



# ZETA<sup>®</sup> Low-Power Wide Area Networks

**ZETA AP**

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## 1. Product Description

ZETA AP is the gateway between the ZETA wireless network and the ZETA Server. All interactions between the devices in ZETA network and the ZETA Server are done through the AP. AP communicates with the rest of ZETA network devices via the ZETA protocol, and communicates with the ZETA Server via the standard IP protocol. ZETA AP supports multi-channel two-way communication which not only supports receiving uplink transmissions of the terminal devices, but also supports downlink commands such as broadcast, multicast, and unicast.

## 2. Applications

ZETA network device, connect other ZETA modules to the ZETA server

## 3. Appearance & Interface



## 4. Device Specifications

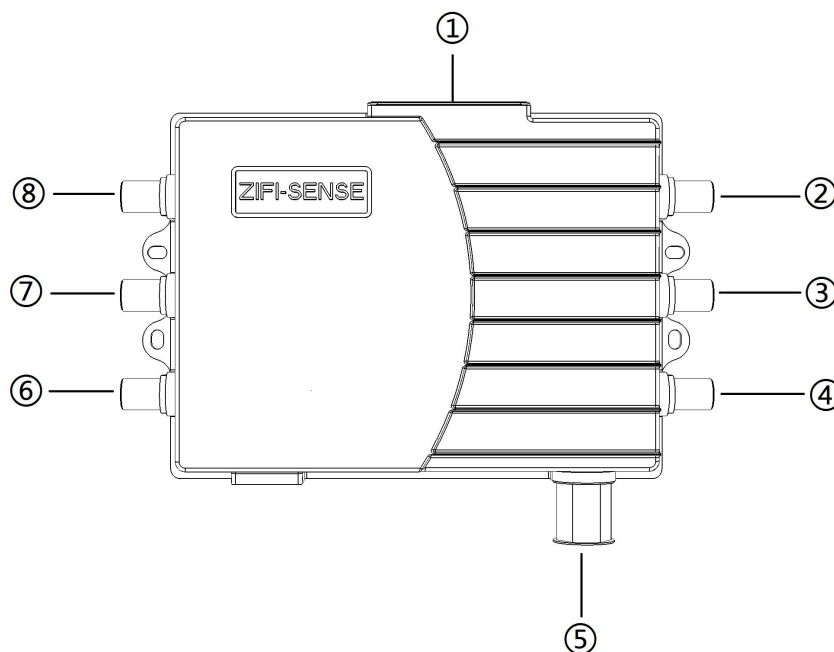
Model No.		APZT-G001/APTG-G001
Wireless	Protocol	ZETA
	Frequency band	920-925
	Output power	20±3 mW
	Number of channels	1 (expandable to 3 channels)
	Coverage	Urban area/complex environment: 200m-2km Line-of-sight/open environment: 10-15km
Electrical	Power supply	PoE/ AC100- 240V to DC 5V
	Standby current	≤100mA
	Power	≤5W
Physical	Weight	1.5kg
	Size	256*200*86mm
	Enclosure material	Aluminum alloy
	Ingress level	IP67
	Antenna	FRP Antenna
Environmental	Operating temperature	-20°C~+60°C
	Storage temperature	-30°C~+85°C

## 5. Use of AP

### 5.1. Antenna installation

According to the device interface diagram, install the RF, GPS, and operator antennas that match the device.

Note: The gateway of the test kit sends data back through the operator's network by default. Please check whether the device has a SIM card installed. If it is not installed, you need to install a suitable local SIM card by yourself.



- 1 : AP Label & SIM
- 2 : GPS ANT
- 3 : ZETA RF1 ANT
- 4 : Reserved
- 5 : PoE
- 6 : Reserved
- 7 : Reserved

8 : Reserved

## 6. Installation

### 6.1. Installation Kit

Before the equipment is installed, customers need to prepare the following installation tools and auxiliary materials:

Name	No.	Use Case
Screwdriver	1	For AP bracket, antenna, hoop and other screws
Wrench(#10)	1	For fixing screw nuts
Waterproof tape	1	For AP interface waterproof
Waterproof clay	1	For AP interface waterproof
Electrician knife	1	Used to intercept waterproof tape
LAN cables (Cat.5 / Cat.5e / Cat.6)	1	Used for power the device. (The length is based on the actual route required)
Crystal head(TYF)	1	Used to make the cable head
Wire presser	1	Used to make the PoE network cable
Waterproof casing	few	Used to protect the exposed network cable (power cord)
Expansion screw	few	Used for equipment installation
Electric percussion drill	1	For wall turning for the expansion screw
Tool pliers	1	Used to screw the ground wire
Strapping tape	few	For wire fixing

