



PRODUCT SPECIFICATION

EM100



Chengdu Zongheng Intelligence
Control Technology Co., Ltd.

前言 PREFACE

Intended Use

This product (EM Series FlowPLC® Edge Computing Gateway) is only for use as specified in relevant technical documents. Proper transport, storage, assembly, installation, commissioning, operation, and maintenance are required for safe, reliable operation. Ensure permissible environmental conditions (e.g., temperature, humidity, supply voltage). Observe all notices in this specification and related documents.

Qualified Personnel

Only qualified personnel may operate the products/systems described. Operators must strictly follow the accompanying documents, especially safety and warning notices. With relevant training and experience, qualified personnel can identify potential risks and avoid hazards.

Reliable Grounding and Connection

During operation, the protective earth terminal (PE/M) must be reliably grounded. Improper grounding or connection may cause malfunction, data loss, or injury. Always follow the wiring requirements in this specification and periodically check connection reliability.

Disclaimer

We assume no liability for loss or error arising from use of this document. Consistency with actual hardware and software has been checked, but deviations may exist; complete consistency is not guaranteed. All data tested per regulations. We reserve the right to improve and correct function and performance descriptions in later versions. Watch for document updates.

Revision History

Revision	Date	Description
V1.0	September 2026	First release

Scope of Document

This document applies to Zongheng Intelligent Control EM Series products, mainly including:

- Communication Coupler: EM100

Specific configuration subject to product model and order number.

Recycling and Disposal

To ensure environmentally compliant recycling, do not dispose of waste equipment with household waste. Contact a certified e-waste disposal service or follow local regulations. Recycle modules containing batteries (e.g., RTC batteries) separately.

产品介绍 PRODUCT INTRODUCTION



- [Modular Expansion](#)
- [Extensive Protocol Support](#)
- [Cloud Collaboration](#)
- [Local Automation](#)
- [Data Processing](#)
- [Dual-Link Connectivity](#)
- [Batch Configuration](#)

The EM Series is Zongheng Intelligent Control's **new generation of expandable edge computing gateways** (FlowPLC®). Built on a **distributed I/O architecture**, it deeply integrates **communication, acquisition, control, and O&M**, breaking traditional hardware boundaries. The EM100 features an **ESP32 dual-core processor**, dual-SIM 4G, Ethernet, Wi-Fi, and RS485 industrial interfaces, with integrated **Modbus TCP, Modbus RTU, MQTT, and TCP protocols**, easily meeting multi-source data acquisition and reliable connectivity needs in power, environmental protection, manufacturing, building automation, and more.

With **modular I/O expansion**, digital, analog, and relay functions are flexibly combined for **plug-and-play ease, second-level assembly, and millisecond response**. Together with visual programming, remote management/upgrade, intranet penetration, and store-and-forward, it enables efficient "**acquisition-transmission-control-operations**" integration. From **edge acquisition and control, protocol conversion, to remote O&M and cloud connectivity**, the EM Series delivers high integration and adaptability, accelerating IIoT deployment and continuous scaling.

