User Manual

Wireless Smoke Detector
ZA02A

Table of Content

1. Introduction

ZA02A (Smoke Detector) is used as an end device in the network. Other devices are not allowed to join the network as sub-devices.

ZA02A is a smoke detector. When the concentration of smoke in the air exceeds the set limit, the device will send an alarm message to the enrolled devices, so that the enrolled devices will send out an alarm. The device itself also have a sound alarm to remind the user to ensure the user's safety.

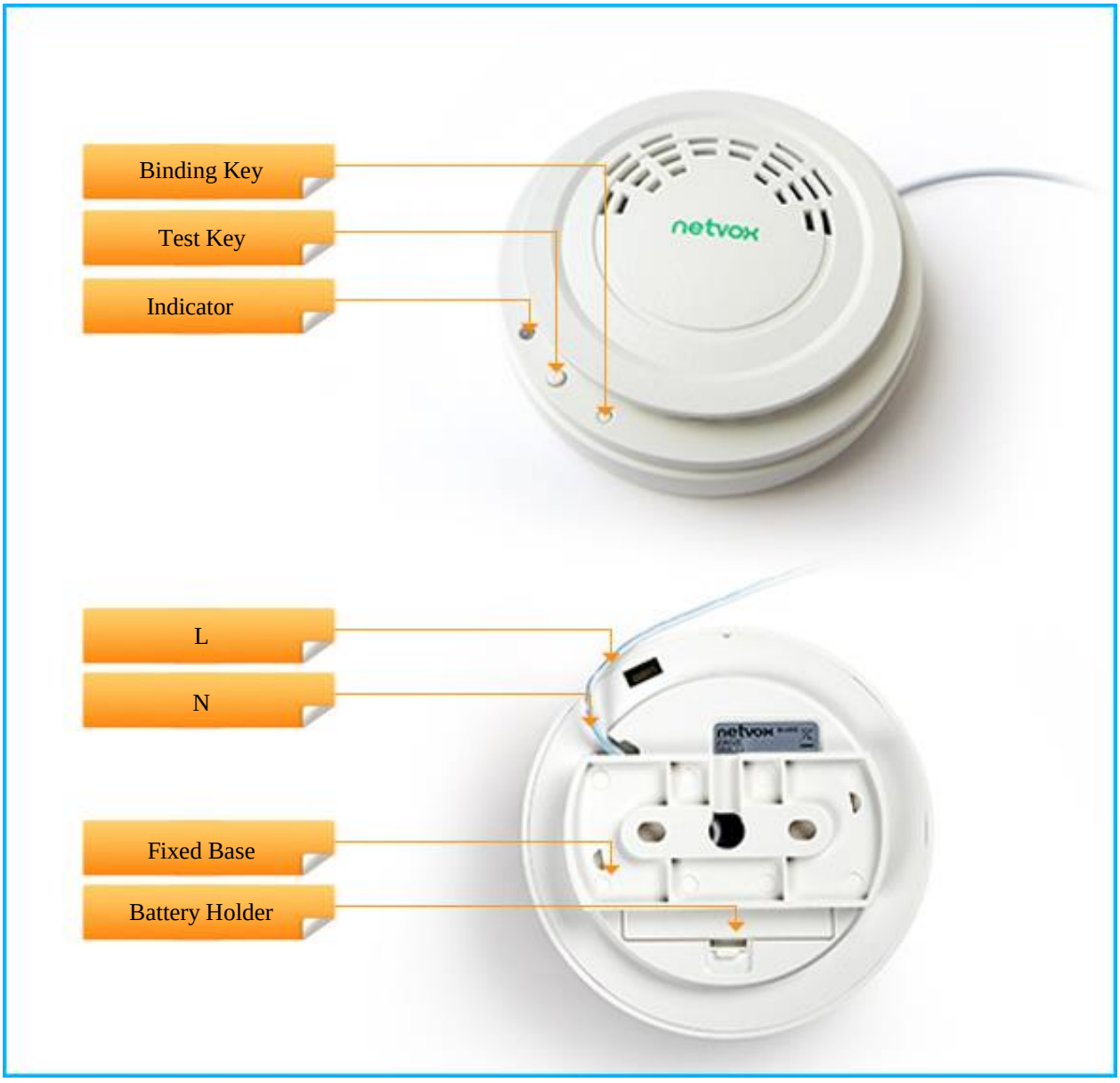
The equipment itself will also have a sound alarm to remind the user, ensure the safety of users' lives and property.

The device also has a temperature detection function. When the detected temperature exceeds 60 degrees Celsius, the device also sends an alarm message to the enrolled devices to make the enrolled devices send alarm.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Appearance



3. Specification

- Fully IEEE 802.15.4 compliant
- Utilizes 2.4GHz ISM band; up to 16 channels
- 3V CR17450 lithium battery power supply
- Communication range up to 210 meters

4. Setting up ZA02A

4-1. Join the ZigBee Network

After ZA02A is powered on and the indicator flashes once, it will search for the network automatically. If there is a coordinator or route having the same channel in the network and the network permits the device to be joined, the device will join the network.