The list of installation accessories is as follows:

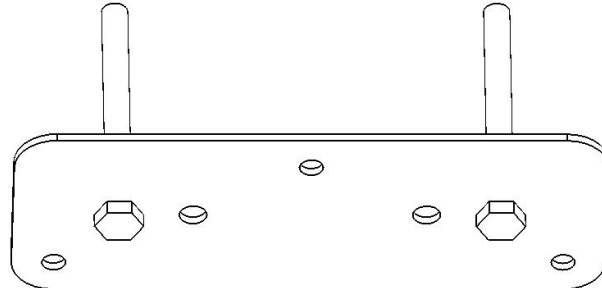
Accessory name	No.	Remarks
Mounting liner	2	
Liner mounting screws	4	
Mounting bracket (pair)	2	
Hoop screws	4	Two sizes of screws are available: long/short
Hoop	2	
Antenna fitting	1	



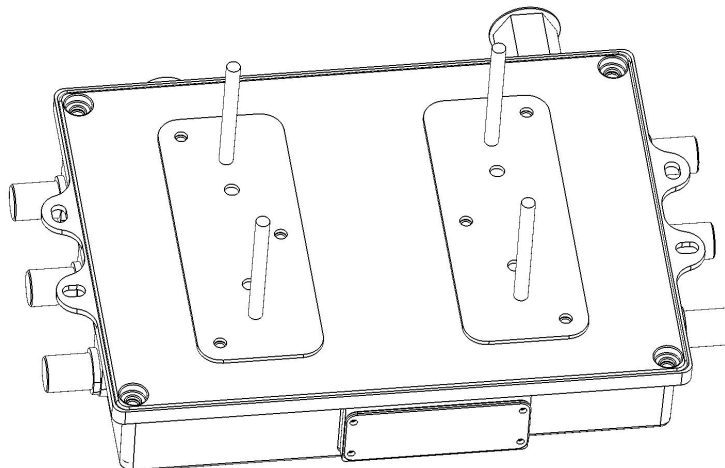
## 6.2. Gateway installation

### 6.2.1. Bracket fixture

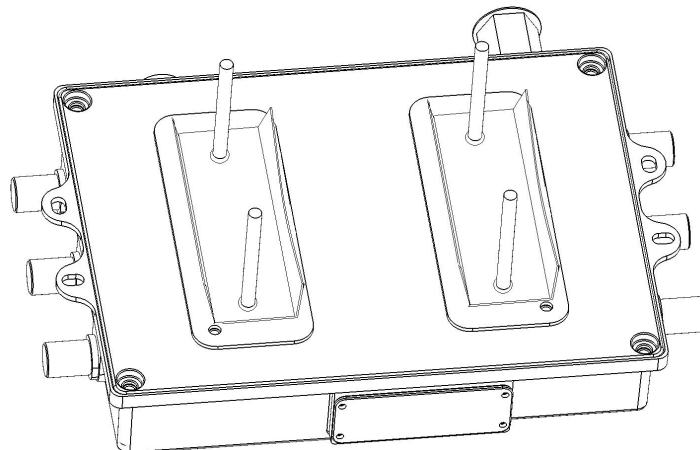
- 1) Use 4 long screws to pass through the two mounting linings



- 2) Align the two mounting linings on the back of the gateway and fix them with two screws respectively;

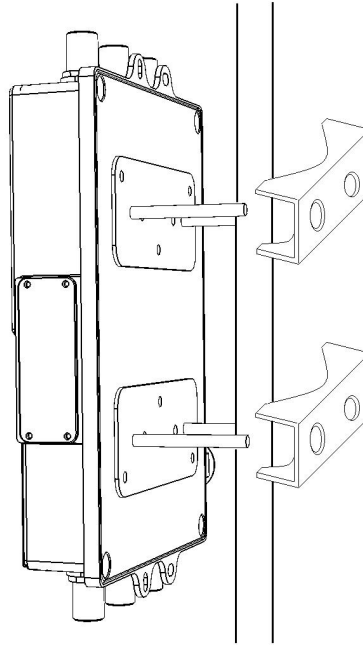


- 3) Take two pieces of bracket fixture through the long screws;



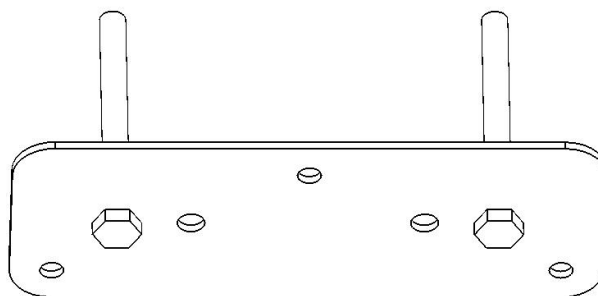
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4) The gateway is installed to the pole, and the other two dog teeth fixtures are passed through the screws to hug the other end of the pole. According to the actual situation of the site, the fixed direction and the position are adjusted, and the screws are fixed.



