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## MERCURY SECURITY MR50

# MR50 Single Reader Interface Module User Manual

Model: MR50 | Brand: MERCURY SECURITY

## 1. INTRODUCTION

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The Mercury Security MR50 is a high-performance, compact, and economical single-card reader interface panel. Designed for versatility, it can be integrated into various access control systems, offering robust connectivity and support for multiple reader technologies.

This manual provides essential information for the proper installation, operation, and maintenance of your MR50 module.

## 2. PRODUCT OVERVIEW AND FEATURES

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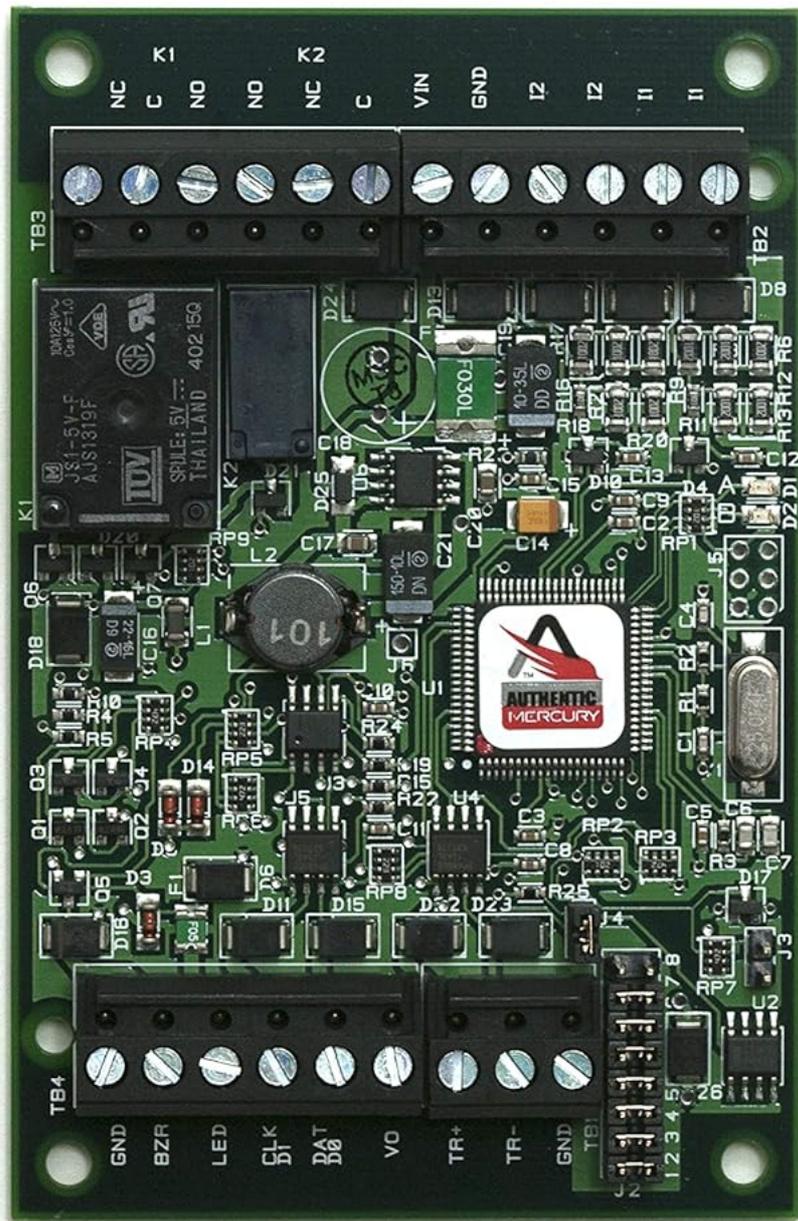


Figure 2.1: MR50 Single Reader Interface Module

This image displays the MR50 module, highlighting its compact design and the layout of its components, including the terminal blocks for wiring connections and the central Mercury chip.

The MR50 module offers the following key features:

- **Seamless Integration:** Easily connects to Mercury's intelligent controllers, ensuring compatibility and streamlined system expansion.
- **Comprehensive I/O:** Provides all necessary input/output connections for single door control, simplifying wiring and installation.
- **Compact Design:** Features a small footprint, allowing for versatile placement and installation in various environments where space may be limited.
- **Flexible Connectivity:** Utilizes RS-485 connection, enabling clustered or distributed configurations based on specific installation requirements.
- **Broad Reader Support:** Compatible with a wide range of reader technologies, including Wiegand, clock and data, magnetic stripe, F2F, Supervised F2F, OSDP, keypad, and biometrics.

### 3. SETUP AND INSTALLATION

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Proper installation is crucial for the optimal performance of the MR50 module. Always ensure power is disconnected before making any wiring connections.