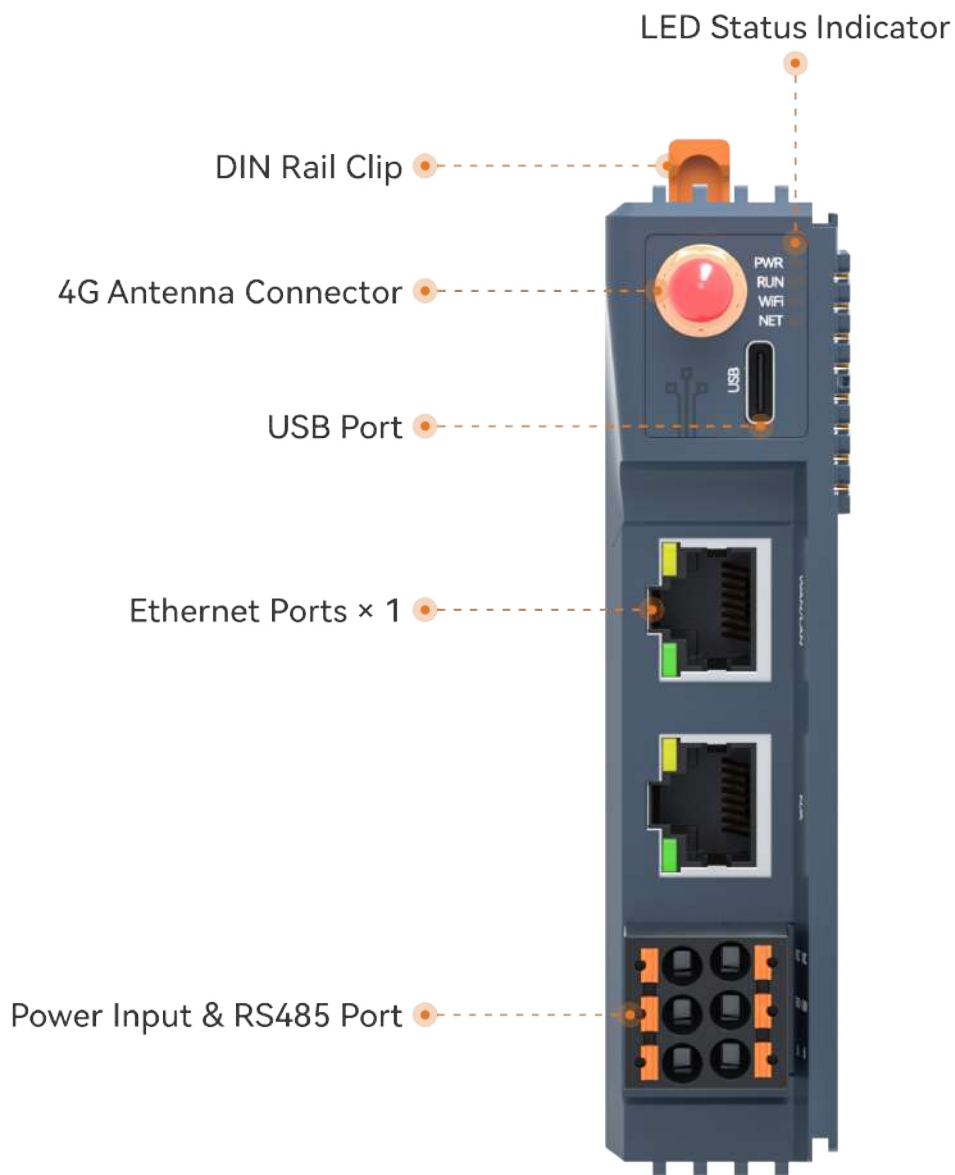
产品规格 PRODUCT SPECIFICATION

Model		EM100
Core Configuration	Processor	ESP32 Xtensa LX7 Dual-Core
	Flash	8 MB
	PSRAM	16 MB
	Module	4G Cat.1
4G	Frequency Bands	LTE-FDD: B1/B3/B5/B8 LTE-TDD: B34/B38/B39/B40/B41
	Transmit Power	LTE-FDD: Class 3 (23 dBm $\pm$ 2 dB) LTE-TDD: Class 3 (23 dBm $\pm$ 2 dB)
	Bandwidth (theoretical max.)	LTE-FDD: DL $\leq$ 10 Mbps, UL $\leq$ 5 Mbps LTE-TDD: DL $\leq$ 8.96 Mbps, UL $\leq$ 3.1 Mbps
	SIM	SIM0: Embedded SIM, SIM1: Nano SIM
Wi-Fi	Standard	802.11 b/g/n (Wi-Fi 4)
	Band	2.4 GHz
	Mode	STA + AP
	Theoretical Speed	150 Mbps
	Optimal Range	10 m
	Max. AP Clients	4
Ethernet	WAN/LAN	1 $\times$ 10/100 Mbps auto-negotiation
USB	Type-C	USB 2.0
RS485	Ports	1
	Terminal	A, B
	Baud Rate	1200 - 115200 bps
	Data Bits	7, 8
	Stop Bits	1, 2
	Parity	NONE, EVEN, ODD
	Protection	ESD, surge protection

