Smart Gateway

Product Prensentation

Brief Introduction

LA-SmartG is a self-developed communication series product according to the needs of video management informatization in the fields of building smart city, safe city, intelligent transportation and other fields.
The product combines the monitoring characteristics of safe city, as well as the needs of future information management, increases the IoT communication technology, adopts small design, modular layout, perfect network management function and timely status display, ensures the reliability, continuity and intelligence of the entire system, complete functions, light and small. It is a preferred product in the field of domestic monitoring.

The terminal platform mainly consists of four modules:

- Main control unit: realizes the IoT gateway function
- Broadband switching unit: a cloud platform that can remotely control and configure Ethernet interfaces.
- Intelligent cabinet management (IO) unit: collecting cabinet information, such as door opening and closing, water intake, temperature and controlling necessary mechanisms - alarm indication, fan, etc.
- Power supply management unit: implements power control of other equipment, collection of power consumption information

* All of these modules are managed by the main module, and accept the unified scheduling, management and remote data visualization of the cloud platform.

Specification

| LA-SmartG-MC	Parameter
Processor	Dual-core Cortex-A7@1GHz
Communication Protocol	Integrated multi-protocol access supports transparent transport, MQTT, TCP/IP, UDP, HTTP, etc.
Maintenance	· Realize remote upgrade, maintenance, fault alarm and other remote maintenance functions · Monitor the status of the access device in real time, as well as the status of the device itself · Support remote online upgrade · Support local alarm information and remote alarm saving · Support log saving
Reliability	The embedded watchdog supports device operation self-test technology, and the equipment operation fault self-repair --- software watchdog
Temperature	Working temperature: -20~60℃ ; Storage temperature: -20~60℃
Network Management	The configuration mode supports WEB mode. Support centralized management of network management platform (MQTT protocol) to query device status in batches
Main Control Module	Support GPS, 4G/WiFi, one 10/100Mbps RJ45 interface, support MDI/MDIX, type-c local debugging port, 1 RS232/two RS485 serial ports, reset button. The power supply adopts DC24V access, and the power supply supports anti-reverse connection (only the main control module)
Swap Module	Interface type and quantity: A single module supports 1 100 Gigabit optical port and 4 10/100Mbps interfaces. Support interface management, VLAN partitioning, MAC address management, flow control, and jumbo frames

Specification

| LA-SmartG-MC	Parameter
Power Module	· 1 x DC12-DC48V input, 6 x DC12-DC48V outputs · 1 x AC24V input, 6 x AC24V outputs · Voltage, current and power detection display
IO Module	· DI input terminals: box door status detection 1ch, water ingress status detection 1ch, lightning strike count detection 1ch, lightning protector status detection 1ch, reclosing communication 1ch · DO output terminals: box alarm indicator 1ch, box running indicator 1ch, fan output control 1ch, box LED light 1ch, heater controls 1ch · Power supply adopts DC24V access

Configuration Table

Module	Options & Quantities
Main Control Module	Required
Swap Module	Optional, up to 2 modules are supported
Power Module	Optional, up to 4 modules are supported
IO Module	Optional, IO pin function can be customized for development

Pin	Description	Pin	Description	Pin	Description
R-	System LED 1-	COM1	Reserved Relay (COM) supports 220VAC	T+	Lightning protector remote signal input +
A-	System LED 2-	NC/NO1	Reserved Relays (NC/NO)	T-	Lightning protector remote signal input -
R+&A+	System LED +	COM2	Heating relay (COM) supports 220VAC	k+	Lightning strike count signal input +
F+	Fan output +	NC/NO2	Heating relays (NC/NO)	k-	Lightning strike count signal input -
F-	Fan output -	SO	Reclosing SO	D+	Door status detection signal +
L-	LED light output in the box -	GND	Reclosing GND	D-	Door status detection signal -
L+&S+	LED light output in the box +&The alarm strobe light output +	A/RX	Reclosing communication RS485A or RS232RX	I+	Water ingress detection signal +
S-	Alarm strobe light output -	B/TX	Reclosing communication RS485B or RS232TX	I-	Water ingress detection signal -

