LGW915M LoRaWAN Type III Outdoor Gateway

Quick Start Guide

1. Product Overview

1.1 What Is This Product?

The LGW915M is an outdoor IoT gateway built on LoRaWAN® low-power wide-area network (LPWAN) technology. It integrates Semtech's high-performance SX1302 8-channel transceiver, supports full-duplex operation, and can serve thousands of end-node devices simultaneously.
Housed in an IP67-rated water- and dust-resistant enclosure, the gateway is well suited for reliable network coverage in demanding outdoor environments.
The gateway uploads data to the cloud via 4G or wired Ethernet. It is compatible with mainstream LoRaWAN network servers (such as ChirpStack and The Things Stack), and can also work with the built-in network server (NS) or third-party IoT platforms, so you can deploy your own IoT applications quickly and flexibly. In this guide, the gateway is used with the AdoModel LoRaWAN NS cloud platform (http://adomodelcloud.com:4560/).

Key features at a glance:
• 8-channel full-duplex LoRaWAN — Semtech SX1302 transceiver, thousands of end nodes
• IP67 protection — water- and dust-resistant for outdoor deployment
• Flexible backhaul — 4G or wired Ethernet
• Open ecosystem — works with mainstream LoRaWAN network servers, built-in NS, or third-party IoT platforms

Regulatory Compliance

FCC ID: 2BWC6LGW915M

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: -Reorient or relocate the receiving antenna. -Increase the separation between the equipment and receiver. -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. -Consult the dealer or an experienced radio/TV technician for help.
FCC Radiation Exposure Statement: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

1.2 Where the Gateway Fits in Your System

The gateway is one link in a complete data chain. Figure 1 shows a typical AdoModel IoT deployment and the role of each component.

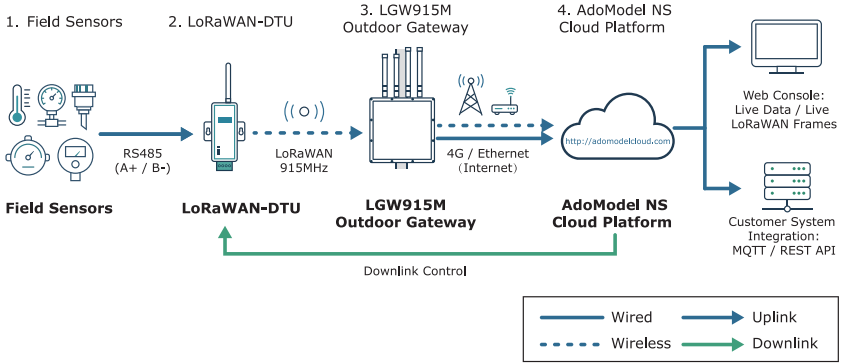


Figure 1 System architecture of a typical IoT deployment

How data flows through the system:

- **Uplink:** field sensors report their readings over an RS485 cable to a LoRaWAN-DTU, which packages the data into LoRaWAN frames and transmits them over the air. The gateway receives these radio signals and forwards them — via 4G or wired Ethernet — to the cloud, where the AdoModel LoRaWAN NS platform decodes them into application data.
- **Downlink:** commands sent from the platform travel the reverse path. The gateway transmits them over the air to the DTU, which outputs them through its RS485 port to the sensor or controller.

The role of each component:

Component	Role in the System
Field Sensor	Measures physical quantities (temperature, pressure, flow, etc.) and outputs data through its RS485 interface.
LoRaWAN-DTU	The translator between sensors and the wireless world: converts RS485 data to LoRaWAN radio frames, and vice versa.
LGW915M Gateway	The relay station between wireless and the Internet: receives LoRaWAN radio frames from end nodes and forwards them to the cloud over 4G or Ethernet.
AdoModel LoRaWAN NS Platform	The brain of the network: manages gateways and devices, decodes application data, and provides web console, downlink control, and MQTT / REST API integration.

