

Yanzeo AN960

Yanzeo YRFID-09Y65A UHF RFID Antenna AN960 User Manual

Model: AN960

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the Yanzeo YRFID-09Y65A 9DBI UHF RFID Antenna, model AN960. Please read this manual carefully before using the product to ensure proper functionality and safety.

2. PRODUCT OVERVIEW

The Yanzeo YRFID-09Y65A is a high-performance 9DBI UHF RFID antenna designed for reliable data capture in various environments. It operates within the 902-928MHz frequency range and features circular polarization, making it suitable for applications requiring robust RFID tag reading. Its waterproof design ensures durability in challenging conditions.

- **High Performance:** Optimized for RFID applications with a reading distance of 1-15 meters (up to 20 meters maximum).
- **Durable Construction:** Waterproof design ensures reliable operation in various environmental conditions.
- **Quality Assurance:** Manufactured in an ISO-9001 certified facility, ensuring high product quality and reliability.
- **Versatile Applications:** Ideal for long-range RFID applications such as warehouse management, logistics, and factory automation.



Figure 2.1: Top view of the Yanzeo YRFID-09Y65A UHF RFID Antenna, showing the N-type connector cable.

3. TECHNICAL SPECIFICATIONS

Parameter	Value
Frequency Range	902-928 MHz
Gain	9 dBi
Bandwidth	26 MHz
Standing Wave Ratio (VSWR)	≤ 1.3
Horizontal Beamwidth	65°
Vertical Beamwidth	65°
Polarization	Circular Polarization
F/B Ratio	≥ 21
Cross-polar Ratio	$\geq 15\text{dB}@0^\circ$, $\geq 10\text{dB}@ \pm 60^\circ$
Max. Power	300 W
Input Impedance	50 Ω

Parameter	Value
Connector Model	N(F)
Connector Position	Back
Antenna Size (L×W×H)	260 x 260 x 40 mm
Weight	1.0 kg (2.2 lbs)
Radome Material	ABS (white)
Reflector Material	Aluminum/Copper
Operating Temperature	-40°C to +60°C
Operational Humidity	<95%
Rated Wind Velocity	36.9 m/s
Extreme Wind	60 m/s
Mechanical Tilt	0-18°
Installation Type	Pole installation (Φ40~Φ80mm)
Lightning Protection	DC Grounding

4. SETUP AND INSTALLATION

The Yanzeo YRFID-09Y65A antenna is designed for pole installation. Ensure the chosen pole has a diameter between 40mm and 80mm for secure mounting.

4.1 Mounting the Antenna

1. Identify a suitable location for the antenna, ensuring a clear line of sight for optimal RFID performance.
2. Attach the provided mounting bracket to the rear of the antenna using the screws.
3. Securely fasten the mounting bracket to the pole using the U-bolts or clamps, ensuring the antenna is stable and oriented correctly.
4. Adjust the mechanical tilt of the antenna (0-18°) as needed for optimal coverage.



Figure 4.1: The Yanzeo YRFID-09Y65A antenna shown mounted on a pole using its bracket.

4.2 Connecting the Antenna

The antenna features an N(F) type connector located on the back panel. Use a compatible N-type coaxial cable to connect the antenna to your UHF RFID reader.

1. Ensure the RFID reader is powered off before making any connections.
2. Carefully screw the N-type coaxial cable connector onto the N(F) port on the back of the antenna. Tighten securely by hand, then use a wrench for a final snug fit, but do not overtighten.
3. Connect the other end of the coaxial cable to the appropriate antenna port on your RFID reader.
4. Verify all connections are secure and weatherproofed if exposed to outdoor elements.



Figure 4.2: Rear view of the antenna, highlighting the N-type connector and mounting hardware attachment points.

5. OPERATING INSTRUCTIONS

Once the antenna is securely installed and connected to a compatible UHF RFID reader, it is ready for operation. The antenna functions as a passive component, transmitting and receiving radio frequency signals for RFID tag communication.

5.1 Basic Operation

1. Power on your UHF RFID reader according to its manufacturer's instructions.
2. Configure the RFID reader settings, including frequency, power output, and read zones, to match your application requirements and local regulations.
3. The antenna will automatically begin to transmit and receive RFID signals within its operational range (typically 1-15 meters, up to 20 meters under ideal conditions).
4. Monitor the RFID reader's software or indicators to confirm successful tag detection and data acquisition.

5.2 Optimal Performance

To achieve optimal performance from your RFID system:

- Ensure the antenna is positioned to maximize coverage of the desired read zone.
- Minimize obstructions (metal, liquids, dense materials) between the antenna and RFID tags.
- Adjust the antenna's mechanical tilt and reader power settings for the specific environment and tag types.
- Utilize the circular polarization feature to improve read rates, especially when tag orientation is variable.

6. MAINTENANCE

The Yanzeo YRFID-09Y65A antenna is designed for minimal maintenance due to its robust and waterproof construction. However, periodic checks can help ensure long-term reliability.

- **Cleaning:** If the antenna becomes dirty, gently wipe the radome with a soft, damp cloth. Avoid abrasive cleaners or solvents.
- **Connection Check:** Periodically inspect the N-type connector and cable for any signs of corrosion, damage, or loose connections. Ensure weatherproof seals are intact.
- **Mounting Stability:** Verify that the antenna remains securely mounted to its pole and that all mounting hardware is tight.
- **Environmental Conditions:** While waterproof, extreme environmental conditions outside the specified operating temperature (-40°C to +60°C) and humidity (<95%) should be avoided.
- **Lightning Protection:** The antenna features DC grounding for lightning protection. Ensure proper grounding practices are followed during installation.

7. TROUBLESHOOTING

If you encounter issues with your Yanzeo YRFID-09Y65A antenna, consider the following troubleshooting steps:

- **No Tag Reads:**
 - Verify that the antenna cable is securely connected to both the antenna and the RFID reader.
 - Check the RFID reader's power supply and ensure it is operational.
 - Confirm that the RFID reader's settings (frequency, power, antenna port) are correctly configured.
 - Ensure RFID tags are within the antenna's read range and orientation.
 - Inspect the antenna cable for damage or kinks.
- **Poor Read Performance:**
 - Adjust the antenna's position and mechanical tilt to optimize coverage.
 - Reduce interference from other electronic devices or metallic objects in the vicinity.
 - Increase the RFID reader's power output (if permissible and safe).
 - Ensure the correct type of RFID tags are being used for the application.
 - Check for environmental factors (e.g., heavy rain, extreme temperatures) that might affect performance.
- **Physical Damage:**
 - If the antenna or cable shows signs of physical damage, discontinue use and contact support for assistance.

8. WARRANTY AND SUPPORT

Yanzeo products are manufactured to high-quality standards. For any questions, technical assistance, or support regarding your YRFID-09Y65A antenna, please contact Yanzeo customer service. We are committed to providing prompt assistance to resolve any issues you may encounter.

Please refer to your purchase documentation or the official Yanzeo website for specific warranty terms and contact information.

