uxcell a24062100ux0410

uxcell Round Solenoid Electromagnet DC 24V 500N - Instruction Manual

Model: a24062100ux0410

Introduction

This manual provides essential information for the safe and effective use of the uxcell Round Solenoid Electromagnet. This device is designed for various automation applications requiring controlled magnetic force. Please read this manual thoroughly before installation and operation.

Safety Information

- Ensure the input voltage matches the specified 24V DC. Incorrect voltage can damage the device and pose a safety risk.
- Do not exceed the rated peak force or suction capacity.
- Keep the electromagnet away from sensitive electronic devices, magnetic storage media, and medical implants (e.g., pacemakers) when powered.
- Handle with care to avoid physical damage to the electromagnet or its wiring.
- Ensure proper electrical connections are made to prevent short circuits or electrical hazards.
- The electromagnet can generate heat during continuous operation. Avoid direct contact with the surface during and immediately after use.

Product Overview

The uxcell Round Solenoid Electromagnet is a robust device featuring a polished, smooth surface for wide adsorption and strong suction. It is designed to withstand temperatures up to 155°C, offering strong insulation and reliable performance. Its fully enclosed structure provides good sealing, making it waterproof and oil-proof, ensuring durability in various environments.



Figure 1: uxcell Round Solenoid Electromagnet showing its overall dimensions and lead length.



Figure 2: Close-up view highlighting the high-quality pure iron material and construction of the electromagnet.

Specifications



Figure 3: Visual representation of key specifications for the uxcell Round Solenoid Electromagnet.

Parameter	Value
Material	Pure Iron
Input Voltage	24V DC
Peak Force	500N (approximately 110 lbs)
Suction Capacity	50kg (approximately 110 lbs)
Overall Size (Diameter x Height)	50 x 30 mm / 1.96 x 1.18 inch
Thread Size	M5*8
Lead Length	24 cm / 9.5 inch
Operating Temperature	Up to 155°C (Insulation rating)

Setup

1. **Mounting:** Identify a suitable mounting location. The electromagnet features an M5*8 threaded mounting

hole on its back for secure attachment. Use appropriate screws and tools to fix the electromagnet firmly to the desired surface or mechanism.



Figure 4: The threaded mounting hole located on the back of the electromagnet for easy installation.

2. **Electrical Connection:** Connect the two lead wires of the electromagnet to a stable 24V DC power supply. Ensure correct polarity if the application requires it, although electromagnets typically function regardless of DC polarity for simple magnetic attraction. Secure all connections to prevent accidental disconnection or short circuits.
3. **Testing:** Before full deployment, briefly apply power to the electromagnet to verify its functionality. Ensure it attracts ferromagnetic materials as expected.

Operating Instructions

The uxcell Round Solenoid Electromagnet operates by applying a 24V DC current to its lead wires. When power is supplied, the electromagnet generates a magnetic field, attracting ferromagnetic objects. When power is removed, the magnetic field collapses, releasing the object.

- **Activation:** Apply 24V DC power to the lead wires. The electromagnet will become active.
- **Deactivation:** Disconnect or switch off the 24V DC power supply. The electromagnet will deactivate.
- **Load Management:** Ensure the weight of the object being lifted or held does not exceed the 50kg (500N) suction capacity. Overloading can lead to failure or damage.
- **Surface Contact:** For optimal suction, ensure the electromagnet's surface makes full and flat contact with

the ferromagnetic object. Gaps or uneven surfaces will reduce the effective holding force.

Maintenance

- **Cleaning:** Periodically clean the electromagnet's surface to remove dust, debris, or metallic particles that could reduce its holding force. Use a dry, soft cloth. Do not use abrasive cleaners or solvents.
- **Inspection:** Regularly inspect the lead wires for any signs of wear, fraying, or damage. Ensure connections remain secure.
- **Environmental Protection:** While the electromagnet is designed to be waterproof and oil-proof, avoid prolonged exposure to harsh chemicals or extreme environmental conditions beyond its specified operating temperature.
- **Storage:** When not in use, store the electromagnet in a dry, clean environment, away from strong magnetic fields and sensitive electronics.

Troubleshooting

Problem	Possible Cause	Solution
Electromagnet does not activate (no magnetic force).	No power supply, incorrect voltage, loose wiring, damaged electromagnet.	Check 24V DC power supply. Verify all electrical connections are secure. Ensure correct voltage is applied. If issues persist, the electromagnet may be faulty and require replacement.
Weak magnetic force.	Insufficient power, uneven contact surface, excessive load, debris on surface.	Confirm 24V DC power supply is stable. Ensure full, flat contact with the object. Clean the electromagnet's surface. Reduce the load to within specifications.
Electromagnet becomes excessively hot.	Continuous operation for extended periods, high ambient temperature, incorrect voltage.	Allow the electromagnet to cool down. Consider duty cycle limitations for continuous operation. Ensure ambient temperature is within acceptable limits. Verify input voltage is 24V DC.

