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DMBGRXJF CM-1305

DMBGRXJF CM-1305 Miniature Micro Limit Switch User Manual

Model: CM-1305

1. Product Overview

The DMBGRXJF CM-1305 is a miniature micro limit switch designed for various industrial and electrical applications. This switch is commonly used to detect the presence or absence of an object, limit the travel of a moving part, or count items on a production line. Its compact size and robust design make it suitable for integration into machinery and control systems requiring precise position sensing.
This manual provides essential information for the safe and effective installation, operation, and maintenance of your CM-1305 limit switch.

2. Safety Information

WARNING: Electrical Hazard

- Always disconnect power before installing, wiring, or performing maintenance on the switch.
- Installation and wiring should be performed by qualified personnel in accordance with all local and national electrical codes.
- Ensure the switch's electrical ratings (voltage and current) are compatible with your application to prevent damage or injury.
- Do not operate the switch in environments exceeding its specified temperature or humidity limits.

3. Installation

Proper installation is crucial for the reliable operation of the CM-1305 limit switch. Follow these general guidelines:

3.1 Mounting

The CM-1305 switch features mounting holes for secure attachment. Ensure the mounting surface is stable and free from excessive vibration.

1. Identify the optimal position for the switch where its actuator can be reliably engaged by the target object.
2. Use appropriate fasteners (screws, bolts) that fit the mounting holes and secure the switch firmly. Avoid overtightening.
3. Verify that the actuator has sufficient travel to fully engage and disengage the switch without excessive force or binding.

Figure 1: Front view of the DMBGRXJF CM-1305 Miniature Micro Limit Switch. This image shows the compact black housing with the model number 'CM-1305' printed on it, along with electrical ratings and certification marks. The metal plunger actuator is visible at the top.

3.2 Wiring

Refer to the electrical specifications on the switch body and in the specifications section of this manual. Ensure correct polarity and voltage.

1. Connect the appropriate wires to the switch terminals. Typically, limit switches have Common (C), Normally Open (NO), and Normally Closed (NC) contacts.
2. Use insulated wires of adequate gauge for the current rating.
3. Secure all connections to prevent accidental disconnection or short circuits.
4. After wiring, double-check all connections before restoring power.

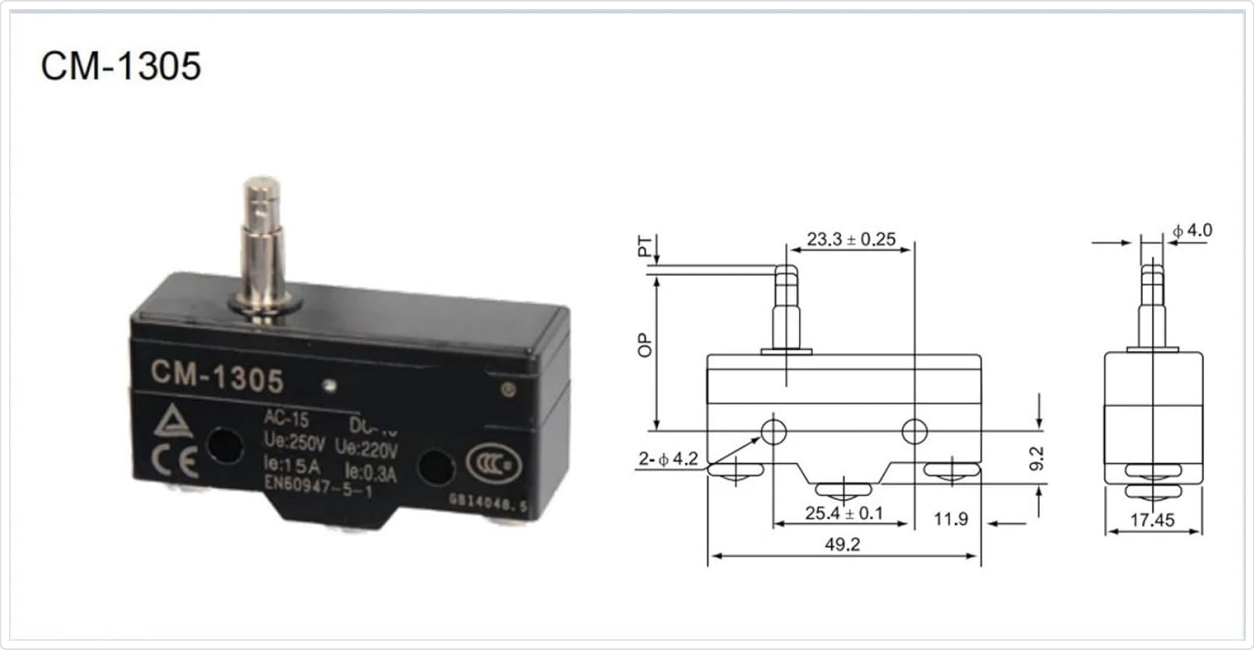

Figure 2: DMBGRXJF CM-1305 Miniature Micro Limit Switch with detailed dimensional drawings. This image displays the switch from a front view, a side view with key measurements in millimeters, and a top-down view, providing essential information for precise mounting and integration.