The gateway itself never interprets your sensor data — it simply relays LoRaWAN frames. All intelligence (decoding, device management, integrations) lives in the NS platform. This separation is what allows one gateway to serve thousands of heterogeneous devices.

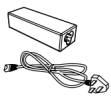
1.3 What This Guide Helps You Accomplish

This guide walks you through everything needed to get a single gateway from the box to a working connection with the AdoModel LoRaWAN NS platform. Follow the chapters in order; by the end you will have:

- unpacked and verified the shipment (Chapter 2);
- installed the antennas, SIM card (optional), and mounting hardware (Chapters 3–4);
- powered the gateway and connected it to the Internet via Ethernet , 4G or Wi-Fi (Chapter 5);
- opened the gateway web console and verified its platform connection settings (Chapters 6–7);
- seen the gateway appear online on the AdoModel LoRaWAN NS platform (Chapter 8);
- learned what the platform can do for you once the gateway is online (Chapter 9).

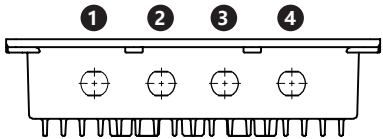
If anything does not work as described, turn to Chapter 10 (Troubleshooting).
Connecting end-node devices (e.g., a LoRaWAN-DTU with sensors) to the network is covered in a companion document, the LoRaWAN-DTU Quick Start Guide.

2. Packing List

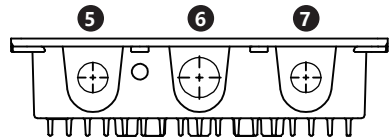
					
LoRaWAN Type III Outdoor Gateway	POE and POE Power Cord 1	Network Cable 1	Micro USB Cable 1	Right Angle Steel Plate Accessories & Screws 1	
					
Fiberglass Antenna (Half-duplex 4 / Full-duplex 5)	Antenna Extension Cable (Half-duplex 1 / Full-duplex 2)	Lightning Protector 2	POE Connection Cable External Connector Cap 1	Wrench 1	Certificate of Conformity and Quick Installation Manual

3. Interfaces

Before installation, familiarize yourself with the gateway's connectors. Figure 2 shows the interface layout and the definition of each interface.

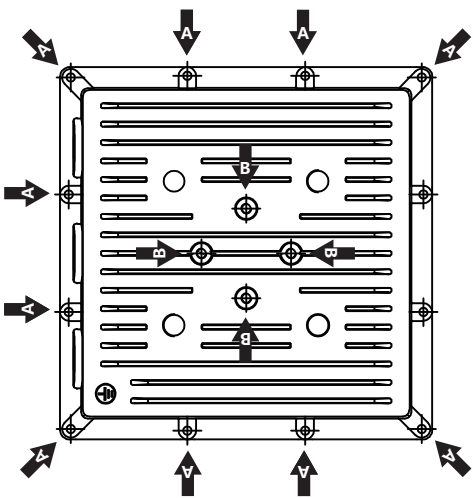


Number	Interface Definition
1	4G MAIN Antenna
2	WIFI Antenna
3	LORA TRX Antenna
4	LORA RX Antenna (for full-duplex use)



Number	Interface Definition
5	4G DRX Antenna
6	SIM Card Installation Interface & SIM Card Slot
7	POE Network Cable Port (Data + Power)

Figure 2 Interface layout



A The bottom stud holes are for connecting the top housing tothe device body. A total of 12 screws. After removing them,the top cover can be opened for device maintenance.

B Structural mounting screw holes. A total of 4 screws for easyBfixing of the device to other installation locations.

4. Installation

Install the accessories in the order below. No special tools are required beyond the supplied wrench.

The gateway does not support hot-swapping. Always power off the device before inserting or removing the SIM card.