Applications

The uxcell Round Solenoid Electromagnet is versatile and suitable for a wide range of automation applications due to its robust design and reliable performance. Common applications include:

- Assembly lines
- Sorting machines
- Packaging machinery
- Robotic arms
- Textile machinery
- Experimental equipment
- Transportation equipment
- Household appliances
- Automatic door locks

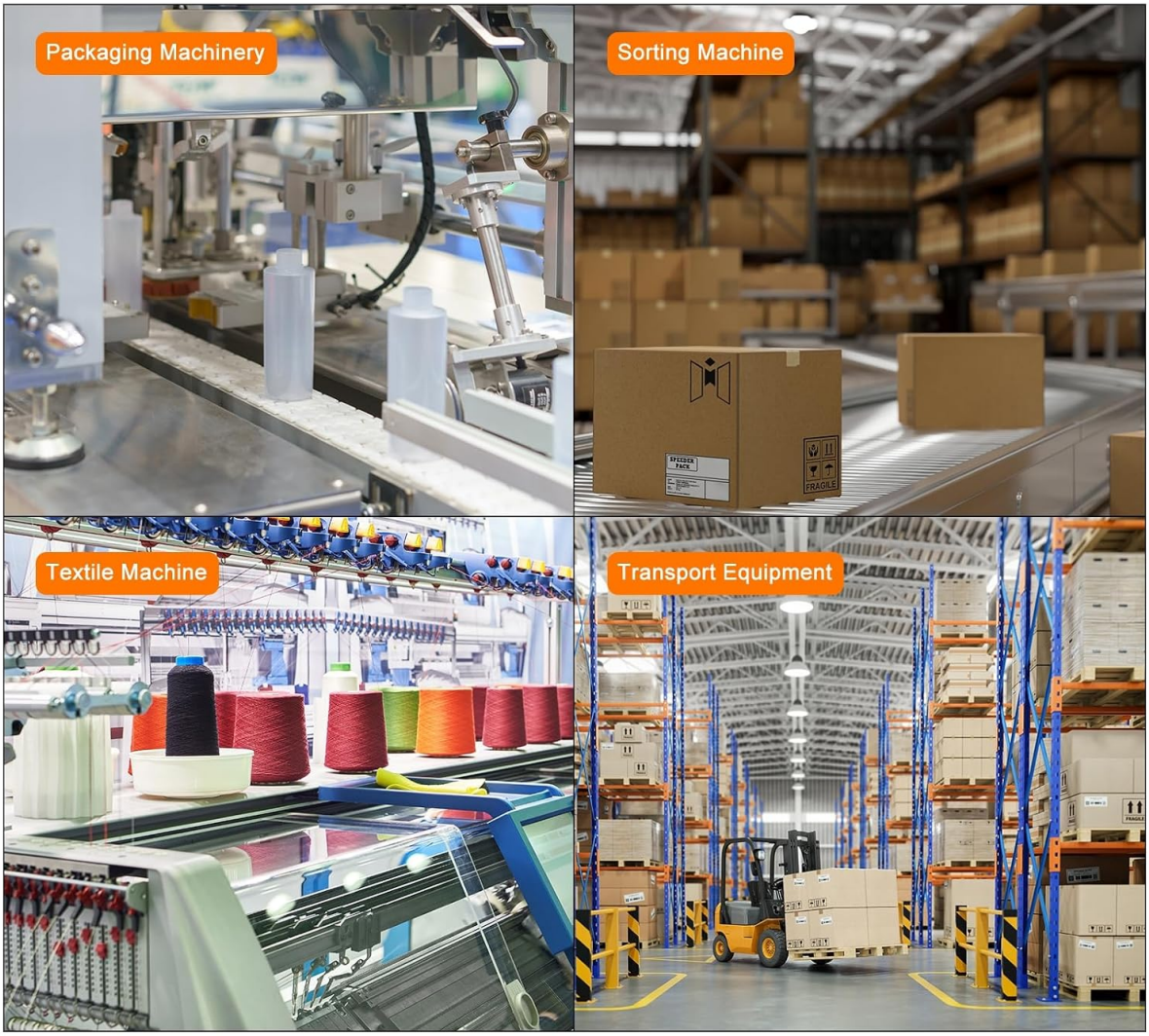


Figure 5: Illustrative examples of various industrial and domestic applications where the electromagnet can be utilized.

Warranty and Support

For warranty information or technical support regarding your uxcell Round Solenoid Electromagnet, please contact the manufacturer or your point of purchase. Ensure you have your model number (a24062100ux0410) and purchase details available when seeking assistance.

Manufacturer: uxcell

For further assistance, visit the uxcell Store on Amazon.