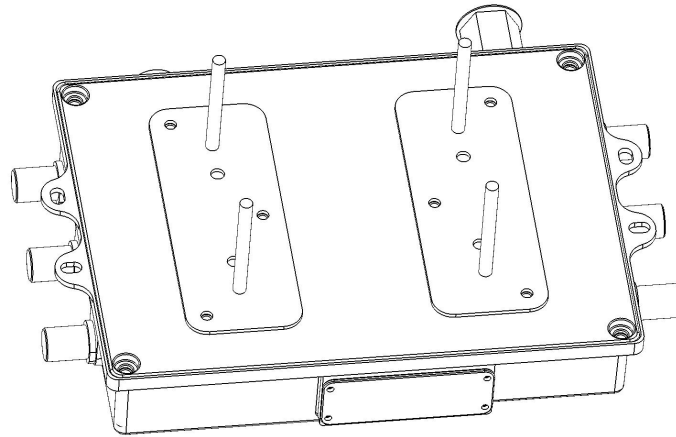
### 6.2.2. Hoop fixture

1) Pass the four short screws through the two mounting linings;

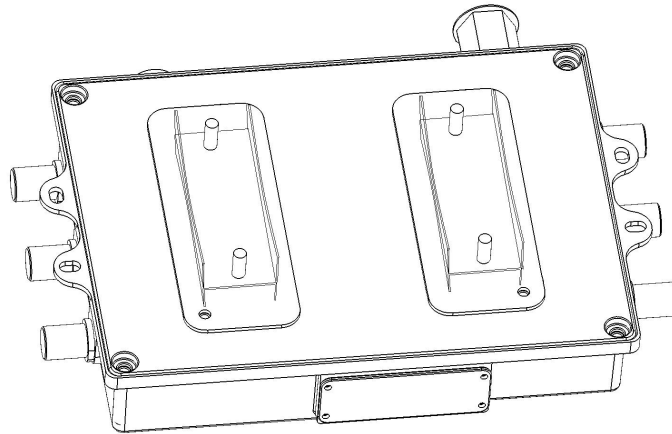


2) Align the two mounting linings on the back of the gateway and fix them with two screws respectively;

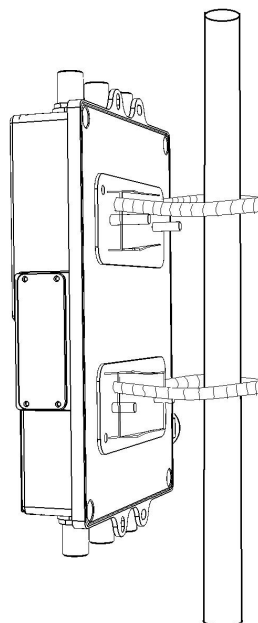
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3) Fix the 4 clips as follows



4) Pass the hoop through the gap of the clamp and adjust the position of the gateway to the pole