4.1 Installing the SIM Card (4G backhaul only)

Skip this section if you will use Ethernet or Wi-Fi backhaul.
1.Twist open the SIM card plug on the side/bottom of the enclosure.
2.Insert the SIM card into the slot according to the indicated position, with the metal contacts facing downwards.
3.To remove the card later, press and slide the clip on the right side of the SIM card slot.

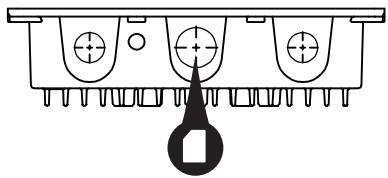


Figure 3 SIM card installation

4.2 Installing the Antennas

Install the corresponding antennas according to the hardware layout (Figure 2).
• **4G MAIN / 4G DRX / Wi-Fi antennas:** screw the antenna into the interface and try to point it upwards.
• **LoRa antennas (LORA TRX and, on full-duplex models, LORA RX):** if a long fiberglass antenna is used, an N-type male to N-type male feeder (extension) cable is required for connection, as shown in the installation diagram. A long LoRa antenna requires a patch cable for connection.

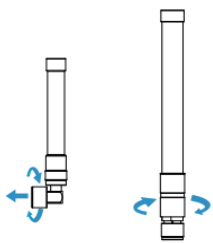


Figure 4 Antenna installation

WARNING: Never power on the gateway with a LoRa antenna port left open — transmitting without an antenna may damage the radio front end.

4.3 Connecting the Ethernet Cable

1. Pass the network cable through the waterproof gland (rubber gasket, bolt, and nut).
2. Connect the cable to the gateway's POE network port.
3. Screw the gland onto the device and tighten it to maintain the IP67 seal.

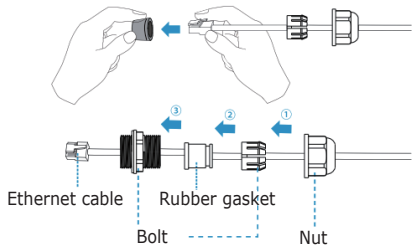


Figure 5 Waterproof gland assembly: ethernet cable, rubber gasket, bolt, nut

4.4 POE Wiring

Connect the ethernet cables and power cord to the corresponding ports on the POE power supply according to the port labels:

- PoE port → ethernet cable (data + power) → gateway POE network port
- LAN port → ethernet cable (data only) → switch / router
- Power input → power cord → power outlet (AC 100–240 V)

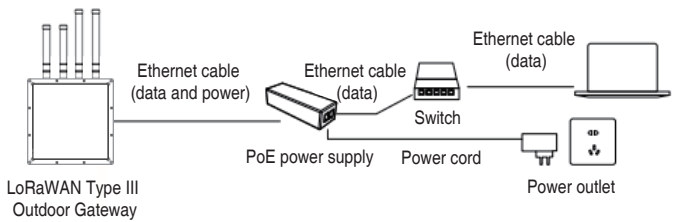


Figure 6 POE connection diagram

4.5 Mounting with the Right-Angle Steel Plate

The supplied right-angle steel plate allows the gateway to be fixed to a wall, pole bracket, or other structure. Fix the plate to the gateway's structural mounting screw holes (4 screws), then secure the assembly at the installation location using appropriate hardware for the surface.



Figure 7 Right-angle steel plate mounting diagram

NOTE: The antennas used with this transmitter must be installed to provide a minimumsepara-tion distance of at least 20 cm from all persons.

5. Power On & Network Backhaul

This chapter powers the gateway up and connects it to the Internet. The gateway supports three backhaul options:

Backhaul	Best for	What to do
Ethernet (recommended)	Fixed installations with a wired network available	Just complete the POE wiring of Section 4.4 — the gateway obtains an IP address automatically (DHCP). No further configuration is needed.
4G (cellular)	Sites without wired network access	Install the SIM card (Section 4.1) and the 4G antennas (Section 4.2). The modem dials up automatically after power-on.
Wi-Fi	Sites with an existing Wi-Fi network	Power on with the Wi-Fi antenna installed, then configure the Wi-Fi connection on the gateway web console (Chapter 6 → Network settings).

