

# FRONT DOOR ACCESS CONTROLLER

Industrial Raspberry Pi Based Relay Controller for Electric Door Latch Systems

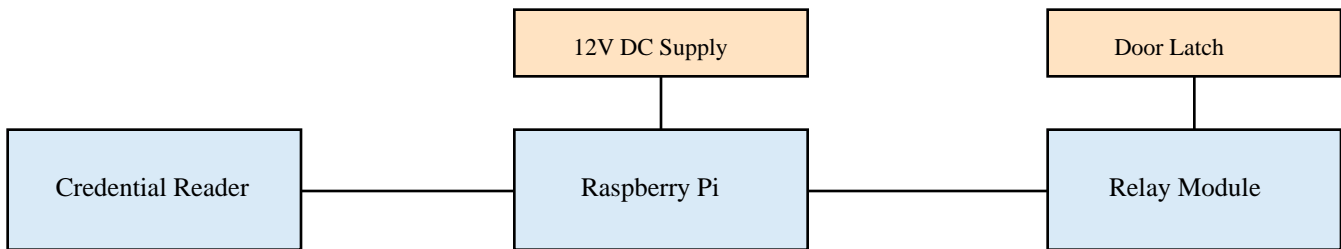
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## Product Overview

The FRONT DOOR Access Controller is a compact low-voltage access management platform designed for electric latch systems, relay-controlled doors, and smart building integration. The solution combines Raspberry Pi GPIO automation with industrial relay switching to provide scheduled access control, API-triggered unlock operations, and credential-based entry workflows. The platform supports standalone deployments or cloud-connected operation for distributed commercial and industrial environments.

Core Features	Supported Functions
<ul style="list-style-type: none"><li>• GPIO Relay Control</li><li>• 12V DC Electric Latch Support</li><li>• Ethernet &amp; Wi-Fi Connectivity</li><li>• Local API Integration</li></ul>	<ul style="list-style-type: none"><li>• Scheduled Unlock Windows</li><li>• NFC / BLE / RFID Integration</li><li>• Remote Trigger Support</li><li>• Multi-Door Expansion</li></ul>

## Typical System Architecture



## Deployment Scenarios

- Office and warehouse controlled entry
- Smart building automation integration
- NFC/BLE employee access workflows
- API-driven remote unlock operations
- Commercial low-voltage relay deployments

## Technical Specifications

Category	Specification
Controller Platform	Raspberry Pi 4 / Pi Zero 2 W Compatible
Relay Type	Mechanical or MOSFET Relay Module
Relay Trigger Voltage	3.3V GPIO / 5V Trigger
Power Input	12V DC Regulated Supply
Recommended PSU	12V DC 2A Minimum
Door Latch Current	Typical 320mA @ 12V DC
Network Connectivity	Ethernet / Wi-Fi
Operating Mode	Pulse Unlock or Continuous Unlock
Recommended Wiring	22 AWG or Larger
Protection	Flyback Diode Recommended
Mounting	DIN Rail or Enclosure Mount
Operating Temperature	0°C to 45°C

Physical Characteristics	Value
Recommended Enclosure	Industrial ABS or DIN Rail Housing
Approximate Controller Size	85mm x 56mm x 20mm (Pi Based)
Relay Module Size	50mm x 26mm x 18mm
Estimated Total Weight	< 250g

### Security & Reliability

- Relay-isolated low-voltage switching architecture
- Supports local-only secure deployments
- Compatible with remote monitoring platforms
- Supports scheduled lock/unlock automation
- Designed for continuous commercial operation

### Applications

Commercial offices • Warehouses • Access-controlled facilities • Smart buildings • Prototype IoT deployments