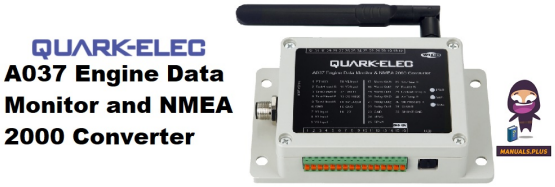


QUARK-ELEC A037 Engine Data Monitor and NMEA 2000 Converter User Guide

Contents

QUARK-ELEC

QUARK-ELEC A037 Engine Data Monitor and NMEA 2000 Converter

Product Specifications

- **Model:** QK-A037
- **LED Indicator:** Power, WiFi, Data
- **Functions:** Engine Data Monitoring, NMEA 2000 Converter
- **Features:** Analogue Signal Conversion, Tank Level Observation, RPM Tracking, etc.

Product Usage Instructions

Connection Overview:

- The A037 setup involves connecting sensors for engine data monitoring and NMEA 2000 conversion.
- Ensure all connections are made correctly for proper functionality.

Set-Up Guide:

The A037 is designed for various monitoring tasks including engine data monitoring, tank level observation, pressure, temperature, and humidity measurement, etc. Follow the manual for detailed setup instructions.

Disclaimer:

- Use the product as a navigation aid to enhance normal procedures. The user is responsible for prudent use.
- Manufacturers and distributors are not liable for any accidents or damages arising from product use.

Installation:

1. Choose a flat mounting location to prevent device casing fatigue.
2. Mount the A037 between the NMEA 2000 bus and senders/gauges.

