

# EDGE-A family of edge gateways

## Product specification



Version number	Revision time	Amendments	Revisions
V1.0	20211117	Herman	First written
V1.1	20220107	Herman	Add version information
V1.2	20220909	Herman	Add model information



## Product description

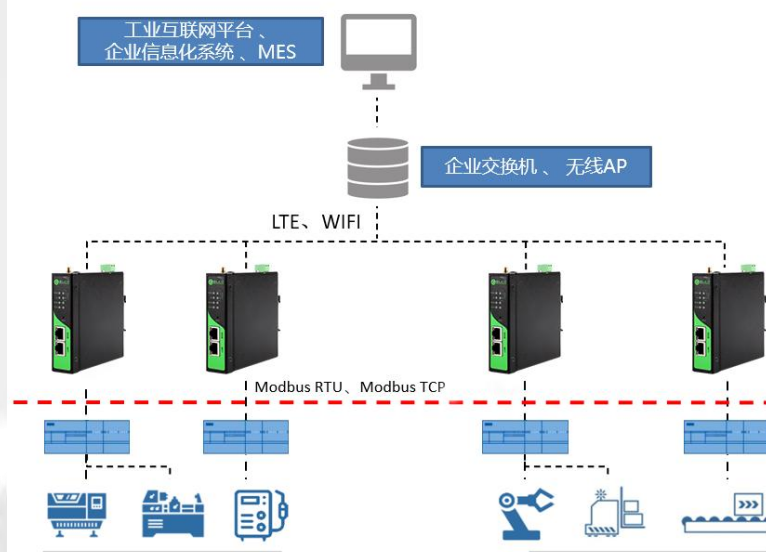
ELCO EDGE-A series products are the new gateway products with 4G, 5G, WiFi function and edge computing capability, which are launched by ELCO for Industrial Internet and Internet of things. The product combines different versions to support mainstream 4G wireless networks, 5G wireless networks, WIFI networking and a variety of broadband network connectivity services, ensure that the target device completes industrial Internet applications such as network access, protocol parsing, data interoperability, etc. . Products with strong data processing and application expansion capabilities, with edge computing capacity expansion, data transmission security and wireless network management and coverage services and other features, to meet the typical industrial internet edge layer on-site machine equipment networking and data aggregation needs, to help "Edge Cloud" collaborative innovation applications to the ground.

The product is equipped with local configuration management software, can achieve the management and configuration of the Edge Gateway. Support to view system status, including CPU utilization, RAM and ROM utilization, host name, model, firmware version, kernel version, local time, runtime, network status, etc. By default, it is equipped with network firewall, supports NAT and port mapping, effectively improves the security and stability of data transmission by means of TLS encryption technology, and embedded software and hardware watchdog, ensure the device is running smoothly.

## Application Framework



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EDGE-a series edge gateway products, for equipment remote operation and maintenance, data collection, network communication design, using embedded design, product security and stability, long-term work in customer sites, they are widely used in industrial internet, computer room air conditioning control and other scenarios.

The equipment can be installed in the main PLC equipment, serial port support equipment, network port support equipment nodes, realize equipment networking, at the same time, the node information data acquisition real-time upload, using MQTT Universal Protocol, can be directly docking IoT application platform, extend the upper application, or docking other existing or public platforms, equipment, on-line management of the situation to meet customer requirements.

## Product features

### 1. Hardware configuration

- Embedded design, product safety and stability, 7 \* 24h uninterrupted work;
- Industrial style metal housing, support lug installation or guide rail installation,



IP20 protection grade;

- The local host supports Reload reset button, the device is running, the network is abnormal fast recovery;
- Support multiple Status lights to feedback the Status of equipment, including Power, Status, Signal, 485, 232 Status indicators, feedback network communication Status, serial communication Status, Power Status and other information;
- Support plug-and-pull iot card to meet the needs of field construction and easy maintenance;
- Configuration of 4G, 5G all-network modules, while supporting external 4G, 5G communication antenna, adjust signal gain to ensure the safety and stability of wireless communication network signals;
- 4G, 5G, wi-fi, 4G + wi-fi, 5G + wi-fi versions are optional
- Adopt full-log A40I processor, can support 1GB memory and 8GB flash;
- With 2 Ethernet ports, support 1 WAN port, 1 Lan Port, the realization of industrial router function;
- Support up to 64GB external TF card storage, increase the field data storage capacity;
- Supporting the beidou/GPS/GLONASS positioning function;
- Support 1-way RS485, 1-way RS232 interface;
- Mini USB debugging interface for easy maintenance.

## 2. Gateway features



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- Support for TLS wireless data transmission encryption
- Support Manual, NTP Timing Mode;
- Support for Mainstream PLC docking control, including Siemens, Mitsubishi, Omron, Rockwell, etc.
- With network firewall, support Nat, port mapping;
- Software and hardware watchdog built into the product to ensure stable operation of the device
- WLAN Port Support Protocol standard: IEEE 802.11 ac/a/b/g/N, security features: open system, shared key, WPA/WPA2 authentication, WEP/TKIP/AES encryption, working mode: AP, STA working mode;
- Support network intelligent diagnosis function, confirm the current state of the network.

