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Yacht Devices YDOG-01N

Yacht Devices Boat Outboard Gateway (YDOG-01N) User Manual

Model: YDOG-01N | Brand: Yacht Devices

1. Introduction and Overview

The Yacht Devices Boat Outboard Gateway (YDOG-01N) is an essential device designed to integrate petrol engines without digital interfaces into a NMEA 2000 marine network. This gateway efficiently translates analog engine signals into digital NMEA 2000 data, providing crucial information such as engine revolutions per minute (RPM), alternator voltage (measured at the NMEA 2000 interface), and total engine hours.

Its compact design allows for flexible installation, even within the engine compartment, making it a seamless addition to your vessel's electronic system. The YDOG-01N enhances situational awareness by making vital engine data accessible on any NMEA 2000 compatible display.



Figure 1: The Yacht Devices YDOG-01N Outboard Gateway. This image shows the compact black cylindrical device with its NMEA 2000 Micro Male connector and attached wiring. The device label is visible, indicating "Yacht Devices Outboard Gateway" and "MODEL: YDOG-01N".

2. Key Features

- **NMEA 2000 Integration:** Provides engine RPM, alternator voltage, and engine hours to your NMEA 2000 network.
- **Wide Pulse Counting Range:** Supports pulse counting from 200 to 70,000 pulses per minute, accommodating various engine types.
- **Compact Design:** Device case length is only 40mm, allowing for installation even inside the engine compartment.
- **Flexible Configuration:** Can be configured using a hidden button on the device or via NMEA 2000 gateways.
- **Firmware Updatable:** Firmware can be updated using Yacht Devices NMEA 2000 gateways, ensuring compatibility and new features.
- **Diagnostic Software:** Free diagnostic software available for Windows, Mac OS, and Linux, enabling real-time oscillogram viewing for advanced diagnostics.

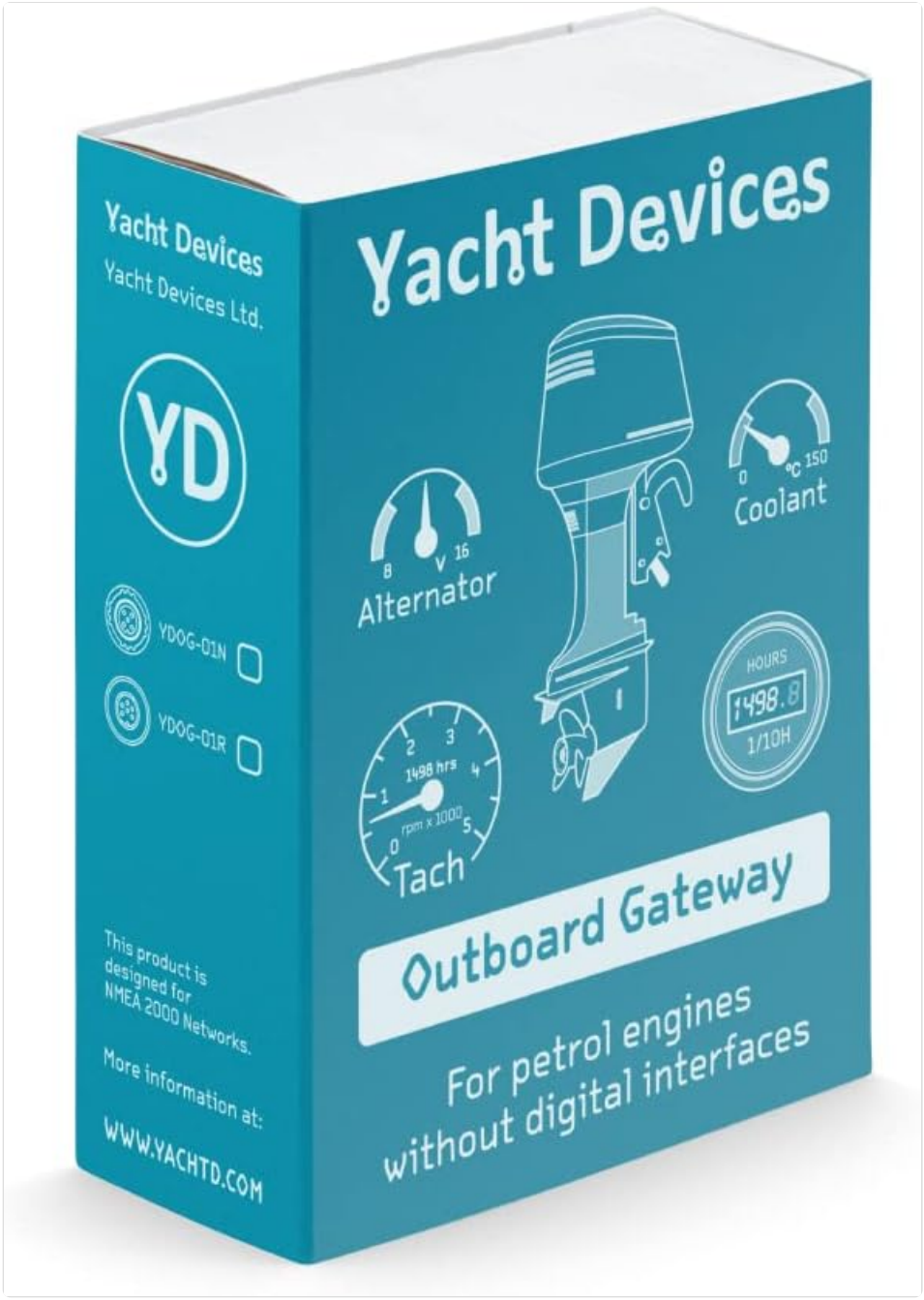


Figure 2: Product packaging for the Yacht Devices Outboard Gateway. The box features illustrations of an outboard engine, an alternator gauge, a coolant temperature gauge, and a tachometer, highlighting the data the gateway provides.

