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Model: JY-ME02-CAN

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the EFDBPNYM JY-ME02-CAN High-Precision Absolute Rotary Encoder. This device is designed for accurate digital rotation angle measurement, offering an 18-bit resolution and robust CAN communication capabilities. Please read this manual thoroughly before using the product to ensure proper function and longevity.

2. PRODUCT OVERVIEW

The JY-ME02-CAN is a high-precision absolute rotary encoder capable of measuring rotational angles with exceptional accuracy. It supports a full 0-360 degree range with an angle accuracy of 0.01 degrees. The encoder features CAN communication, allowing for reliable data transmission over distances up to 300 meters. It operates within a voltage range of 5-24V and supports both single-turn and multi-turn applications, with a maximum speed of 1000 BPR (Bits Per Revolution) and a rotating speed of up to 25000 RPM.



Figure 1: EFDBPNYM JY-ME02-CAN High-Precision Absolute Rotary Encoder. This image shows the compact black cylindrical encoder unit with a metal shaft, connected to a black cable with multiple colored wires at the end for electrical connections. Key specifications like CAN communication, 0-360° angle range, 0.01° accuracy, 300m communication distance, and 5-24V voltage are highlighted.

3. SPECIFICATIONS

Feature	Specification
Brand	EFDBPNYM
Model	JY-ME02-CAN
Resolution	18-bit
Angle Range	0-360 degrees
Angle Accuracy	0.01 degrees

Feature	Specification
Communication Interface	CAN
Communication Distance	300 meters
Operating Voltage	5-24V DC
Rotating Speed	Up to 25000 RPM
Speed Support	1000 BPR (Bits Per Revolution)
Working Temperature	-45 to 85 Celsius
Dimensions (approx.)	26 x 15 mm
Item Weight	100 Grams

4. SETUP AND INSTALLATION

Proper installation is crucial for the accurate and reliable operation of the encoder. Follow these general steps:

- Mounting:** Securely mount the encoder to the rotating shaft or mechanism. Ensure the shaft is properly aligned with the encoder's input shaft to prevent stress and premature wear. Use appropriate fasteners and mounting brackets.
- Wiring:** Connect the encoder's cable to your control system. Refer to the wiring diagram (if provided separately or on the product itself) for correct pin assignments. The JY-ME02-CAN uses a CAN communication interface. Ensure proper connection of CAN_H, CAN_L, power supply (VCC), and ground (GND).
- Power Supply:** Provide a stable DC power supply within the specified range of 5-24V. Incorrect voltage can damage the device.
- Communication Setup:** Configure your CAN bus system to communicate with the encoder. This typically involves setting the correct baud rate and CAN ID for the encoder. Consult your CAN bus controller documentation for specific setup procedures.
- Initial Test:** After installation, perform an initial test to verify communication and angle readings. Rotate the encoder shaft manually and observe the output data on your control system.

5. OPERATING INSTRUCTIONS

Once installed and configured, the JY-ME02-CAN encoder operates by continuously providing absolute angular position data via its CAN interface. Your control system will read this data to determine the current rotational angle.

- Data Acquisition:** Implement software in your control system to periodically read the angle data transmitted by the encoder over the CAN bus. The data format and message IDs should be defined in the product's communication protocol documentation (if available).
- Angle Interpretation:** The encoder provides an 18-bit absolute angle value. This value typically represents the full 0-360 degree range. You may need to scale or convert this raw digital value into degrees, radians, or other desired units within your application.
- Multi-turn Functionality:** If using the multi-turn feature, the encoder will track rotations beyond a single 360-degree turn. Ensure your system is configured to correctly interpret the multi-turn data.
- Speed Monitoring:** While the primary function is angle measurement, the rate of change of the angle can be used by your system to calculate rotational speed. The encoder supports speeds up to 25000 RPM.

6. MAINTENANCE

The EFDBPNYM JY-ME02-CAN encoder is designed for long-term, reliable operation with minimal maintenance. However, periodic checks can help ensure optimal performance:

- **Cleaning:** Keep the encoder free from dust, dirt, and debris. Use a soft, dry cloth for cleaning. Avoid using harsh chemicals or abrasive materials.
- **Cable Inspection:** Periodically inspect the connecting cable for any signs of wear, damage, or loose connections. Ensure the cable is not subjected to excessive bending or pulling forces.
- **Mounting Security:** Verify that the encoder remains securely mounted and that all fasteners are tight. Check for any signs of vibration or misalignment.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity ranges to prevent damage to the internal components.

7. TROUBLESHOOTING

If you encounter issues with your JY-ME02-CAN encoder, refer to the following common troubleshooting steps:

- **No Output/Incorrect Readings:**
 - Check power supply: Ensure the encoder is receiving stable power within the 5-24V range.
 - Verify wiring: Confirm all connections (VCC, GND, CAN_H, CAN_L) are correct and secure.
 - Check CAN bus configuration: Ensure the baud rate and CAN ID in your control system match the encoder's settings.
 - Inspect mounting: Ensure the encoder shaft is properly engaged and rotating freely.
- **Intermittent Communication:**
 - Check cable integrity: Look for damaged or loose cables.
 - Verify CAN bus termination: Ensure proper termination resistors are used on the CAN bus, especially over long distances.
 - Check for electrical noise: Ensure the encoder and its cabling are shielded from strong electromagnetic interference.
- **Inaccurate Angle Measurement:**
 - Check for mechanical play: Ensure there is no backlash or slippage between the encoder shaft and the rotating mechanism.
 - Verify mounting alignment: Misalignment can introduce errors.
 - Review software scaling: Confirm that your software correctly converts the raw encoder data to the desired angle units.

If problems persist after attempting these steps, please contact technical support.

8. WARRANTY AND SUPPORT

The EFDBPNYM JY-ME02-CAN High-Precision Absolute Rotary Encoder comes with lifetime technical support. For any technical assistance, troubleshooting beyond this manual, or inquiries regarding product functionality, please contact EFDBPNYM customer service. Please have your product model number (JY-ME02-CAN) and any relevant details about your setup ready when contacting support.

Ask a question about this manual

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