#### 3.1. Mounting

Mount the MR50 module securely within an appropriate enclosure, away from direct moisture, extreme temperatures, and strong electromagnetic interference. Use non-conductive standoffs if mounting directly to a metal surface.

#### 3.2. Wiring Connections

Refer to the terminal block labels on the MR50 board for correct wiring. The module features two main terminal blocks: TB3 (top) and TB4 (bottom).

- **TB3 (Top Terminal Block):**
  - **K1/K2 (Relay Outputs):** NC (Normally Closed), C (Common), NO (Normally Open) for controlling door locks or other devices.
  - **VIN/GND:** Power input (typically 12V DC).
  - **I1/I2:** Input terminals for sensors or other monitoring devices.
- **TB4 (Bottom Terminal Block):**
  - **GND:** Ground connection.
  - **BZR:** Buzzer output.
  - **LED:** LED indicator output.
  - **CLK/DT (D1/D0):** Clock and Data lines for Wiegand readers.
  - **VO:** Voltage Output for reader power.
  - **TR+/TR-:** RS-485 communication lines for connection to the intelligent controller.

Ensure all connections are secure and follow local electrical codes. Consult the intelligent controller's manual for specific wiring diagrams and configuration details.

### 4. OPERATING INSTRUCTIONS

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The MR50 module functions as an interface between a card reader and a Mercury intelligent controller. Its operation is primarily managed through the connected controller's software and configuration.

## 4.1. System Integration

Once physically installed and wired, the MR50 module communicates with the main access control panel via the RS-485 bus. The intelligent controller will detect the MR50 and allow for its configuration within the system software.

## 4.2. Reader Functionality

Connect your chosen card reader (Wiegand, OSDP, etc.) to the appropriate terminals on the MR50. The module translates the reader's data into a format understood by the intelligent controller, which then processes access requests based on programmed credentials and rules.

For specific reader configuration and operation, refer to the documentation provided with your chosen reader and the intelligent controller's software manual.

## 5. MAINTENANCE

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The MR50 module is designed for reliable, long-term operation with minimal maintenance. However, periodic checks can help ensure continued performance.

- **Cleaning:** Keep the module free from dust and debris. Use a soft, dry cloth for cleaning. Avoid liquid cleaners or solvents.
- **Connection Check:** Periodically inspect all wiring connections to ensure they are secure and free from corrosion.
- **Environmental Conditions:** Ensure the module remains within its specified operating temperature and humidity ranges.
- **Firmware Updates:** If available, firmware updates for the MR50 or the connected intelligent controller should be performed according to manufacturer guidelines to ensure optimal performance and security.

## 6. TROUBLESHOOTING

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If you encounter issues with your MR50 module, consider the following common troubleshooting steps:

Problem	Possible Cause	Solution
Module not powering on.	Incorrect power wiring; insufficient power supply; faulty module.	Verify VIN/GND connections. Check power supply voltage and current. Test with a known good power supply.
Reader not responding.	Incorrect reader wiring (Data/Clock, power); reader type not supported; communication issue with controller.	Check CLK/DT, VO, and GND connections to the reader. Confirm reader compatibility. Verify RS-485 communication to the controller.
Communication errors with intelligent controller.	Incorrect RS-485 wiring (TR+/TR-); incorrect addressing; bus termination issues.	Verify TR+/TR- polarity. Check controller software for correct module addressing. Ensure proper RS-485 bus termination if applicable.
Relay not activating.	Incorrect relay wiring; controller not sending activation command; faulty relay.	Check K1/K2 wiring (NC, C, NO). Verify controller configuration for relay activation. Test relay functionality if possible.

If problems persist, contact Mercury Security technical support or your authorized reseller.

## 7. SPECIFICATIONS

Attribute	Detail
Model Number	MR50
Manufacturer	Mercury Security
Connectivity	RS-485 to intelligent controller
Reader Support	Wiegand, Clock and Data, Magnetic Stripe, F2F, Supervised F2F, OSDP, Keypad, Biometrics
Dimensions	4 x 3 x 2 inches (Package Dimensions)
Item Weight	5 ounces
First Available	August 11, 2020

## 8. WARRANTY AND SUPPORT

For detailed warranty information regarding your MR50 Single Reader Interface Module, please refer to the official warranty statement provided by Mercury Security or contact your authorized reseller. Warranty terms typically cover manufacturing defects for a specified period from the date of purchase.

For technical support, product inquiries, or assistance with installation and troubleshooting, please contact Mercury Security directly through their official website or the contact information provided with your purchase. Ensure you have your product model number (MR50) and any relevant purchase details ready when seeking support.

*Note: Unauthorized modifications or improper installation may void the product warranty.*

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