3. Setup and Installation

Proper installation is crucial for the accurate operation of the YDOG-01N. Ensure the engine is turned off and the battery is disconnected before beginning installation.

3.1. Physical Installation

1. **Mounting Location:** Due to its compact size (40mm length), the YDOG-01N can be placed inside the engine compartment. Choose a location that is dry, protected from excessive heat, and away from direct vibration.
2. **NMEA 2000 Connection:** Connect the YDOG-01N's NMEA 2000 Micro Male connector to an available NMEA 2000 T-connector on your vessel's backbone network. Ensure a secure connection.
3. **Engine RPM Signal:** Connect the appropriate wire from the YDOG-01N to the ignition coil's primary circuit (negative terminal) or the tachometer signal wire of your petrol engine. This connection is essential for RPM measurement. Consult your engine's manual for the exact location of the tachometer signal.

4. **Alternator Voltage Signal:** The alternator voltage is measured directly at the NMEA 2000 interface. No separate connection is required for this measurement from the engine side.
5. **Engine Hours:** Engine hours are calculated based on the presence of an RPM signal. The device will accumulate hours whenever the engine is running.

3.2. Configuration

The YDOG-01N can be configured to match your engine's specific pulse-per-revolution ratio. This is critical for accurate RPM readings.

- **Using the Hidden Button:** The device features a hidden button for basic configuration. Refer to the detailed installation description strings provided by Yacht Devices for specific button press sequences to set the pulse ratio.
- **Using NMEA 2000 Gateways:** For advanced configuration and easier setup, it is recommended to use a Yacht Devices NMEA 2000 gateway (e.g., YDNG-03) and the associated PC software. This allows for precise setting of engine parameters and monitoring of raw data.

4. Operating Instructions

Once installed and configured, the YDOG-01N operates automatically, converting analog engine signals into NMEA 2000 data.

4.1. Data Monitoring

- **NMEA 2000 Displays:** Engine RPM, alternator voltage, and accumulated engine hours will be available on any NMEA 2000 compatible multi-function display (MFD) or instrument display connected to your network. Navigate to the engine data pages on your display to view this information.
- **Real-time Diagnostics:** Utilize the free diagnostic software provided by Yacht Devices (compatible with Windows, Mac OS, and Linux). Connect your computer to the NMEA 2000 network via a Yacht Devices NMEA 2000 gateway. The software allows you to view real-time oscillograms of the input signals, which is invaluable for verifying correct installation and troubleshooting.

4.2. Firmware Updates

Yacht Devices periodically releases firmware updates to improve performance, add features, or address compatibility issues. It is recommended to keep your device's firmware up to date.

- To update the firmware, you will need a Yacht Devices NMEA 2000 gateway (e.g., YDNG-03) and the firmware update utility available from the Yacht Devices website.
- Follow the instructions provided with the firmware update utility carefully to ensure a successful update.

5. Maintenance

The YDOG-01N is designed for low maintenance. Regular checks can help ensure its longevity and reliable operation.

- **Visual Inspection:** Periodically inspect the device and its connections for any signs of corrosion, damage, or loose wiring. Ensure the NMEA 2000 connector is securely fastened.
- **Environmental Protection:** Ensure the device remains in a dry environment, protected from direct water exposure and extreme temperatures.
- **Firmware:** Keep the device firmware updated as per Section 4.2.

6. Troubleshooting

If you encounter issues with your YDOG-01N, refer to the following common troubleshooting steps:

- **No Data on NMEA 2000 Display:**
  - Verify the NMEA 2000 network is powered and properly terminated.
  - Check the physical connection of the YDOG-01N to the NMEA 2000 backbone.
  - Ensure the engine is running and providing an RPM signal.
  - Use the diagnostic software to check if the device is receiving an RPM signal.
- **Incorrect RPM Readings:**
  - Confirm the correct pulse-per-revolution ratio is configured for your engine. Reconfigure if necessary using the hidden button or NMEA 2000 gateway software.
  - Check the connection to the ignition coil/tachometer signal for looseness or interference.
  - Use the diagnostic software to analyze the input signal quality.
- **Alternator Voltage Issues:**
  - Ensure the NMEA 2000 network is receiving stable power. The voltage is measured at the network interface.
  - Check the vessel's charging system and battery health.
- **Device Not Responding:**
  - Disconnect and reconnect the device from the NMEA 2000 network to perform a power cycle.
  - If possible, try connecting the device to a different NMEA 2000 T-connector or network segment to rule out network issues.

For persistent issues, consult the Yacht Devices website for updated documentation or contact their technical support.

7. Specifications

Attribute	Value
Model	YDOG-01N
Brand	Yacht Devices
ASIN	B09QT57HY9
Product Dimensions	1.57 x 0.79 x 0.79 inches (40 x 20 x 20 mm)
Item Weight	2.65 ounces
Pulse Counting Range	200 - 70,000 pulses per minute
NMEA 2000 Connector	Micro Male
Manufacturer	Yacht Devices
Date First Available	January 20, 2022

8. Warranty and Support

Specific warranty terms and conditions for the Yacht Devices YDOG-01N are provided by the manufacturer, Yacht

Devices. Please refer to the documentation included with your product or visit the official Yacht Devices website for detailed warranty information and to register your product.

For technical support, troubleshooting assistance beyond this manual, or inquiries about firmware updates and compatible software, please contact Yacht Devices customer support directly through their official channels.

Note: Always ensure you are using official Yacht Devices resources for support and software downloads to guarantee compatibility and security.

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Model number, symptoms, what you tried, or the section of the manual you are using.

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