3. Compatible with both analogue gauges and standalone use.
4. If any pinout is unused, leave it open and unconnected.

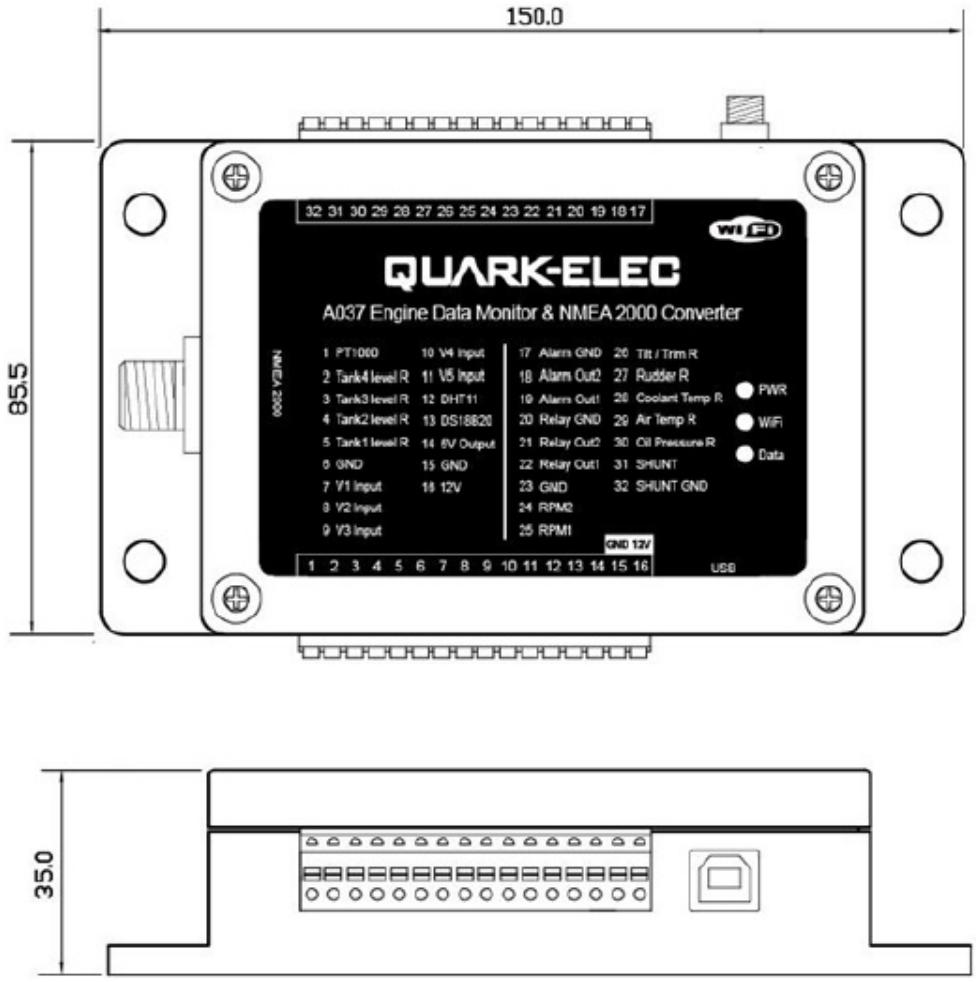
FAQ

- **Q:** What do the LED indicators on the A037 signify?
  - **A:** The LEDs indicate power status, WiFi activity, and data output to the NMEA 2000 bus.
- **Q:** Can the A037 be used for engine speed monitoring?
  - **A:** Yes, the A037 can track RPM for engine speed monitoring.
- **Q:** Is the A037 suitable for marine applications?
  - **A:** The A037 is suitable for light commercial, leisure, fishing boats, and vessel monitoring markets. Take precautions to avoid exposure to seawater and dust.

FEATURES

- Enable Analogue Signal Conversion to NMEA 2000 Messages
- Engine Data Monitoring and Tank Level Observation
- Pressure, Temperature, and Humidity Measurement
- Tilt/Trim and Rudder Position Observation
- RPM Tracking for Engine Speed
- Alarm Status Observation
- Battery Status Check

DIMENSIONS



Warning

- This is an overview only. Familiarize yourself with the manual and the manuals of any connecting devices before installation.
- It is always recommended that electronic equipment be installed by an experienced installer.

Before you start

It is highly recommended that all the installation instructions are read before com-mencing the installation. There are important warnings and notes throughout the manual that should be con-sidered before installation is attempted. Incorrect installation may invalidate the war-ranty. The latest manual can be found from the website.

The A037 was meticulously engineered for application in light commercial, leisure and fishing boat and vessel monitoring markets. Although the A037 comes with conformal coating on the circuit board, the pinouts are open so seawater and dust has the potential to cause a short circuit. It should be securely fitted, avoiding direct exposure to water and areas where salt and dust may come into contact.

The following installation points should be checked before commencing the installation

- Correct length of cables. Ensure a suitable length of cable is chosen. If drilling holes for your cabling, seal around any holes to prevent damage to your vessel or equipment.
- Cable disconnection. Do not mount the A037 while the device is powered and disconnect any sensors, cables or NMEA 2000 drop cables before installation.
- Avoid electronic compass interference. Maintain a minimum distance of 0.5 meters from any electronic

compass (such as Quark-elec AS08) and ensure that the connection cable re-mains separate from it.
- Avoid proximity to antenna cables. While there is no specific minimum distance requirement between the A037's connection cable and VHF or other antenna cables, it is advisable to maintain separation. Do not bundle them together in a single cowling.
- Minimizing wire noise. Avoid running noisy wires (such as those connected to ignition coils) adjacent to sensitive gauge or alarm wires as noise may be induced into these wires and this may result in inaccurate measurements.
- Consider all connection cables. All connections need to be considered and prepared before selecting a proper installation location.

Installation

1. Select a flat location to mount the A037. Avoid mounting on uneven or contoured surfaces, as this could potentially fatigue the device casing.
2. Ensure that the A037 is mounted in a suitable location appropriately between the NMEA 2000 bus and the senders or gauges.
3. The A037 is compatible with both existing analogue gauges and standalone use.
4. If any pinout is not being used, leave it open and unconnected.