### 3. Supporting software

- With the local configuration management interface, you can manage and configure the edge gateway. Support for viewing system status, including CPU utilization, RAM and ROM utilization, host name, model, firmware version, kernel version, local time, runtime, network status, and so on
- The Communication Protocol supports MQTT standard format, and the products can be connected to iotHub through configuration
- Intelligent Edge gateway driver, support ELCO self-developed IoT Hub server software, Edge device access, without remote cloud services;
- Support Python language based on the secondary development, easy to



develop and expand the function;

- Support the installation of third-party software and drivers to achieve local deployment management of edge-layer device access solutions;
- Support for local and remote upgrades;

#### 4.Communication

- Optional 4G wireless communication + Internet communication;
- 5G Wireless + Internet
- Optional WIFI wireless communication + Internet communication;
- Optional 4G + WIFI + Internet
- Optional 5G + WIFI wireless communication mode + Internet communication mode;
- Support extended serial port docking machine room air conditioning control protocol
- Support to expand Modbus, Modbus TCP and other industrial real-time Ethernet protocols, OPC U A protocol functions;
- Support Extension Support Docker to facilitate customers to install third-party software and drivers, including Eko S 7, Modbus TCP, OPC U a multi-Agent, to achieve the edge layer device access scheme local deployment management.

#### Product specifications

Hardware parameters	
VDD	DC10-30V, typical supply DC24V, support overcurrent and reverse protection
Operating temperature and humidity	- 30 ° C ~ + 60 ° C/5 ~ 95% RH without dew
Storage temperature	- 40 ° C ~ + 85 ° C / 5 ~ 95% RH without dew



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and humidity	
Product dimensions	L * W * H (mm) : 110X110X28
Protection level	IP 20
Interface parameters	
Power interface	Terminal power supply
RS485 * 1	2 lines (A/B) Electrical isolation: supported Baud rate: 2,400-115,200 bps Data Bits: 7-8 bits Stop Bits: 1,2 bits Check Bits: None, Even, Odd Frame length: minimum 6byte, maximum 499byte
RS232 * 1	3 lines (RX/TX/GND) Electrical isolation: supported Baud rate: 2,400-115,200 bps Data Bits: 7-8 bits Stop Bits: 1,2 bits Check Bits: None, Even, Odd Frame length: minimum 6byte, maximum 499byte
Wan * 1	10/100/1000M adaptive support
LAN * 1	10/100M adaptive support
SMA * 1 ~ 5	External spiral inner hole antenna terminal, impedance matching 50Ω
SIM card slot * 1	Standard MINI SIM slot
Mini USB port	Equipment debugging
Reload button	Press for about 5 seconds, the device to restore the default configuration, and the device restart
Lights	8 working STATUS indicators, power, 4G, RS232, RS485, STATUS
Network parameters	
Communication standard	4g
Communications	FDD-LTE, TDD-LTE, GSM/GPRS
Standard frequency band	<ul style="list-style-type: none"> <li>● FDD-LTE: B1, b3, B5, B8</li> <li>● TDD-LTE: B34, B39, B40, B41</li> <li>● GSM/GPRS: 900/1800 MHz</li> </ul>
Wireless rate	<ul style="list-style-type: none"> <li>● GPRS: MAX 85.6 KBPS (DL)/Max 85.6 KBPS (UL)</li> <li>● FDD-LTE: non-CA CAT1, Max 10Mbps (DL)/Max 5Mbps (UL)</li> <li>● TDD-LTE: non-CA CAT1, Max 8Mbps (DL)/Max 2Mbps (UL)</li> </ul>
Transmit Power	<ul style="list-style-type: none"> <li>● GSM850: + 33 DBM (Power Class 4)</li> <li>● EGSM900: + 33 DBM (Power Class 4)</li> <li>● DCS1800: + 30 DBM (Power Class 1)</li> <li>● PCS1900: + 30dBm (Power Class 1)</li> <li>● LTE: + 23 DBM (Power Class 3)</li> </ul>
Communication standard	5G
Communications	WCDMA/HSPA + , LTE FDD, LTE TDD 5G Nr (SA/NSA) , Nr
Standard frequency	<ul style="list-style-type: none"> <li>● WCDMA/HSPA + : Band 1,2,5,8</li> </ul>





band	<ul style="list-style-type: none"> <li>● LTE FDD: Band 1,2,3,5,7,8</li> <li>● LTE TDD: Band 34,38,39,40,41</li> <li>● 5G NR supports SA/NSA</li> <li>● NR: N1, N281, N41, N78, N79</li> </ul>
Power rating	<ul style="list-style-type: none"> <li>● Class 3(23.5 dbm <math>\pm</math> 1.5 db) for WCDMA bands</li> <li>● Class 3(23dBm <math>\pm</math> 1.5 db) for LTE bands</li> <li>● Class 3(23dBm <math>\pm</math> 1.5 db) for NR SUB6 bands</li> <li>● Class 2(26 DBM <math>\pm</math> 1.5.DB) for B41/N41/78/79 bands</li> </ul>