1. Insert batteries on ZA02A. It will start searching to join the network.
2. The green indicator will flash 5 times slowly after joining successfully.
3. If it is fail to join the network within 3 minutes, device will search to join the network every 15 minutes.

Note: During these 15 minutes, user can also press and hold *binding key* for 3 seconds or press *test key* once shortly to search the network, and the smoke alarm sounds simultaneously.

4.2. Enroll in the ZigBee Security System

After ZA02A successfully joins to the network, ZA02A will automatically match with CIE device, and register itself to the CIE. The enrollment has these 3 situations:

A. There is no CIE device or no compatible CIE device in the network → the indicator flashes **red twice**.
B. There is a compatible CIE device in the network, but it is failed to enroll → the indicator flashes **red 4 times**.
C. The enrollment is completed → the indicator flashes **red 6 times**.

4-3. Smoke Detection

When the concentration of the smoke in the air exceeds the set limit, the device will send an alarm message to the enrolled device, the buzzer will be turned on, and the indicator will flash alternately. Pressing the *Test key* can turn off the buzzer and the indicator. When the smoke concentration is less than the set limit, the buzzer and the indicator will turn off automatically.

4-4. Alarm Test

To test the alarm feature of ZA02A, press shortly *Test Key* **once.**

1. After ZA02A joining network and enrolled successfully, the buzzer rings for 5 seconds (3-5 times).
2. If this is the first alarm test, the buzzer rings gradually for 5 times and the indicator alternately flashes **5 times**. In the meantime, it will send alarm to the enrolled devices.
3. If ZA02A receives fire alarm from CIE devices during alarm test, it will turn on the buzzer and the indicator will keep flashing.
4. If ZA02A is in the network but not enrolled → the buzzer rings for 5 seconds (3-5 times) and the indicator flashes **5 times** alternately. It also sends the enrollment request.
   After the enrollment is successful, it will issue an alarm sound.
   After the enrollment is fail, it has no action.
5. If ZA02A is not in a network → it issues alarm sound for 5 seconds (3-5 times).
   The indicator flashes **5 times** alternately. Press *Test Key* once within 5 seconds during the buzzer rings to close alarm.

4-5. Announce and Restart

Press and hold the *Test Key* for 3 seconds to announce and green indicator will flash 5 times.
Press and hold the *Test Key* for 10 seconds until the green indicator flashes to restart ZA02A.

4-6. Low Voltage alarm and Temperature Sensor

(1) Device uses 3V CR17450 lithium battery power supply. While battery power is lower than 2.4V, device will stop operating.

(2) When the sensor is triggered or the TEST button is pressed, it will detect whether it is under low voltage every hour. If low voltage is detected, the device will send a weak current alarm to the enrolled device, and the buzzer will sound for 1 second (1 to 2 times). The indicator alternately flashes once to remind the user to replace the battery.

(3) The 4 battery attributes:

- BatteryVoltageMinThreshold: 2.4V
- BatteryVoltageThreshold1: 2.5V
- BatteryVoltageThreshold2: 2.6V
- BatteryVoltageThreshold3: 2.7V

When the battery voltage is lower than the VoltageThreshold, it will send the voltage alarm code:

- Lower than BatteryVoltageMinThreshold → sends the Alarmcode = 0x10 alarm announcement.
- Lower than BatteryVoltageThreshold1 → sends the Alarmcode = 0x11 alarm announcement.
- Lower than BatteryVoltageThreshold2 → sends the Alarmcode = 0x12 alarm announcement.
- Lower than BatteryVoltageThreshold3 → sends the Alarmcode = 0x13 alarm announcement.

(4) When the smoke alarm is triggered, it will start to detect the current temperature and broadcast a report every minute. The content of report is current temperature value. When the smoke alarm lifted, it will stop detecting temperature and reporting broadcast.

4-7. Restore to Factory Setting

If users would like to join device into a new network, it needs to be restored.

To restore it to factory setting, please follow the steps:

Step1. Press and hold both *Binding Key* & *Test Key* for 5 seconds, and then release the buttons when the green indicator flashes.

Step2. After that, the red indicator will flash **20 times** to show restore completely.

Step3. After restoring completely, the indicator will flash once and search the new network.

5. Home Automation Clusters for ZA02A

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by ZA02A.

1.End Point(s)：0x01

2.Device ID：HA IAS ZONE（0x0402）

3.EndPoint Cluster ID

Cluster ID for ZA02A	
Server side	**Client side**
EP 0X0A (Device ID: 0x0402)	
Basic(0x0000)	*None*
Power Configuration(0x0001)	
Identify(0x0003)	
Commission（0x0015）	
Poll Control(0x0020)	
IAS Zone(0x0500)	
Diagnostics Information(0x0B05)	

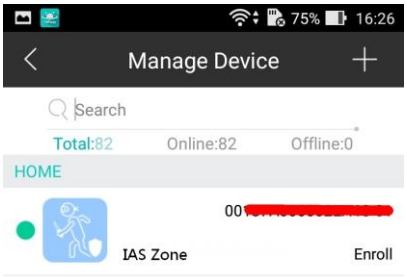
This lists the attributes of the basic information.