Connections

The A037 Engine Data Monitor & NMEA 2000 Converter has the following options for connection to inputs, outputs, and host devices.

Sensor inputs:

- PT1000/PT100 input. RTD (Resistance Temperature Detector) measures temperature.
- DS18B20 Input. Digital temperature sensor.
- DHT11 Input. Digital sensor, outputting temperature and humidity data.
- 4x Tank level inputs. Resistive liquid tank level sensors to monitor the level of tanks.
- 5x Voltage inputs. Most common sensor and gauges input, measuring parameters such as oil pressure, engine rotation rate, battery voltage, temperature and more.
- 2x RPM inputs. Compatible with ignition coil, alternator output, or electronics pulse senders.
- Tilt/ Trim input. Converting analogue data provided by engine-tilt sensor.
- Rudder position input. Resistance rudder position indicator/sensor.
- Coolant Temp input. Resistance temperature sensor for coolant.
- Air Temp input. Resistance temperature sensor which could be used for ambient temperature.
- Oil Temp input. Resistance temperature sensor for oil.
- Shunt input (battery status) input. Measure circuit current to provide battery status data.

Warning

- All sensor inputs operate independently and do not interfere with one another. If you are unsure on how to connect or use a specific input, you can leave it disconnected and start with the ones you are familiar with. You

can always come back later to learn about and add the new connections.
- For detailed instructions on connecting, setting up, configuration and calibrating each type of sensor to ensure proper functionality, please refer to the A037 manual via the QR code found on the set up guides front page.

Alarm & Relay Output

- Alarm and relay outputs can be used to trigger warning devices, e.g. light, buzzer, alarm.

Communication Ports

- WiFi Port. Output NMEA 2000 data (PCDIN format) via WiFi for investigation or recording.
- USB Port. Type-B USB connector for configuration and firmware upgrades. Please note, the converted sensor data is not transmitted via the USB port.
- NMEA 2000 Port. The A037 reads all available sensor data, converts the received data to NMEA 2000 PGNs, and outputs these PGNs to the NMEA 2000 network. This allows the data to be easily read and displayed by other devices such as chart plotters, MFDs and instrument displays on the NMEA 2000 network.

Power

- The A037 operates on 12V DC power source. Power (Pinout 16) and GND (Pinout 15) are clearly indicated. It is imperative to switch off the input power during the installation.
- The A037 transforms analogue data from the engine into digital format through an advanced Analogue-to-Digital Converter (ADC). The accuracy and reliability of this conversion process are contingent upon a stable and low-noise power supply.