5.1 Powering On

Complete the installation steps of Chapter 4, then:
1. Check that both LoRa antennas (LORA TRX and LORA RX on full-duplex models) are connected.
2. Connect the gateway to the POE power supply (data + power cable), or verify it is already connected.
3. Plug the POE power supply into an AC 100–240 V / 50-60Hz outlet.

NOTE: For 4G backhaul, make sure the SIM card was inserted (power off → insert → power on) and that the 4G antennas are attached before power-on.

5.2 Post Power-On Checks

✓ The POE power supply indicator is lit.
✓ The ethernet cable is firmly seated at both the gateway and the POE power supply.
✓ If troubleshooting is ever needed later, the network indicator blinks when the ethernet link is active.

Once powered and connected to the Internet, the gateway automatically starts sending data to the NS platform. In a good network environment the gateway comes online within 1–3 minutes of power-on (up to ~5 minutes). You will verify this on the platform in Chapter 8, after checking the web console settings in Chapters 6–7.

6. Accessing the Gateway Web Console

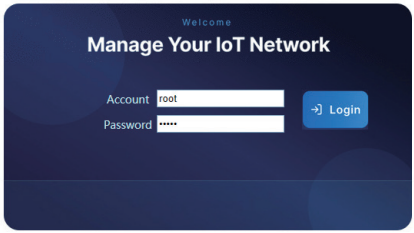
The gateway is managed through a built-in web console. There are four ways to reach it:

- **Option 1 — USB connection:** connect directly to the gateway with the supplied Micro USB cable. Works even before the gateway has any network set up.
- **Option 2 — Ethernet via your LAN:** connect the gateway to your router or switch and look up its IP address with the supplied LoraGW_IPScan tool.
- **Option 3 — Direct Ethernet connection (server mode)**: plug your computer straight into the gateway's ethernet port; the gateway assigns an IP address to the computer automatically. No network infrastructure or extra tools needed.
- **Option 4 — Remote access via the CMP platform:** if the gateway is already online, open its web console remotely through the AdoModel IoT Management Platform (CMP) without going on site.

6.1 Option 1: USB Connection

1. Locate the Micro USB port below the SIM card holder on the gateway.
2. Use the supplied Micro USB cable to connect the gateway to your computer.
3. Open a web browser on the computer and enter the default gateway address:
   http://192.168.0.100:8088

The web console login page appears (Figure 8).



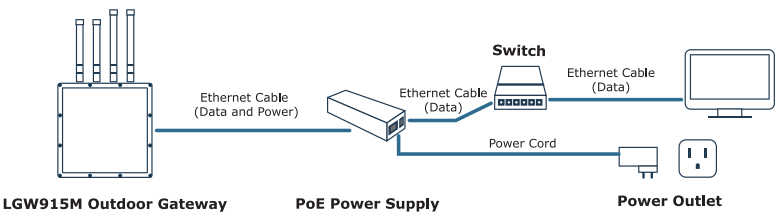
Default value
Username/Password: root/admin

Figure 8 Gateway web console login page

6.2 Option 2: Ethernet via Your LAN

Use this method when the gateway is (or will be) installed on a local area network with a router or switch — the typical case for Ethernet-backhaul installations.

1.Connect the gateway's ethernet port to an available LAN port (for outdoor gateways: the ethernet/LAN port of the POE adapter), and the POE uplink to your router or switch.



2.Make sure the network has DHCP enabled — the gateway obtains its IP address automatically by default.

3.Power on the gateway and wait about 40 seconds for it to finish booting and obtain an IP address.

4.On a computer connected to the same LAN, open the supplied LoraGW_IPScan tool to find the gateway's IP address.