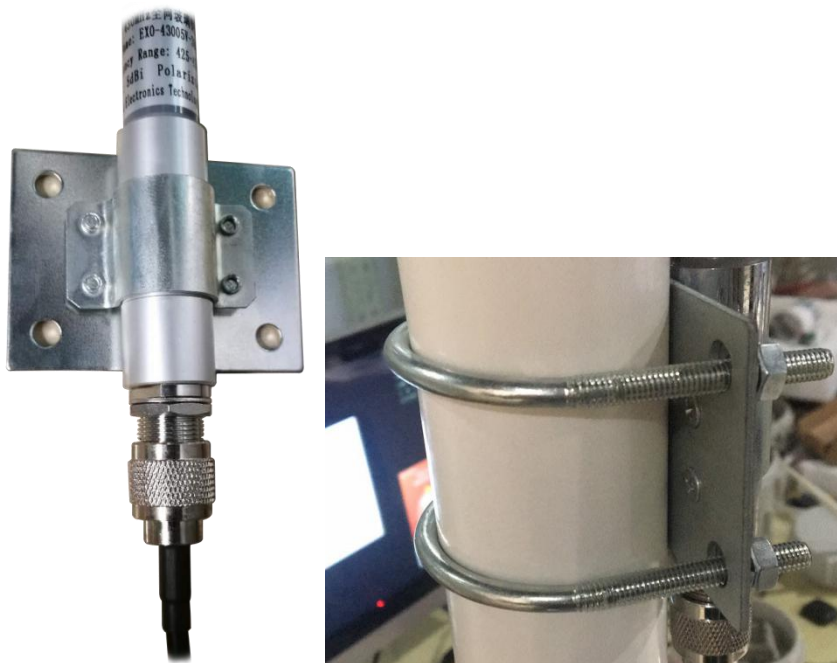


## 6.3. Antenna installation

### 6.3.1. U-ring fixing

This method is suitable for scenes with a pole diameter less than 5 cm:

- 1) Take out the antenna U-shaped fitting and disconnect the antenna fitting screw
- 2) The antenna and the feeder are connected in advance and the lightning protection and waterproof measures are taken according to the specifications;
- 3) Close the antenna to the pole and use the U-ring in the accessory to clamp and tighten the screw as shown:



### 6.3.2. Hoop fixing

This method is suitable for scenes with a pole diameter greater than 5 cm:

- 1) Remove the mounting back plate at the lower end of the antenna;
- 2) The antenna and the feeder are connected in advance and the lightning protection and waterproof measures are taken according to the specifications.
- 3) According to the diameter of the pole, buy a suitable size hoop in advance

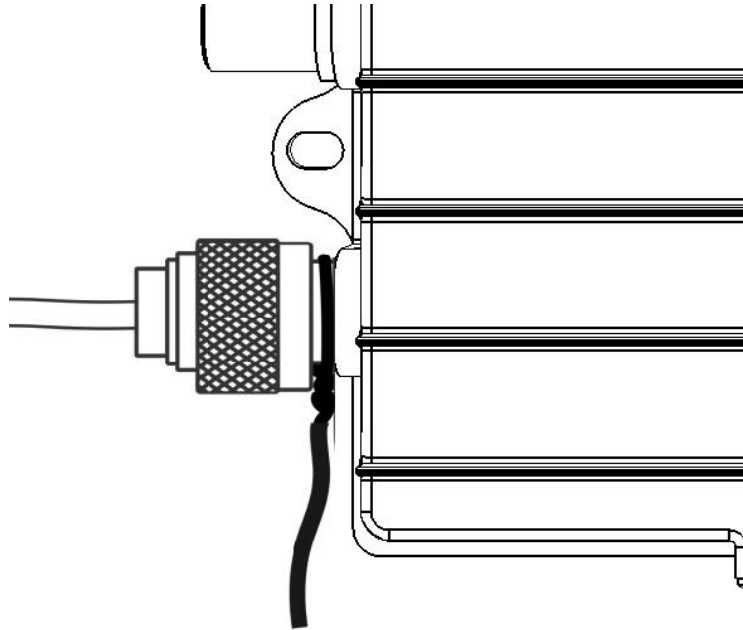
4) Use the spiral hoop to fix the antenna on the pole



### 6.4. Equipment waterproof and lightning protection

#### 6.4.1. Lightning protection

- 1) Use a piece of grounding wire, wrap it around the joint of the antenna, and tighten with a tool pliers;
- 2) The other end of the grounding wire is connected to the lightning protection network end of the site construction area, and the whole process is guaranteed to be connected with the metal;



#### 6.4.2. Waterproofing

1) All exposed metal parts connecting the device to the antenna are wrapped with electrical tape;



2) Cut a piece of waterproof clay, and wrap the part wrapped with the electrical tape again after wrapping;

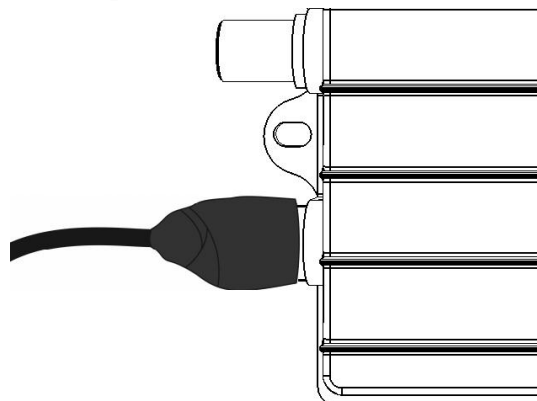
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3) Finally, wrap the layer again with an electrical tape;



4) All other outdoor open-air interface of the gateway must be processed according to the above steps;



### 6.4.3. Power port waterproofing

1) Pass the network cable through the connector cover, seal ring and base in turn, and press the crystal head with the wire crimping pliers, as shown below:



2) Insert the cable head into the gateway POE port and tighten the base.