System Configuration

Up to 2

Expansion Module

Up to 5

GPS/LORA Antenna
4G/5G Antenna

Main Cotrol Module

USB for Easy Bring-up

Ethernet x4
RS485/232x2 Groups

Ethernet x1

SFPx1

Manual Power Switch

Smart Cabinet Management Port Input/Output

Isolated Input/Output
Switch Quantity x2
24VDC IN Terminal

6-CH Low Voltage
Power Supply Control
Energy Metering and Statistics
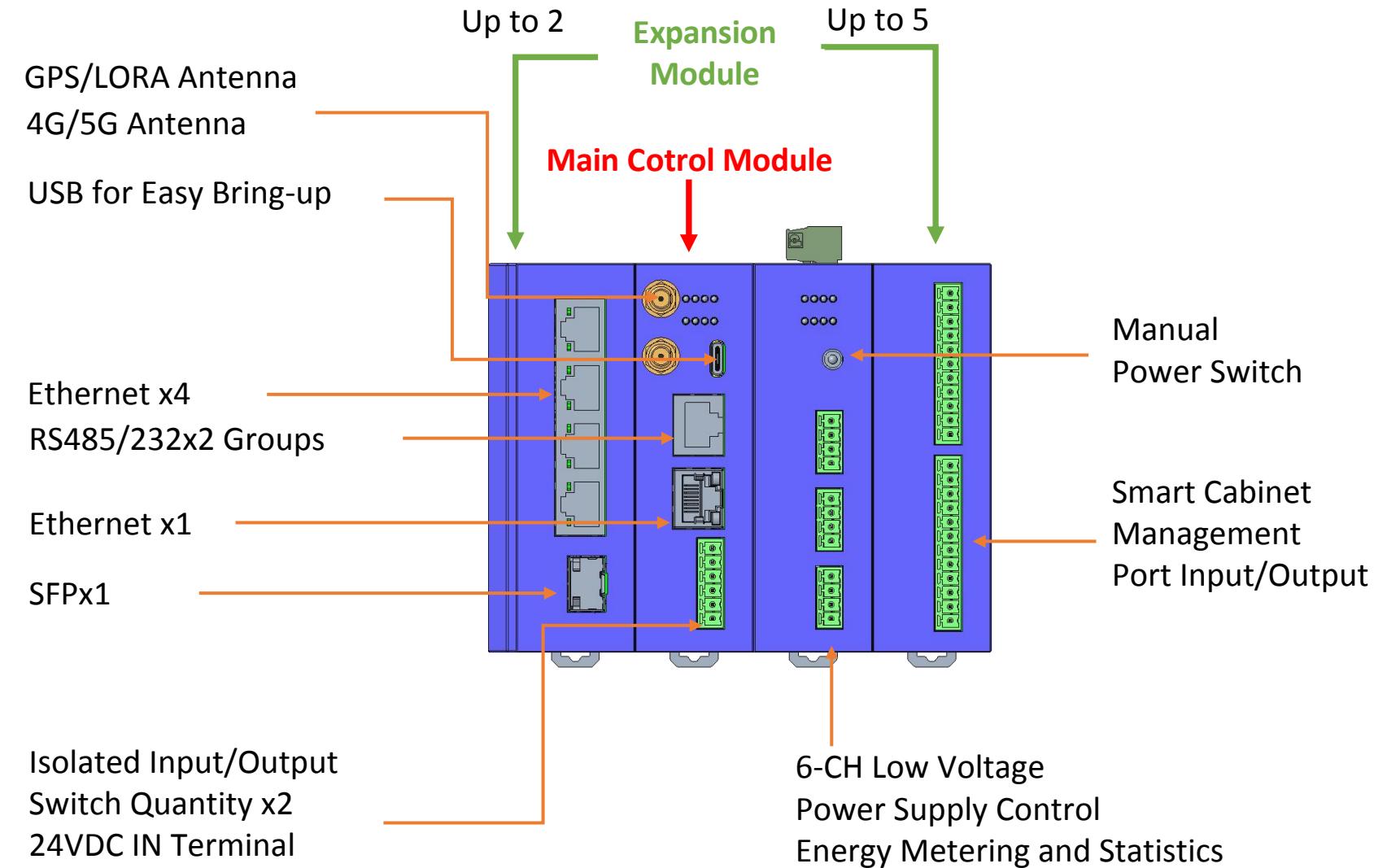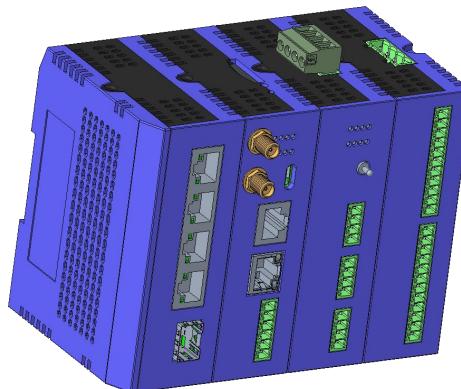
Standard Configuration Size