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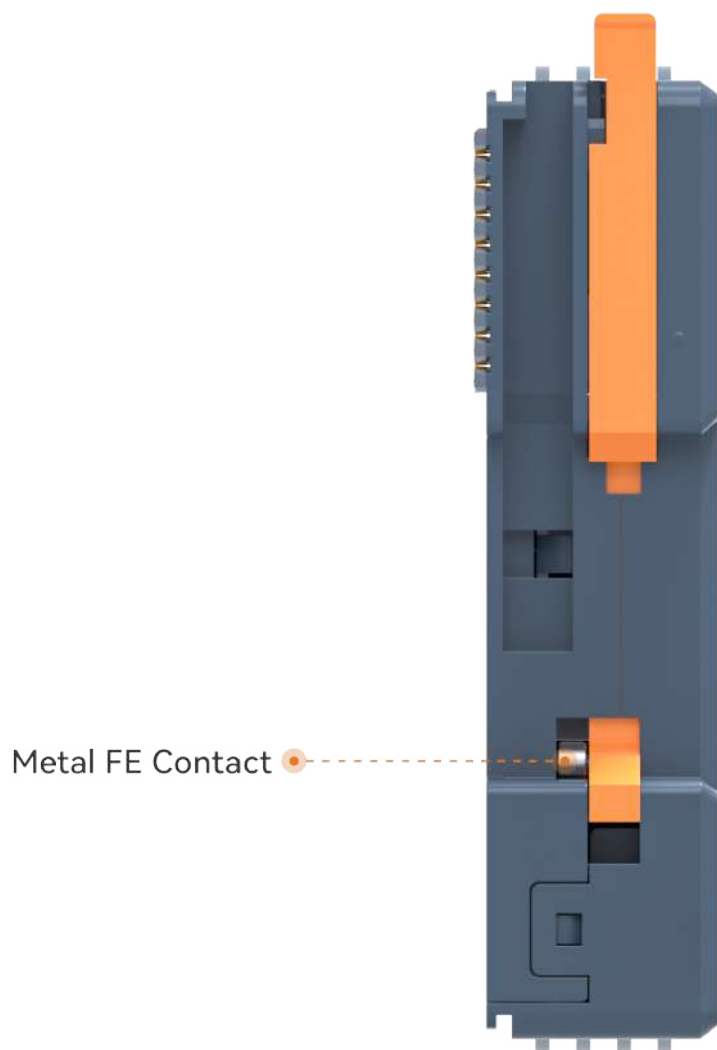
LED Indicators	LED	4 (0 user-programmable)
Electrical	Certification	CE
	Adapter	12 V / 1 A
	Operating Voltage	DC 9 – 36 V
	Operating Current	80 mA @ 12 V
Environmental	Operating Temperature	–40 to 85 °C
	Storage Temperature	–40 to 85 °C
	Operating Humidity	0 – 95% RH (non-condensing)
	Storage Humidity	0 – 95% RH (non-condensing)
Mechanical	Dimensions	25×100×80mm
	Enclosure Material	PC
	Mounting	DIN rail
	Cooling	Passive
	Reset Button	Press 10 s to reset
EMC	ESD	Air: Level 3 ±8 kV Contact: Level 2 ±4 kV
	Surge	Level 2 ±1 kV
	EFT	Level 2 ±1 kV
Supported Protocols	Modbus TCP	✓
	Modbus RTU	✓
	MQTT	✓
	TCP	✓
Software Features	Remote O&M	✓
	Remote Management	✓
	Remote Upgrade	✓

产品总览 PRODUCT OVERVIEW



EM100 Front View

产品总览 PRODUCT OVERVIEW



EM100 Rear View

产品总览 PRODUCT OVERVIEW



EM100 Right View

产品总览 PRODUCT OVERVIEW



Reset Switch

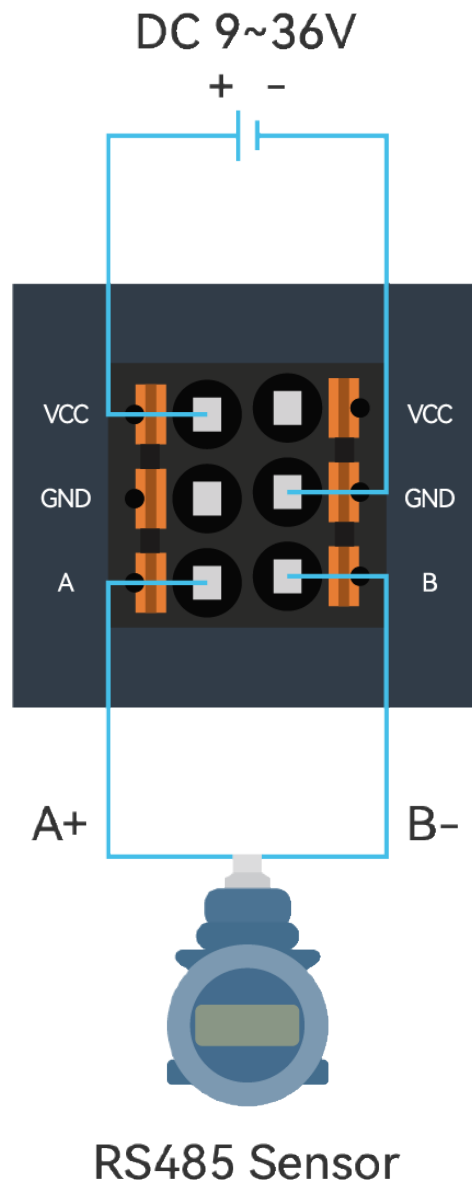
EM100 Top View



SIM Card Slot

EM100 Bottom View

接线说明 WIRING INSTRUCTION



Power & RS485 Wiring Diagram

安装说明 INSTALLATION INSTRUCTION



Product Dimensions

A LEADING PROVIDER OF INTEGRATED IT AND OT PRODUCTS

R&D Center :

CHENGDU IOTRouter TECHNOLOGY CO., LTD
No. 599, Section 1, Huafu Avenue, Shuangliu District,
Chengdu city, Sichuan Province, China

Website :

en.iotrouter.com

Mail :

agneswang@iotrouter.com
queeney@iotrouter.com



WA: agneswang



WA: queeney