5.Enter the IP address followed by port 8088 in a browser — for example, if LoraGW_IPScan reports 172.16.10.107, enter: **http://172.16.10.107:8088**

NOTE: LoraGW_IPScan can be downloaded from www.adomodeltech.com or obtained from your account manager.

NOTE: After logging in, you can switch the gateway to a static IP on the web console (Network → Ethernet) to suit your network environment.

6.3 Option 3: Direct Ethernet Connection (Server Mode)

Use this method when you want to configure the gateway with a single computer and no router, switch, or search tool.
1.Using the supplied ethernet cable, connect your computer's network port directly to the gateway's ethernet port (for outdoor gateways: the ethernet port of the POE adapter).
2.Power on the gateway and wait about 3 minutes. The gateway automatically assigns an IP address to your computer.
3.Once the computer has obtained a valid IP address, open a browser and enter the server-mode address: **http://192.168.100.105:8088**

> NOTE: The server-mode IP address can be customized on the web console (Network → Ethernet). Do not set the last octet of the server-mode IP into the .240–.250 range — those addresses are reserved for the gateway's internal DHCP pool.

6.4 Option 4: Remote Access via the CMP Platform

> NOTE: This option requires the gateway to be already connected to the Internet (4G, Ethernet, or Wi-Fi) and shown as Online in CMP.

1.Log in to the AdoModel IoT Management Platform (CMP): http://adomodelcloud.com/ (account provided by your account manager).
2.Click "Device Management" to expand the menu, then click "Group".
3.Enter the gateway ID (IMEI) in the search box and click "Search" .
4.Click "View" on the found device.
5.Under the operation column, click "Remote Configuration"(Figure 9).
6.Confirm the device status is "Online", then click "Enable Remote Connection". Wait until a dialog confirms success and shows the "Open Configuration Page" and "Close Remote Connection" buttons.
7.Click "Open Configuration Page" — the gateway web console login page opens.

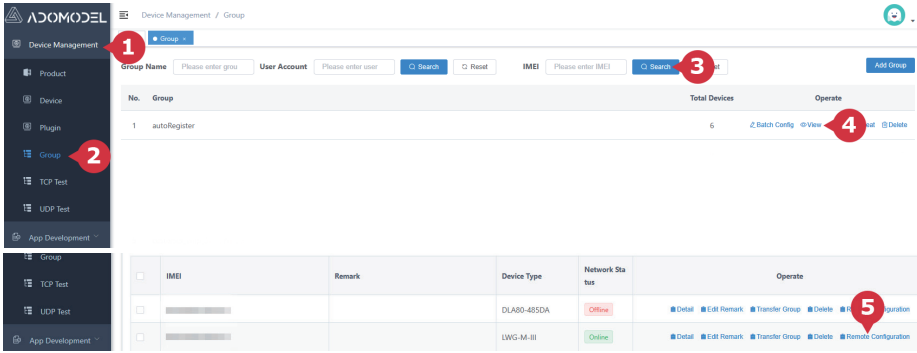


Figure 9 Remote Configuration in CMP

7. Connecting to the AdoModel Platform

The gateway is factory-configured for the North American band (US915) and for the AdoModel LoRaWAN NS platform. In most cases you do not need to change anything on this page — just verify that the settings match the table below.

7.1 Verifying the NS Settings

1.Open the gateway web console (Chapter 6).
2.Go to "LoRaWAN Management" → "Parameter Config" .
3.Verify the following values:

Setting	Expected value (North America)
NS server address	adomodelcloud.com
Uplink port	915
Downlink port	915
Band	US915 (US_902-928)
Frequency points	0–7

NOTE: If any value differs, correct it, click "Application" to save, then reboot the gateway for the change to take effect.

7.2 Using a Different Network Server

If you operate your own LoRaWAN network server (e.g., ChirpStack or The Things Stack), enter its address and ports on the same page. Frequency-plan customization is beyond the scope of this guide — see the companion Gateway Web Configuration Guide and the LoRaWAN band / custom frequency-point reference.

