

MatrixAI IoT Edge Controller

Model: MAI-2026

1. Product Overview

The **MatrixAI IoT Edge Controller (MAI-2026)** is a powerful, industrial-grade edge computing device designed for smart building, industrial automation, and IoT applications. It enables real-time data acquisition, processing, and communication across multiple protocols, making it ideal for **Facilities Management, BMS, Energy Monitoring, and Smart Infrastructure**.

With support for **LoRaWAN, 4G/LTE, Wi-Fi, NB-IoT, and Modbus**, the MAI-2026 acts as a central gateway for connecting sensors, devices, and cloud platforms.

2. Key Features

- Multi-protocol communication support (LoRaWAN, 4G/LTE, Wi-Fi, NB-IoT, Modbus)
 - Edge computing capability for local data processing and automation
 - Industrial-grade design for harsh environments
 - Real-time monitoring and control
 - Secure cloud integration (MQTT, HTTP, HTTPS)
 - Remote configuration and firmware updates (OTA)
 - Scalable architecture for multi-site deployment
 - Compatible with BMS, EMS, and FM platforms
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3. Hardware Specifications

Processor & Memory

- High-performance industrial microprocessor
- RAM: 512MB / 1GB (configurable)
- Flash Storage: 4GB / 8GB eMMC

Power Supply

- Input Voltage: 9V – 36V DC
- Power Consumption: < 10W
- Protection: Over-voltage, reverse polarity protection

Interfaces

- Ethernet: 1 × RJ45 (10/100 Mbps)
 - USB: 1 × USB 2.0
 - RS485: 2 × ports (Modbus RTU)
 - RS232: Optional
 - Digital Inputs: 4 channels
 - Digital Outputs: 2 channels (relay)
 - Analog Inputs: Optional (0–10V / 4–20mA)
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4. Communication Capabilities

- **LoRaWAN** (Class A/C support)
 - **4G/LTE** (global bands supported)
 - **NB-IoT / Cat-M1**
 - **Wi-Fi** (802.11 b/g/n)
 - **Ethernet**
 - **Modbus RTU / TCP**
 - **MQTT / HTTP / HTTPS APIs**
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5. Software & Platform Support

- Embedded Linux OS
 - Node-RED support for flow-based programming
 - Remote device management dashboard
 - API integration for third-party platforms
 - Data logging and edge analytics
 - Alarm and event management system
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6. Functional Capabilities

- Data acquisition from sensors and meters
 - Local rule-based automation
 - Energy monitoring and reporting
 - Predictive maintenance support
 - Integration with HVAC, lighting, water systems
 - Real-time alerts and notifications
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7. Environmental Specifications

- Operating Temperature: -10°C to +60°C
 - Storage Temperature: -20°C to +70°C
 - Humidity: 5% to 95% (non-condensing)
 - Enclosure: Industrial ABS / Metal casing
 - Mounting: DIN Rail / Wall Mount
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8. Security Features

- Secure boot
 - TLS/SSL encryption
 - Firewall and VPN support
 - User authentication and role management
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9. Applications

- Building Management Systems (BMS)
 - Energy Management Systems (EMS)
 - Smart Cities and Infrastructure
 - Industrial Automation
 - Water and Waste Management
 - Asset Monitoring and Control
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10. Compliance & Standards

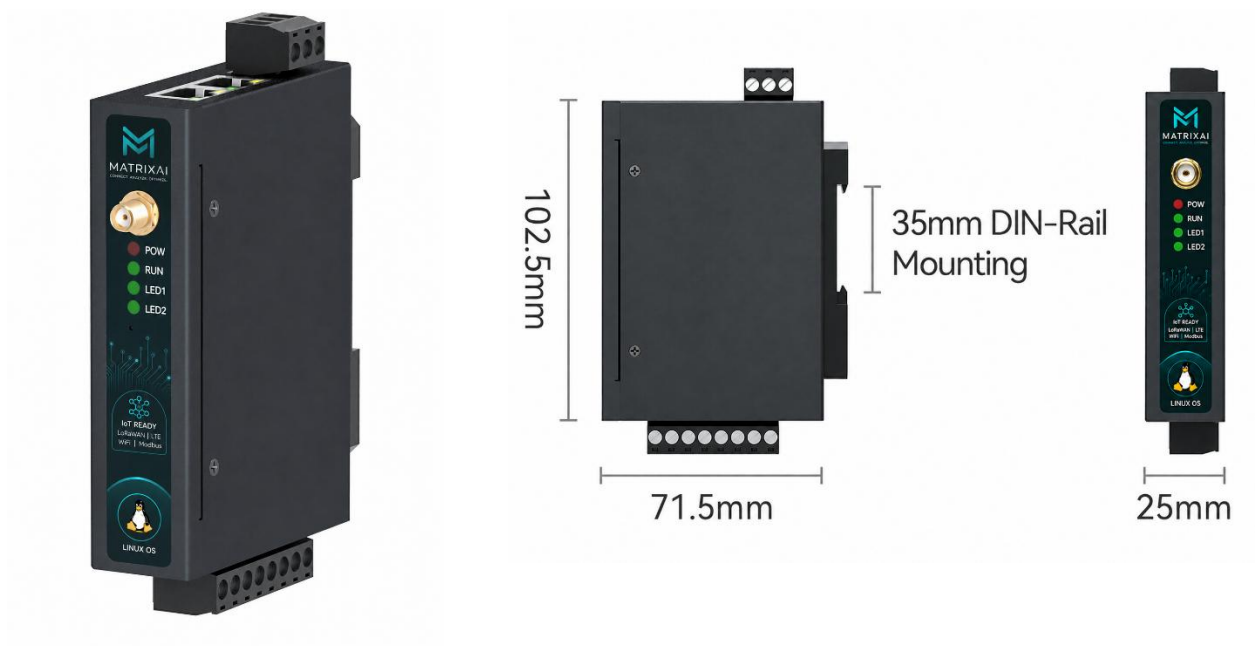
- CE / FCC (optional based on configuration)
 - RoHS compliant
 - Industrial safety standards
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11. Ordering Information

Model	Description
MAI-2026	Standard IoT Edge Controller
MAI-2026-L	With LoRaWAN
MAI-2026-4G	With 4G/LTE
MAI-2026-PRO	Full communication package

12. Product Highlights

- One device for all communication needs
- Reduces dependency on multiple gateways
- Designed for scalability and flexibility
- Ideal for AI-enabled IoT ecosystems



MatrixAI (FZE)

Smart IoT & AI Solutions Provider
UAE | Saudi Arabia | Global Deployment Ready