### Indicator status description

Symbols	Functional definition	Indicates the status	Indicator color
Pwr	Power indication (Green)	Chang Liang	Work normally
		-	Not Normal
SIGNAL	Network status indicator (green)	Chang Liang	Work normally
		-	Not Normal
RS232	RS232 data indicator light (green)	Left green flashing	SEND data
		Right Green flashing	Receiving data
		Extinguish	Unsent
RS485	RS485 data indicator light (green)	Left green flashing	SEND data
		Right Green flashing	Receiving data
		Extinguish	Unsent
STATUS	Network signal strength indicator lamp (red)	A green light is always on	The signal is average
		Two green lights are always on	The signal is good







## Product model

Edge-a series						
Hardware platform						
A4 series	EDGE-A405-010800L	EDGE-A412-010800L	EDGE-A404-010800L	EDGE-A408-010800L	EDGE-A410-010800L	EDGE-A40W-010800L
A5 series (PLC)	EDGE-A55G-013800L	EDGE-A55G-013802L	EDGE-A54G-000800L	EDGE-A54G-000802L	EDGE-A54G-00080DL	EDGE-A54G-000801L
Memory	1G RAM					
Flash	8GB eMMC					
Interface						
Ethernet	1xWAN, 1xLAN					
	10/100/1000 Mbps RJ45					
Serial port	RS-232 x 1, DB9 line terminal interface, baud rate 2400-115200 bps, ESD 15 kv					
	RS-485 x 1,3 line terminal interface, baud rate 2400 ~ 115200bps, ESD 15KV					
Configuration	RJ45-LAN 1, RS-232					
SIM card	1x standard SIM card					
Reset function	Pinhole Reset Key					
Storage extensions	1x TF card slot, maximum 64GB					
Antenna (SMA number)	4	5	1	2	2	1
Wireless						
5G	•	•	N/A	N/A	N/A	N/A
LTE (4G)	N/A	N/A	•	•	•	N/A
WIFI	N/A	•	N/A	•	N/A	•

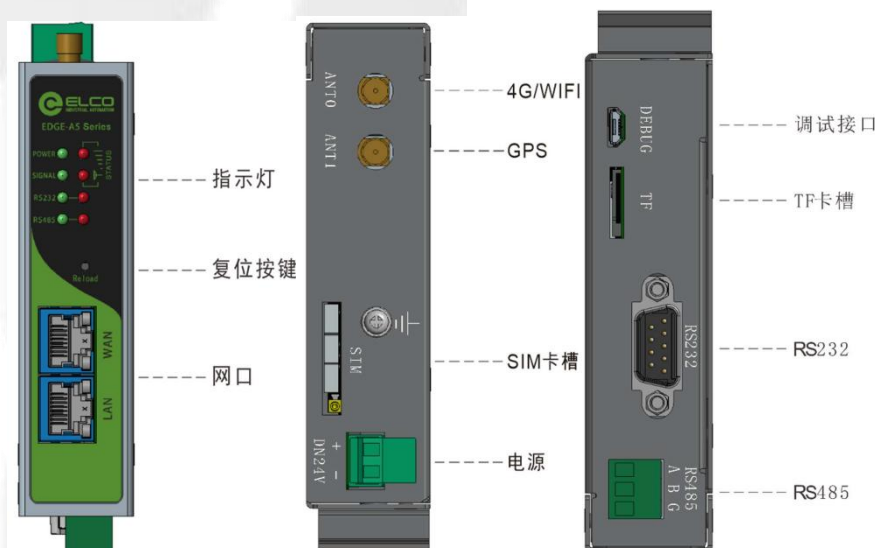




GPS	N/A	N/A	N/A	N/A	•	N/A
Machinery						
Installation mode	Wall-mounted/DIN rails					
Shell	Sheet metal shell					
Heat dissipation	Natural wind cooling					
IP protection rating	IP20					
The equipment is powered						
Power input	DC 10-30V (typical power DC24V/2A)					
Power interface	Pluggable Terminal					
Power protection	Overcurrent protection, short circuit protection, reverse polarity protection					
Working Environment						
Operating temperature	-30-60 °C (-22-140 °F)					
Storage temperature	- 40 ~ 85 °C (- 40 ~ 185 °F)					
Ambient humidity	5-95% RH@40OC/104OF has no coagulation					
Lights						
Led	Power, Status, Singal, 485,232					



## Product interface and dimensions



Product interface



Product dimensions