4. Operation

The CM-1305 is a mechanical limit switch that operates by changing the state of its electrical contacts when its actuator is depressed. When the actuator is engaged by a moving part, the internal contacts switch from their normal state (e.g., Normally Open closes, Normally Closed opens).

- **Actuation:** The switch is actuated when the plunger is depressed by a physical force.
- **Contact Change:** Upon actuation, the internal contacts change state. For example, if connected to the Normally Open (NO) terminal, the circuit will close when the switch is pressed. If connected to the Normally Closed (NC) terminal, the circuit will open when the switch is pressed.
- **Release:** When the force on the plunger is removed, the actuator returns to its original position, and the contacts revert to their normal state.

Ensure the operating speed and frequency of your application are within the specified limits to guarantee reliable performance and longevity of the switch.

5. Maintenance

The CM-1305 limit switch is designed for durability, but regular inspection can help ensure its long-term reliability.

- **Visual Inspection:** Periodically check the switch for any signs of physical damage, corrosion, or loose connections.
- **Actuator Check:** Ensure the actuator moves freely and returns to its original position without sticking. Clean any debris that might impede its movement.
- **Environmental Conditions:** Verify that the operating environment remains within the specified temperature and humidity ranges. Protect the switch from excessive dust, moisture, or corrosive substances.
- **Cleaning:** If necessary, gently clean the exterior of the switch with a dry, soft cloth. Avoid using harsh chemicals or solvents.

6. Troubleshooting

If you encounter issues with your CM-1305 limit switch, consider the following troubleshooting steps:

- **Switch Not Actuating:**
  - Check if the target object is making proper contact with the actuator.
  - Ensure the actuator is not obstructed by debris or misaligned.
  - Verify that the switch is securely mounted and not loose.
- **No Electrical Signal:**
  - Confirm that power is supplied to the circuit.
  - Inspect all wiring connections for looseness or corrosion.
  - Use a multimeter to test for continuity across the switch contacts when actuated and released. Ensure the correct terminals (NO/NC) are being used for your application.
  - Check for any blown fuses or tripped circuit breakers in the control circuit.
- **Intermittent Operation:**
  - Examine the actuator for wear or damage that might cause inconsistent contact.
  - Check for excessive vibration in the mounting area.
  - Ensure the operating speed and frequency are within the switch's specifications.

7. Specifications

The following table details the technical specifications for the DMBGRXJF CM-1305 Miniature Micro Limit Switch:

Characteristic	Value
Model	CM-1305
Rated Current (AC-15)	10A
Rated Voltage (AC-15)	250V
Rated Current (DC-13)	0.3A
Rated Voltage (DC-13)	220V
Operation Speed	0.01mm - 1m/sec
Operating Frequency (Mechanical)	240 operations/min
Operating Frequency (Electrical)	20 operations/min
Contact Resistance	15mΩ max. (initial value)
Insulation Resistance	100MΩ min. (at 500VDC)
Dielectric Strength (between terminals of same polarity)	1000VAC, 50/60 Hz for 1 minute

Characteristic	Value
Dielectric Strength (between current-carrying and noncurrent-carrying metal parts)	1500VAC, 50/60 Hz for 1 minute
Dielectric Strength (between each terminal and ground)	1500VAC, 50/60 Hz for 1 minute
Vibration Resistance	10-55Hz, 1.5mm double amplitude
Shock Resistance (Malfunction)	300m/Sec² (approx. 30G's)
Ambient Temperature (General purpose type)	-25°C to +80°C (no icing)
Ambient Temperature (Sealed type)	-15°C to +80°C (no icing)
Humidity (General purpose type)	85% RH max.
Humidity (Sealed type)	95% RH max.
Life (Mechanical)	20,000,000 operations min.
Life (Electrical)	500,000 operations min.
Package Dimensions	1.18 x 0.79 x 0.39 inches
Weight	1.76 ounces

8. Warranty and Support

For warranty information and technical support regarding your DMBGRXJF CM-1305 Miniature Micro Limit Switch, please contact the seller or manufacturer directly. Retain your proof of purchase for any warranty claims.
For further assistance, refer to the contact information provided at the point of purchase or on the official DMBGRXJF website.

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