8. Verifying the Gateway Is Online

8.1 Log In to the NS Platform

1.Open http://adomodelcloud.com:4560/ in your browser.
2.Log in with the account provided by your account manager.

NOTE: If your gateway has not yet been registered on the platform, follow the registration procedure described in the companion **LoRaWAN-DTU(LGW-M) Quick Start Guide**, or contact your account manager.

8.2 Check the Gateway Status

1.Click the "Gateway" tab on the left side.
2.Enter the gateway MAC ID in the "Search" box and locate your gateway (Figure 10). If it does not exist, click the "CREATE" button in the upper left corner to create it.

NOTE: Gateway ID entry rule: if the MAC ID on the gateway label has 15 digits, append a "0" at the end to make 16 digits before entering it on the platform. For example, if the label ID is 866999***7 (15 digits), enter 866999***70 (16 digits) on the platform.

3.Check the status dot:

- **Green dot —** the gateway is online and connected to the platform. You are done with this guide's setup path; continue to Chapter 9 to learn what the platform offers.
- **Red dot —** the gateway is offline. After power-on (or a new registration), the gateway typically comes online within 1–3 minutes in a good network environment, and within about 5 minutes at

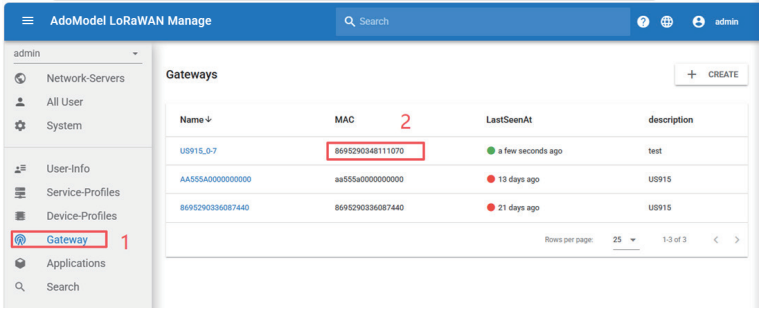


Figure 10 Gateway list on the NS platform — green dot indicates online

8.3 Alternative Check via CMP

You can also confirm that the gateway has Internet access from the CMP platform (http://adomod-elcloud.com/): search the gateway ID as described in Section 6.4; an "Online" status means the backhaul link works. If the gateway is online in CMP but offline on the NS platform, re-check the NS settings of Chapter 7.

9. What the Platform Can Do for You

Once your gateway is online, the AdoModel LoRaWAN NS platform is your window into the network. Highlights:

- Applications & device management — organize end-node devices into applications; register devices, manage activation keys (OTAA), and monitor device status.
- Live Data — view decoded application data from your devices in real time.
- Live LoRaWAN Frames — inspect raw LoRaWAN protocol frames (e.g., JoinRequest / JoinAccept) for network debugging.
- Downlink control — send commands to devices from the platform (e.g., through the downlink tool).
- Integration — retrieve your data via standard RESTful APIs and MQTT subscriptions for custom application development.

A quick end-to-end walkthrough — registering the gateway and a LoRaWAN-DTU node, and testing uplink/downlink data — is provided in the companion LoRaWAN-DTU Quick Start Guide. The complete platform documentation is available separately (AdoModel NS Platform User Guide).