135mm

105mm

30mm

80mm
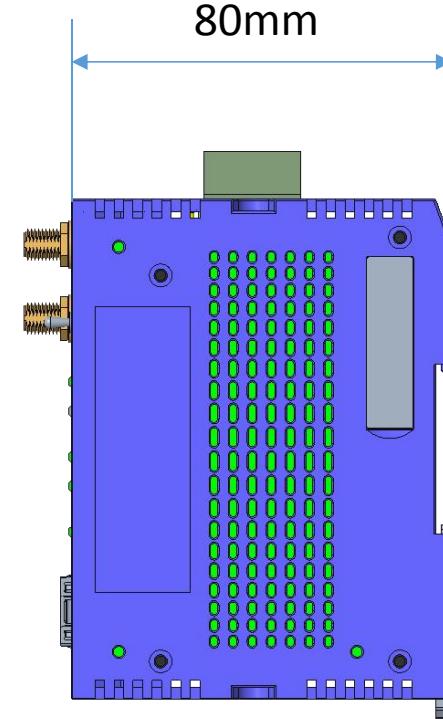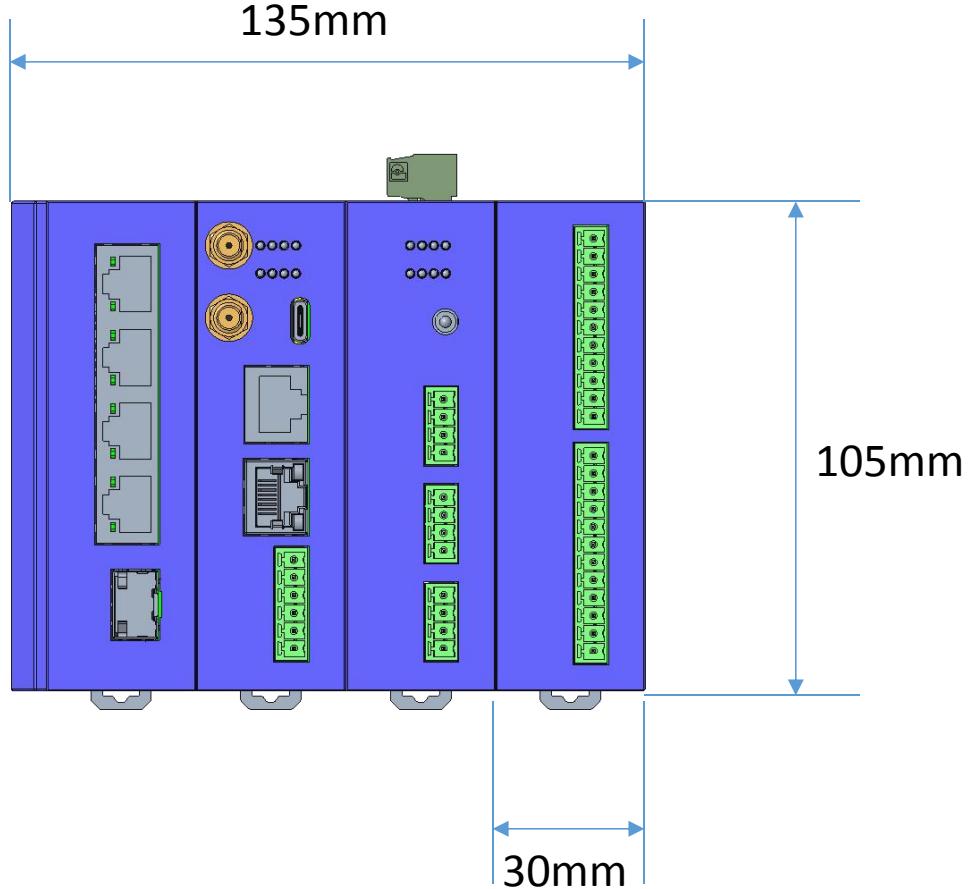
Main Module Features

