

NMEA TO STEP CONVERTER

REFERENCE MANUEL

1. INTRODUCTION AND OVERVIEW

The NMEA to STEP Converter Device is an electronic device that processes NMEA 0183 standard data streams and drives synchro motors through 4 analog outputs. This device is designed for use in various applications such as marine equipment, navigation systems, and industrial control systems.

This manual contains all the information required for the installation, operation, and maintenance of the device.

2. TECHNICAL SPECIFICATIONS

Input Protocol: NMEA 0183

Output: 4 Analog(Bearing Repeaters) Outputs

Analog Output Voltage:24-70V DC(Isolated Power Input

Supply Voltage: 10-30V V DC

Operating Temperature: -20 - +85 °C

Dimensions: 225x155x35 mm

Button Controlled Repeater Adjustment

Low and High Voltage of Step Signal

Internal Lamp Output

3. INSTALLATION AND CONNECTIONS

Mounting

1. Mount the device in a dry, vibration-free environment.
2. Ensure adequate ventilation space around the device.
3. Protect the device from direct sunlight and extreme temperatures.

Connections

NMEA 0183 Data Input:Connect the positive(D+) and negative (D-) terminals to the appropriate terminals.(Shielded cable is recommended.)

Power Connection: Connect V+ and V- pins for digital circuit power supply. Connect an additional power source to the isolated R+ and R- pins to get output.It has internal voltage protection and short circuit protection.

Analog Outputs: 4 analog outputs must be properly connected to synchronous motors.(S1-S2-S3-COM)

The lamp pin is used as the lighting pin.

Connect the grounding terminal of the device to a safe ground point(E).



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4. OPERATION

Normal Operating Mode

In normal operating mode, the device automatically processes the NMEA 0183 data stream and drives the synchro motors appropriately. No user intervention is required in this mode.

Test/Synchronization Mode

The Test/Synchronization mode is used to check if the system is working correctly and to make manual adjustments when necessary.

Activating Test/Synchronization Mode:

Set the DIP switch on the device to the ON position. LED3 will light up and the Test/Sync mode will start.

Functions in Test/Synchronization Mode:

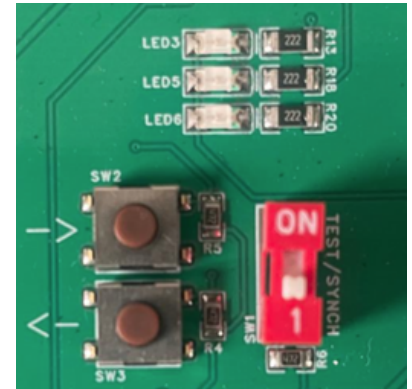
Button 1: When this button is pressed, the motor will rotate in one direction.

Button 2: When this button is pressed, the motor will rotate in the opposite direction.

Button 1 + Button 2: When both buttons are pressed simultaneously for more than 3 seconds, the motor will continuously rotate 360 degrees in one direction, then 360 degrees in the other direction. This feature is used to test the full range of motion of the motor.

Exiting Test/Synchronization Mode:

Set the DIP switch to the OFF position. The device will return to normal operating mode.



The device can be set to minus and plus with a jumper cap. The outputs will be reversed between these two modes. Please do not energize without making all outputs in one direction, otherwise the circuit, power supply or motor may be damaged.



5. MAINTENANCE AND SERVICE

The device does not require maintenance under normal conditions.

Periodically check connections and ensure there are no loose terminals.

To clean the outer surface of the device, use a dry or slightly damp cloth. Do not use liquid cleaners.