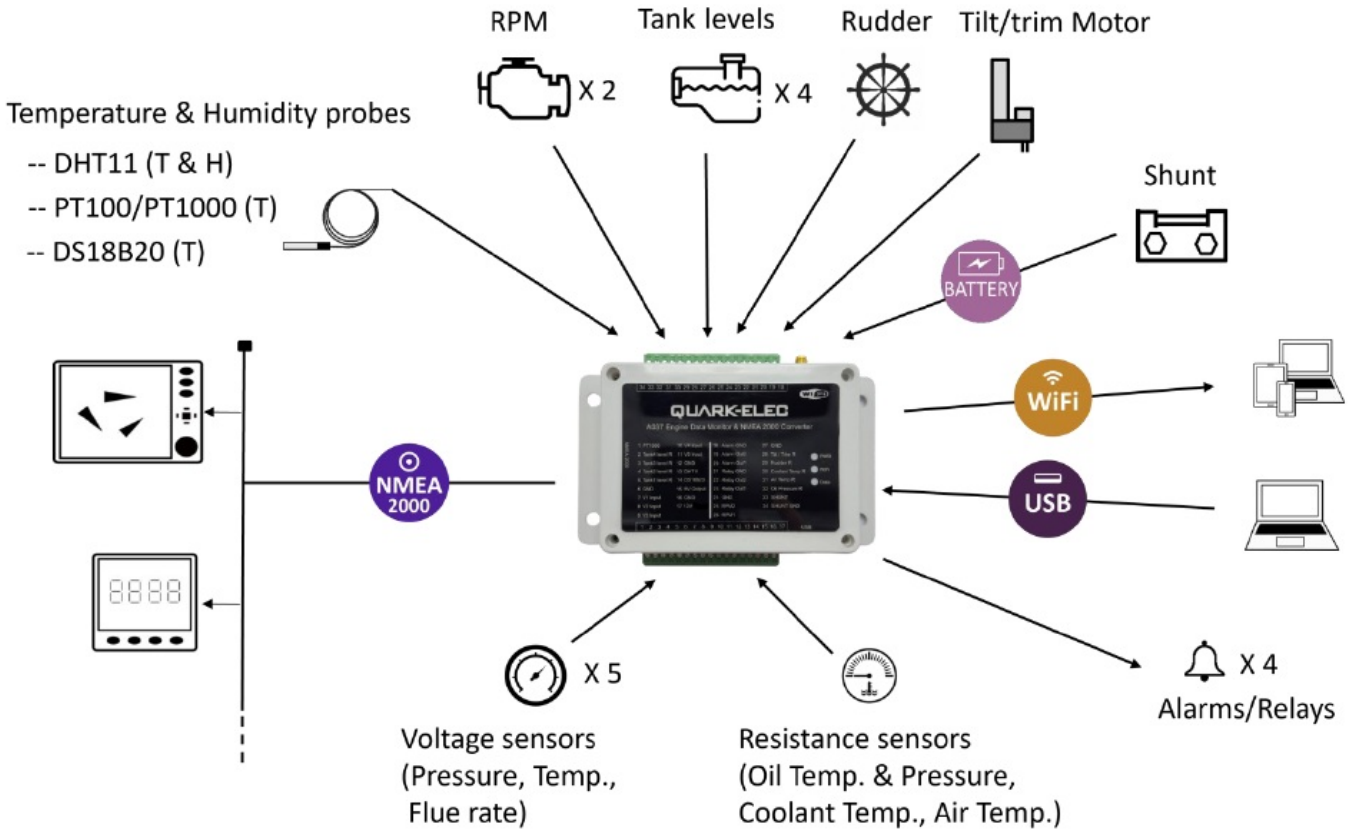
LED Indicator

The A037 is equipped with three LEDs that indicate power, WiFi and Data status respectively.
The status LEDs on the panel provide information about port activity and system status:

- **Data:** This LED flashes when any data is output to the NMEA 2000 bus.
- **WiFi:** The LED flashes for each valid NMEA message sent to the WiFi output.

Connection Overview

The following is an example of an A037 setup. This gives an idea of the connections that need to be made to install A037. All these connections must be taken into consideration when locating a suitable mounting location for the A037.
All sensor inputs operate independently and do not interfere with one another. Simply connect the sensors you need and leave the others unconnected.



More Information

Disclaimer: This product is designed to aid navigation and should be used to augment normal navigational procedures and practices. It is the user's responsibility to use this product prudently. Neither Quark-elec, nor their distributors or dealers accept responsibility or liability either to the product user or their estate for any accident, loss, injury or damage whatsoever arising out of the use or of liability to use this product.

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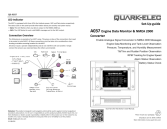
Documents / Resources

	**QUARK-ELEC A037 Engine Data Monitor and NMEA 2000 Converter** [pdf] User Guide QK-A037, A037 Engine Data Monitor and NMEA 2000 Converter, A037, Engine Data Monitor and NMEA 2000 Converter, Data Monitor and NMEA 2000 Converter, Monitor and NMEA 2000 Converter, NMEA 2000 Converter, 2000 Converter, Converter

References

- **User Manual**