- Support 2 on the left, 5 on the right, expansion up to 7 modules

- Built-in temperature or temperature/humidity detection

- Support module auto-discovery

- Support module auto-configuration

- Built-in large-capacity energy storage capacitor to ensure that data is not lost when the system is powered off

- RS232/485 auto adaptation

- Industrial-grade interface protection

- Power supply directly from the debug port (When connecting USB to computer, 24VDC can not be powered on.)

Main Control Module

SMA Antenna 1: Applied to GPS/Lora

SMA Antenna 2: Applied to 4G

RS485/232

Indicator x8

USB TYPE-C: Debug & On-site Maintenance

10/100Mbps uplink network port
(Not available when there is a broadband switch module on the left, directly connected to the broadband module internally)

Main Power Supply & 2CH IO

3 levels of wireless signal   **4G Link**

Serial Comm1   Serial Comm2   RUN   Alarm

Pin	Signal
8	RS232-GND
7	RS232-TX
6	RS232-RX
5	NC
4	RS485-B2
3	RS485-A2
2	RS485-B1
1	RS485-A1

Pin	Signal	Direction
1	Isolation 24V	Input
2	Isolation IO-1	Two-way
3	Isolation IO-2	Two-way
4	Isolation GND	Input
5	24V Main Power+	Input
6	24V Main Power-	Input

Power Module Specification

| LA-SmartG-PM	Type A	Type B
Number of Management Channels	6CH	2~3CH
Voltage Control Capability	24~48VDC or 24VAC	220VAC
Different Voltage Automatic Adaptation	Support	Not Involving
Energy Metering	Independent Per Channel	Independent Per Channel
Overcurrent Protection	Support Independent Per Channel	Support Independent Per Channel
Indicator Light	Support	Support
Input Voltage Detection	Support	Support
Flow Capacity	Each Channel 3A@12/24，2A@36/48	
Load Power/Channel	About 60W	
Measurement Accuracy Error	<2%	<2%
Installation Method	35mm Industrial Din-rail	35mm Industrial Din-rail

Power Management Module Type A

DC: 12~ 48V
AC: 24V

Input Controlled Power

Various Power Indicator Lights and Alarms

Power Supply 1   2   3   4

Power Supply   4   6   Run   Warning

Module On-site Power Off
Use the Switch manually

If there is a power outage on site, the warning light will be on, so does the platform.