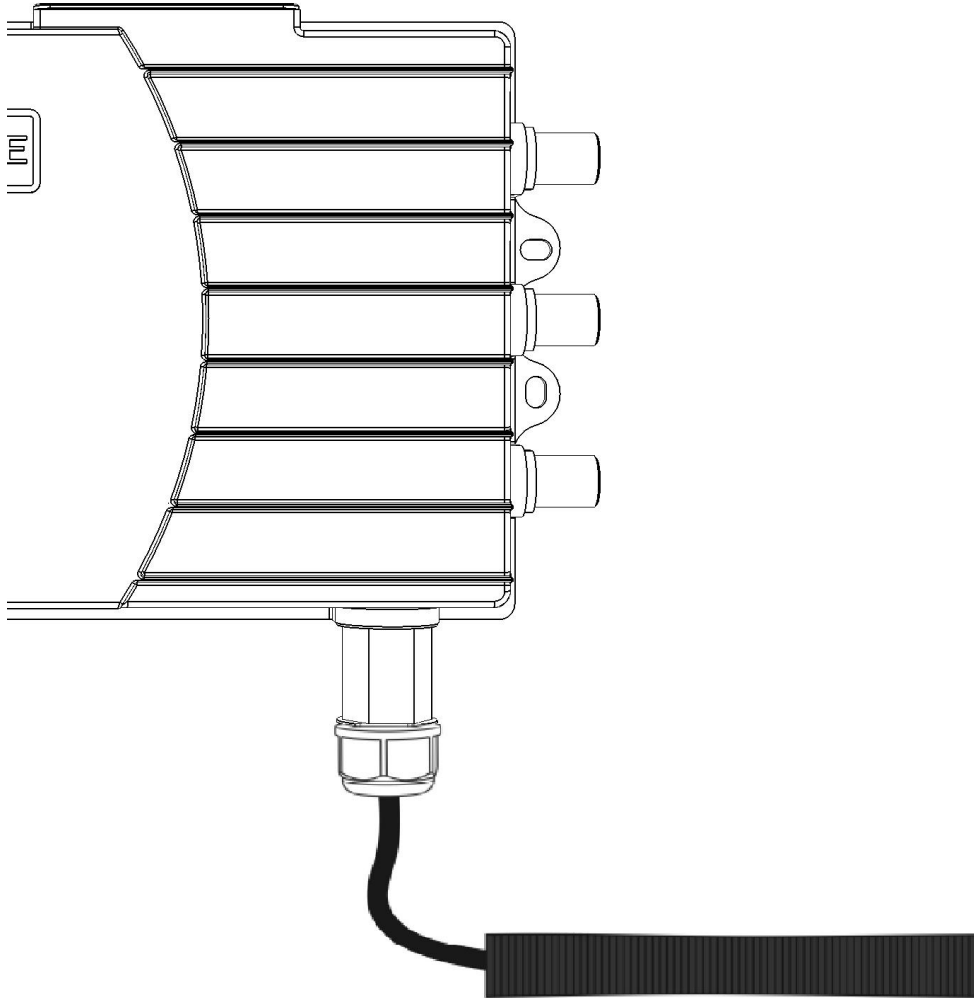
3) Plug the seal and tighten the cover



4) According to the site construction conditions, intercept the waterproof casing and insert the network cable used for power supply of the equipment, as shown in the figure:



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- 5) At the other end of the cable, use a crimping tool to make the crystal head and connect to the P+D port of the POE power adapter.
- 6) The POE power adapter is powered on, and the POE orange indicator lights up;



### 7. Common faults and handling

- Check the power supply to ensure that the gateway is powered normally.
- Check the antenna, whether the antennas are connected correctly, and whether they are properly tightened.
- Check the network cable and check if the network cable is properly connected.
- Check the SIM card and insert it normally.
- Check the status light to check whether the two status lights on the gateway core board are normal (one is always on, and one flashes twice in one second)
- View the platform device status. In the (Management Platform - Gateway Management) list, check whether the current device status is "Online".
- Check whether the heartbeat packet of the gateway (once per minute) is normal.
- If it still does not work, you can power it on again, start the gateway device, and check to see if it is restored.
- Contact ZFiSense for more solutions.

## **FCC Statement**

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.

This device complies with FCC PART15 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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