Troubleshooting

Symptom	Possible cause	What to do
Web console page will not open (USB)	Cable not seated; wrong address; browser cache	Re-seat the Micro USB cable; confirm the address http://192.168.0.100:8088; try another browser or clear the cache.
Web console page will not open (CMP remote)	Gateway not Online in CMP	Remote configuration only works when the gateway has Internet access. Use a local method (USB 6.1, LAN 6.2, or direct ethernet 6.3) instead.
Login fails	Wrong credentials	Use the defaults root / admin. If the password was changed and lost, restore factory settings or contact support.
Gateway never comes online on the NS platform	No backhaul link; wrong gateway ID on the platform; NS settings mismatch	1) Check that the ethernet/4G link works (CMP status, Section 8.3). 2) Compare the gateway ID on the platform with the label on the device. 3) Verify the NS settings (Chapter 7). 4) Power the gateway off for about 15 seconds and power it on again. Note: the network indicator is inside the enclosure.
4G backhaul does not connect	SIM not detected; no data plan; weak signal	Power off, re-insert the SIM (contacts facing down), power on; confirm the SIM has an active data plan; attach both 4G antennas and check signal coverage at the site.

For further assistance, contact your agent or sales representative, or visit www.adomodeltech.com.

Appendix A: Specifications

Key specifications of the gateway (from the LGW-M-III Product Specification; refer to the full specification sheet for details):

Item	Specification
Processor	ARM Cortex-A7
Storage	NAND + LPDDR2 (4 Gb + 2 Gb)
LoRaWAN channels	8
Frequency band	LoRaWAN US915, LTE FDD B2/4/5/12/17
Receiving sensitivity	-143 dBm
Transmission power	Max. 30 dBm
LoRaWAN antenna	2× N-type female connectors, external antenna, 50 Ω
LoRaWAN protocol	V1.0.4 and V1.0.2, Class A / C
Ethernet port	1× 10/100/1000 Mbps (802.3af PoE)
Cellular network	2× LTE external antennas (main + diversity), 50 Ω
SIM port	1 (Nano SIM)
Other interfaces	Micro-B debug interface ×1; Network indicator
Power supply	802.3af standard PoE
Power consumption	Avg. 3.4 W; peak 5 W
Protection level	IP67; flame-retardant grade V0; aluminum casing
Operating temperature	-40 °C to +85 °C
Storage temperature	-50 °C to +100 °C
Relative humidity	10%–90% RH, non-condensing
EMC protection	Contact discharge 4 kV; air discharge 8 kV
Installation	Wall-mounted or pole-mounted

Appendix B: Default Parameters

Parameter	Default value
Web console address (USB)	http://192.168.0.100:8088
Web console address (direct ethernet, server mode)	http://192.168.100.105:8088
Web console username / password	root / admin
Ethernet mode	DHCP (IP lookup via supplied search tool)
NS server address	adomodelcloud.com
NS uplink / downlink port	915 / 915
Band / frequency points	US915, points 0–7
NS platform web address	http://adomodelcloud.com:4560/
CMP platform web address	http://adomodelcloud.com/

Related Documents

- **LoRaWAN-DTU(LGW-M) Quick Start Guide** — end-to-end system setup: gateway + DTU node + platform, uplink/downlink testing.
- **LGW-M/LGW-L Gateway Web Configuration Guide** — complete reference for the gateway web console (advanced network, LoRaWAN, and system settings).
- **AdoModel LoRaWAN NS Platform User Guide** — complete reference for the NS platform.

Lightning Surge Arrester Installation Guide

Model: YPDP-N/JK/6G

1 Wiring Rules

① Install in series between antenna and gateway

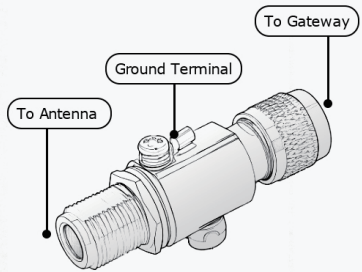
Arrester must be installed before the feeder cable enters the equipment room

② Ensure good grounding

Ground wire as short and straight as possible, grounding resistance < 10 Ω

③ Ground terminal must be grounded

The arrester does not work without grounding



Overall length:	69 mm
Frequency:	0-6000 MHz
Impedance:	50 Ω

2 Specifications

Insertion Loss
≤ 0.3 dB

IP65

VSWR
≤ 1.25

Discharge Current
20 kA

Peak Power
200 W