Output Power: 1 & 2

Output Power: 3 & 4

Output Power: 5 & 6
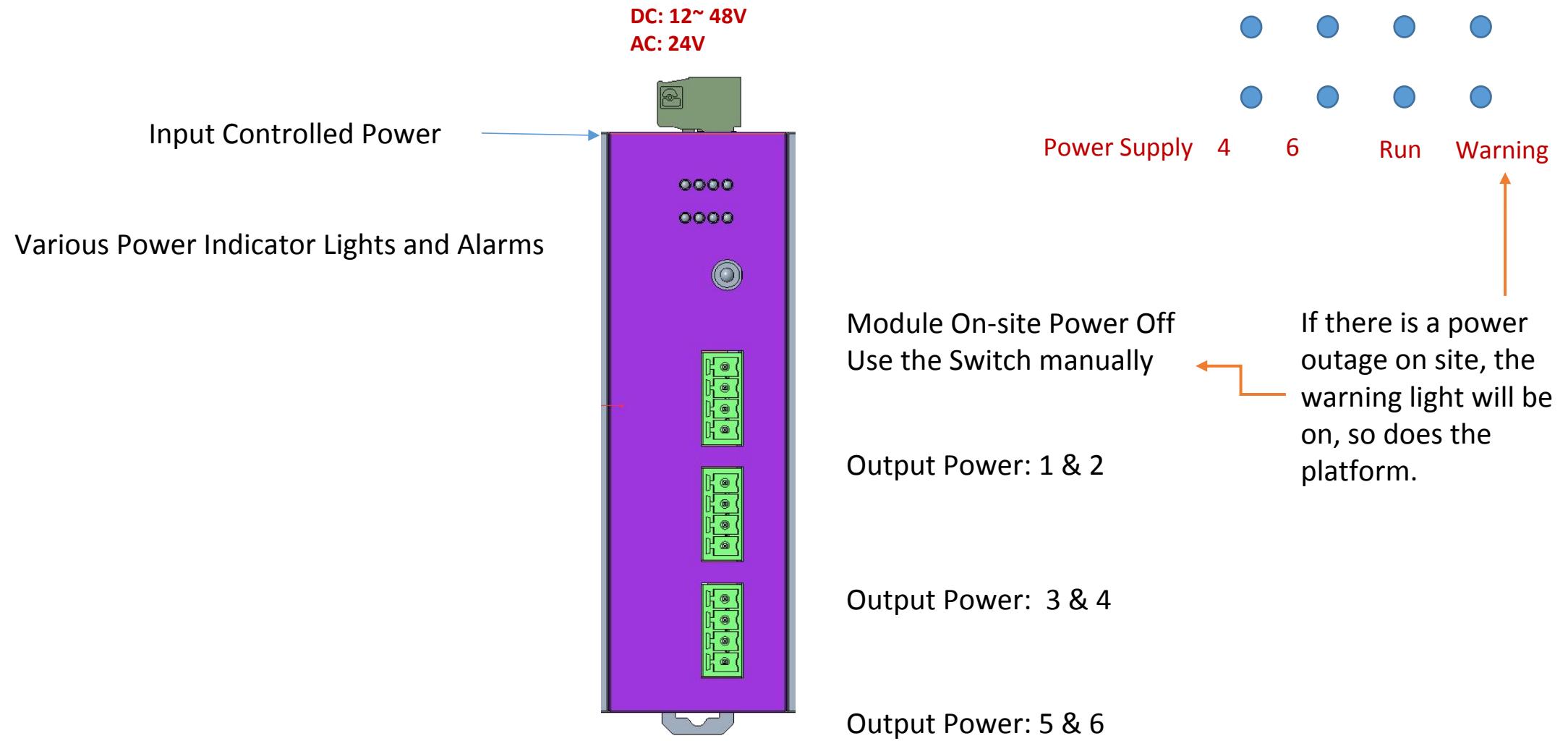
Smart Box Management Module Specification

LA-SmartG-SBM	Parameter	Note
Auto-recloser Communication	Support	
Lightning Arrester Remote Signaling	Support	
Lightning Strike Count	Optional	
Smart Fan Control	Support	
Immersion Detection	Optional	
Door Open Detection	Support	
Internal Lighting	Support	
Strobe Warning Light	Support	
Automatic Heating	Optional	
Running Light	Support	2
Reserved Relay	Support	2, Stay Open/Closed Optional
Installation Method	35mm Industrial Din-rail	

Smart Box Management Module

Pin	Description
1	Cabinet Light 1-
2	Cabinet Light 2-
3	Cabinet Light Public+
4	Fan Output+
5	Fan Output-
6	Illuming & Warning Strobe Lamp Common Output+
7	Illuming Lamp Output-
8	Alarm Strobe Light Output-
9	Heating Relay（COM）Support 220VAC
10	Heating Relay（NC/NO）
11	Reserved Relay（COM）Support 220VAC
12	Reserved Relay（NC/NO）

