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User Manual for SMARTAEGIS-WT2053 Series Heavy Duty Gate Arm Barrier
Version 2.3

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1. Introduction

The SMARTAEGIS-WT2053 Series Heavy Duty Gate Arm Barrier is a high-performance access control solution designed for demanding environments. Featuring an adjustable boom arm length (3–6 meters), a durable barrier arm rest stand, and seamless

integration with access control systems, it is ideal for industrial, commercial, and institutional applications.

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2. Technical Specifications

- **Protection Level**: IP64 (dust-tight and water-resistant)
- **Voltage**: 220V ±10% or 110V ±10%, 50/60Hz
- **Motor**: 220V/9W pure copper motor with high-precision turbine gearbox
- **Remote Control Distance**: ≥10 meters
- **Net Weight**: 80 kg
- **Arm Speed Adjustment**: 1.5s, 3.0s, 4.5s, or 6.0s (4 preset speeds)
- **Boom Length**: Adjustable from **3 meters to 6 meters** (customizable during installation)
- **Chassis Dimensions**: 340 × 250 × 1030 mm
- **Operating Temperature**: -30°C to +80°C
- **Relative Humidity**: <90%

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3. Structural Design

- **Core Components**:
  - **Head**: Houses motor, gearbox, and Hall limit sensors.
  - **Cam Door**: Reinforced door for secure alignment.
  - **Chassis**: Constructed from 2.0mm cold steel; critical parts use ≥4.0mm steel for durability.
  - **Barrier Arm Rest Stand**: Heavy-duty stand included for stable arm placement in the resting position. Made of galvanized steel to resist corrosion.
- **Boom Arm**: Lightweight alloy with corrosion-resistant coating; adjustable length (3–6 meters).

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4. Transmission & Hardware Features

1. **Non-Isokinetic Double Dead Point Four-Link Mechanism**: Ensures smooth, stable arm movement.
2. **Group Spring Balancing**: Reduces motor load and extends lifespan.
3. **Hall Limit Sensors**: Combined with structural limits for precise positioning.
4. **Magnet-Based Limit Adjustment**: Non-contact horizontal/vertical calibration.
5. **CNC-Processed Drive Parts**: High-precision components; no cast parts.
6. **Fire Protection Interfaces**: Built-in circuits for emergency shutdown.
7. **Infrared/Pressure Wave Radar**: Obstacle detection for automatic stoppage.
8. **Waterproof & Moisture-Proof Design**: Suitable for harsh environments.

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5. Integration with Access Control Systems

- **Access Control Symmetry System**:
  - Supports integration with third-party access control systems via RS-485 communication.
  - Configurable for bidirectional communication (e.g., gate status feedback to central systems).
- **HID Reader Compatibility**:
  - **Long-Range Readers**: Compatible with **HID 5375 series** (extended range).
  - **iClass & Multi-Class HID Readers**: Supports secure credential authentication (e.g., iClass SE, MultiClass SE).
  - **Communication Protocol**: RS-485 interface with a baud rate of **9600**.
  - **Controller Integration**: Connect to access control panels for automated entry/exit management.
- **State Feedback & Landing Output**: Real-time status updates (e.g., "gate open/closed") for system synchronization.

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6. Installation Guidelines

1. **Site Preparation**:
    - Ensure a flat, stable surface; anchor chassis using provided bolts.
    - Verify chassis dimensions (340 × 250 × 1030 mm).
2. **Boom Arm Setup**:
    - Select desired boom length (**3–6 meters**) and secure with provided fasteners.
    - Adjust the **barrier arm rest stand** position to align with the chosen boom length.
3. **Electrical Setup**:
    - Connect to 220V/110V power supply as per local standards.
    - Integrate fire protection circuits and traffic light interfaces (optional).
4. **Access Control Wiring**:
    - Use shielded cables for RS-485 communication (**baud rate: 9600**).
    - Connect HID readers (5375 series, iClass, or Multi-Class) to the designated input port.

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7. Operation Instructions

- **Remote Control**: Operate within 30m range (battery-powered remote included).
- **Speed Adjustment**: Select preset speeds (1.5s–6.0s) via the control panel.
- **Directional Configuration**: Set left/right swing during initial setup.
- **Access Control**: Use HID readers for automated entry; sync with central systems for real-time logging.

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8. Safety Features

- **IP64 Rating**: Resists dust and water ingress.
- **Collision Avoidance**: Infrared/pressure wave radar halts motion upon detecting obstacles.
- **Emergency Stop**: Fire protection circuits trigger immediate shutdown.
- **Rest Stand Stability**: Ensures secure placement of the boom arm in the resting position.

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9. Maintenance Tips

- **Lubrication**: Apply grease to linkage joints every 3 months.
- **Sensor Maintenance**: Clean Hall sensors monthly; check HID reader alignment.
- **Spring Inspection**: Verify balancing springs annually for tension.
- **Rest Stand Check**: Inspect bolts and alignment quarterly to ensure stability.

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10. Optional Features

- **Traffic Light Interface**: Sync with traffic signals for coordinated operation.
- **Drop Bar**: Add a secondary barrier for enhanced security.
- **RS-485 Communication**: Enable multi-device networking.
- **Integration with Symmetry, Lenel and Honeywell automation access control**.

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11. Troubleshooting

Issue	Solution
Arm not moving	Check power supply and fuse.
HID reader unresponsive	Verify RS-485 wiring (baud rate: 9600).
Erratic limit detection	Recalibrate Hall sensors; clean debris.
Boom arm misaligned at rest	Adjust barrier arm rest stand position.

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12. Warranty & Support

- **Warranty**: 1 year on motor, chassis, electronic components, and structural parts.
- **Contact**: Support@smartaegisuk.com | +44-7405-010445

Note: For advanced configurations (e.g., HID reader programming, RS-485 network setup, or boom length customization), consult the technical manual or contact support.

Address: **128, City Road, London, EC1V 2NX, UNITED KINGDOM**