NMEA 0183 device. No other connections or configuration is generally required.

1.1 Location:

AS08 is designed to be securely positioned in an indoor environment. The AS08 should be mounted to a dry, sturdy, horizontal surface. The cable can be routed either through the side of the sensor housing, or through the mounting surface under the sensor.

For best performance, mount the AS08:

• **As close to the vehicle/boat's centre of gravity as possible.**
• **To accommodate the maximum pitch and roll motions, mount the sensor as near to horizontal as possible.**
• **Avoid mounting the sensor high above the water line because doing so also increases pitch and roll acceleration**
• **AS08 does not require a clear view of the sky.**

⚠️ • **Do NOT install near ferrous metals** or anything that can create a magnetic field such as: magnetized materials, electric motors, electronic equipment, engines, generators, power/ignition cables, and batteries.

1.2 Wiring:

The AS08 is designed to be used out of the box, for instant heading, rate of turn, pitch and roll data to other NMEA 0183 devices. The default baud rate has been set as 4800bps, at 1Hz updating frequency. If needed, the user can use the configuration tool to setup NMEA 0183 output baud rate, data frequency, or disable unnecessary messages.

The AS08 sensor has the following connections.
• **NMEA 0183 port and power**. A four-core M12 connector can be connected with the provided 2 meter cable. This can be connected to the NMEA 0183 listeners and the power supply. The user can use the configuration tool to setup NMEA 0183 output data type, baud rate and data frequency.

Wire	Function
Red	12V POWER
Black	GND
Green	NMEA OUTPUT +
Yellow	NMEA OUTPUT -

1.3 Connecting to NMEA 0183 (RS422) devices:

The AS08 sends heading, rate of turn, pitch and roll sentences, in the NMEA 0183-RS422 (differential) protocol.
For RS422 interface devices , these wires need to be connected.

	QK-AS08 wire	Connection needed on RS422 device
NMEA 0183	NMEA output+	NMEA Input+ *[1]
	NMEA output-	NMEA Input-
POWER	Black: GND	GND (for Power)
	Red: Power	12v—14.4v Power

*[1] Swap NMEA input + and NMEA input – wires if the AS08 does not work.
Ensure you check the above table and your device's documentation carefully before connection.

1.4 Connecting to NMEA 0183 (RS232) devices:

Although AS08 sends out NMEA 0183 sentences via differential end RS422 interface, it also supports single end for RS232 interface devices, these wires need to be connected

	QK-AS08 wire	Connection needed on RS232 device
NMEA 0183	NMEA output+	GND *[2]
	NMEA output-	NMEA Input
POWER	Black: GND	GND (for Power)
	Red: Power	12v—14.4v Power

*[2] Swap NMEA input and GND wires if the AS08 does not work.

• **USB port**. The AS08 is supplied with a type C USB connector. The USB cable can be linked directly to a USB port on a PC, supporting data output. The USB port is also used to configure the AS08 and to calibrate (we only provide the calibration function to authorised distributors).

2. USING THE OPTIONAL USB OUTPUT

AS08 can be connected via USB to a Windows PC for:

1. Accessing heading, rate of turn, pitch and roll data on a PC (NMEA 0183 format). To do this, the 3D model should be set as 'None' and the baud rate on the PC should be 115200bps.
2. Configuring additional settings (using Windows configuration tool)

    a. Filtering of NMEA 0183 output sentences, to eliminate unwanted data.

    b. Adjusting heading data output frequency. The frequency of heading data transfer can be set to 1/2/5/10 per second. 1Hz is the default setting and is generally recommended. Please note: changing the setting to 10Hz may cause data overflow in some devices.

    c. Adjusting the baud rate for NMEA 0183 output.

    d. Adjusting the brightness level of the LED on the panel. It can be set to be day or night mode or off.