Note: The terminal is the upper 11P, the down 12P, to prevent reverse insertion during maintenance
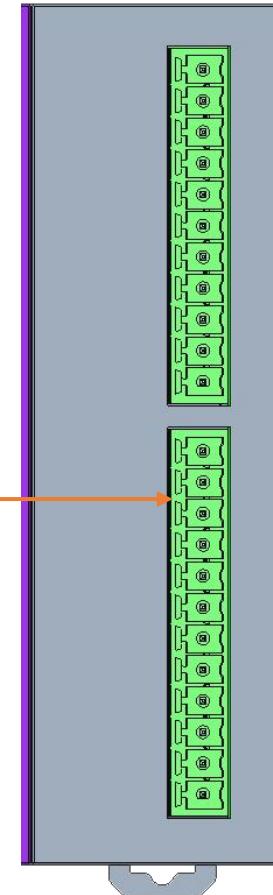
Pin	Description
1	Recloser SO
2	Recloser GND
3	Recloser Communication RS485A/RS232RX
4	Recloser Communication RS485B/RS232TX
5	Lightning Arrester Remote Signal Input+
6	Lightning Arrester Remote Signal Input-
7	Lightning Strike Count Signal Input+
8	Lightning Strike Count Signal Input-
9	Door Open Detection Signal
10	Incoming Water Detection Signal
11	Door opening and water ingress detection in Common Ground

* The common ground is that the two detected ground wires are screwed to P11

Broadband Switch Module Specification

LA-SmartG-BS	Parameter	Note
Copper	4 * 10/100/1000Mbps	
SFP	1	
Port Status Monitoring	Support	
Port Enable Control	Support	
Device Access Authentication	Support	Black and White List
Port Remote Configuration	Support	
Installation Method	35mm Industrial Din-rail	

Broadband Switch Module
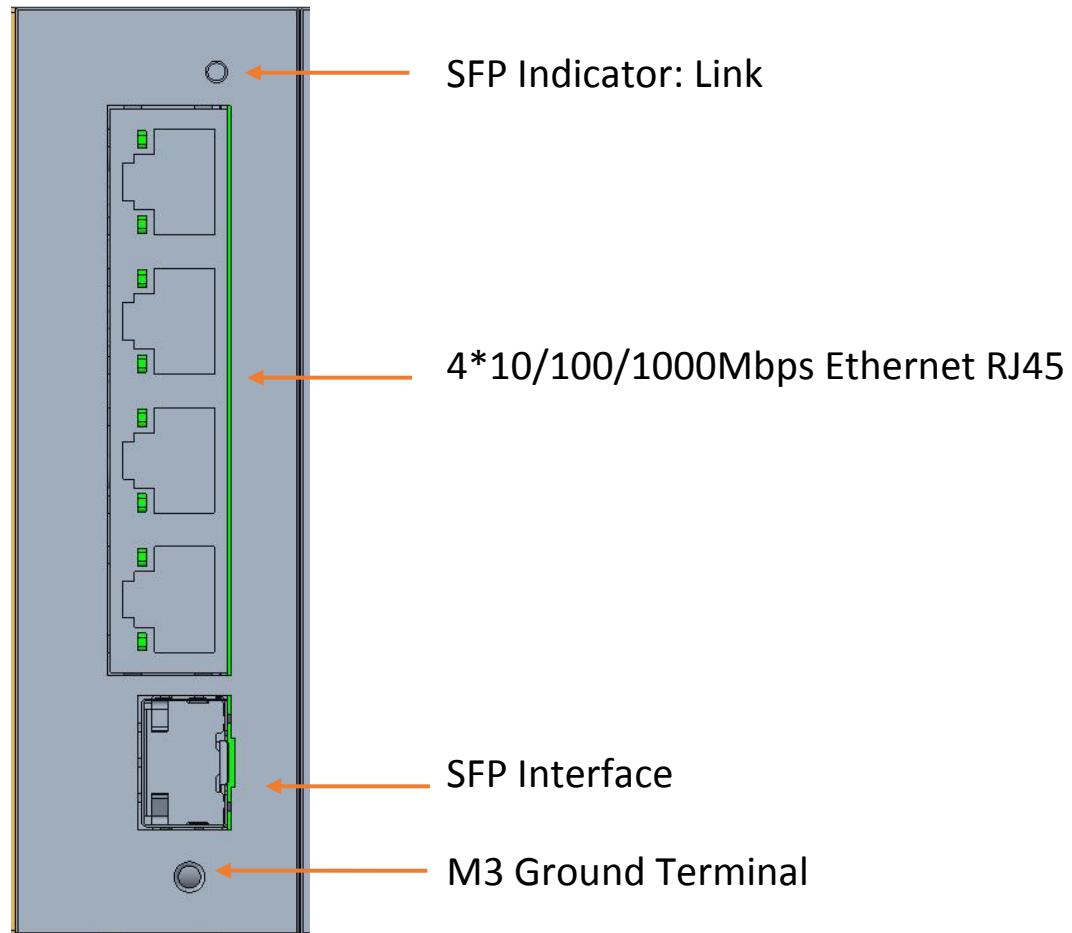
Leftmost End Cap
Protection Expansion Interface
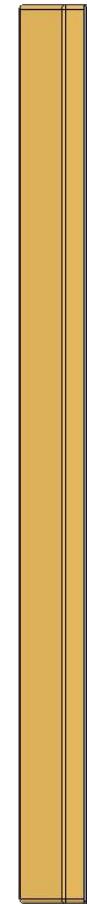
SFP Indicator: Link

4*10/100/1000Mbps Ethernet RJ45

SFP Interface

M3 Ground Terminal

Smart Box Management Platform
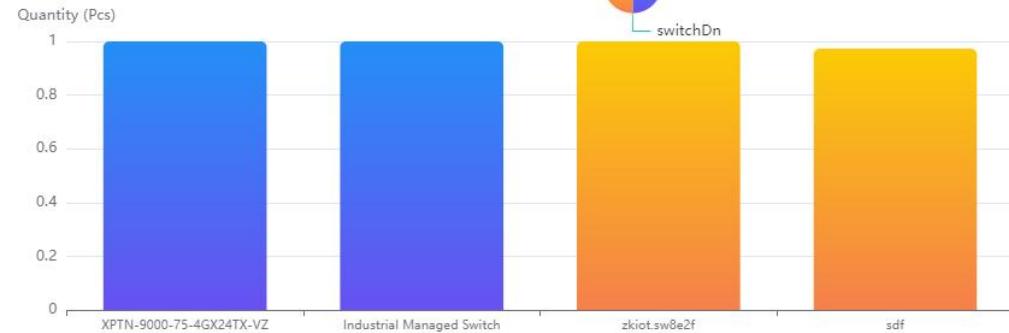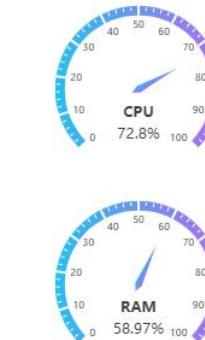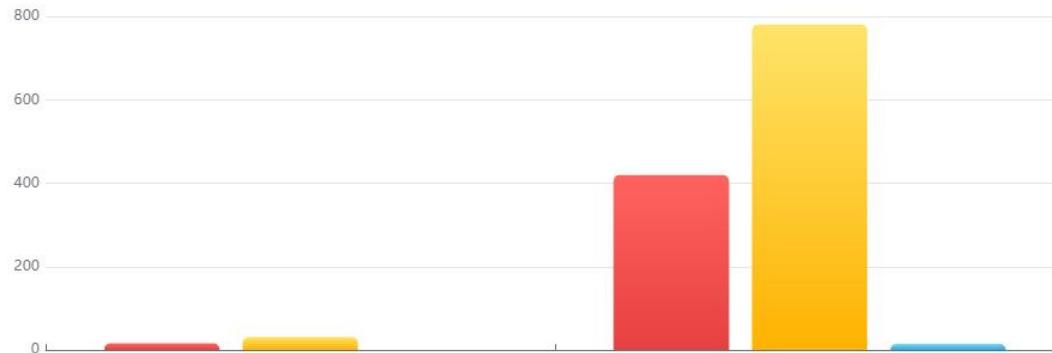
THANK YOU

Lanao Communication