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	ZCLVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x03	M
0x0001	ApplicationVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x14	O
0x0002	StackVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x38	O
0x0003	HWVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x15	O
0x0004	ManufacturerName	Character string	0 – 17 bytes	Read only	netvox	O
0x0005	ModelIdentifier	Character string	0 – 17bytes	Read only	ZA02AE3ED	O

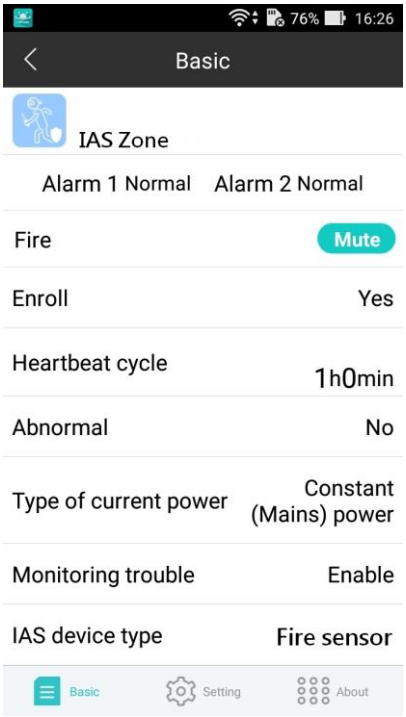
Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0006	DateCode	Character string	0 – 17 bytes	Read only	20160707	O
0x0007	PowerSource	8-bit Enumeration	0x00 – 0xff	Read only	0x03	M
0x0010	LocationDescription	Character string	0 – 17 bytes	Read/write		O
0x0011	PhysicalEnvironment	8-bit Enumeration	0x00 –0xff	Read/write	0x00	O
0x0012	DeviceEnabled	Boolean	0x00 –0 0x01	Read/write	0x01	M

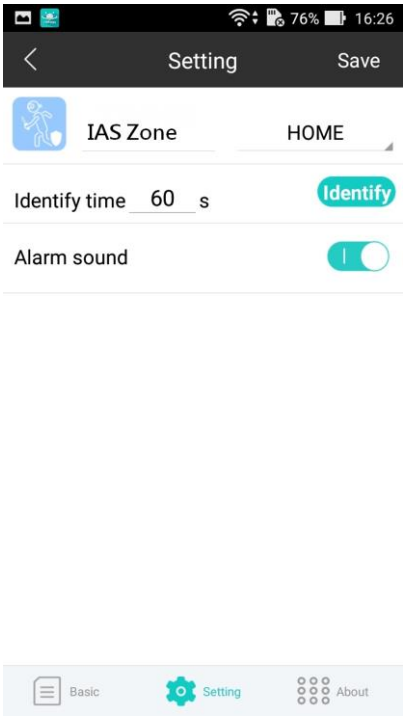
6. Netvox App Control Interface

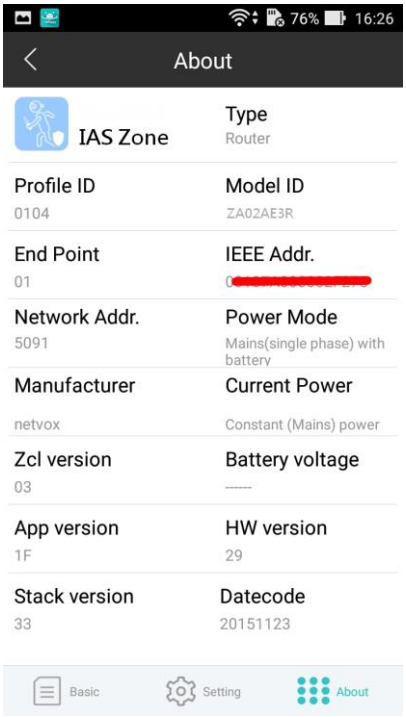
1. After joining in Netvox App system, device IEEE address will show up in device management interface. For example, ZA02A has one EP (end device) and IAS Zone will automatically register to CIE system as shown below:



2. Click “IAS Zone” into the basic information interface, by clicking on the bottom of the "Basic" "Setting" "About" interface to switch interfaces to check detail information of the device. In “Setting” interface, users can turn on/off alarm sound.







7. Important Maintenance Instruction

Kindly pay attention to the following in order to achieve the best maintenance of the product:

- Keep the equipment dry. Rain, moisture and various liquids or water may contain minerals that can corrode electronic circuits. In case the device is wet, please dry it completely.
- Do not use or store in dusty or dirty areas. This way can damage its detachable parts and electronic components.
- Do not store in excessive heat place. High temperatures can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.
- Do not store in excessive cold place. Otherwise, when the temperature rises to normal temperature, moisture will form inside which will destroy the board.
- Do not throw, knock or shake the device. Treating equipment roughly can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not paint the device. Smudges can make debris block detachable parts up and affect normal operation.
- Do not throw the battery into the fire to prevent the battery from exploding. Damaged batteries may also explode.

All the above suggestions apply equally to your device, batteries and accessories.
If any device is not operating properly.
Please take it to the nearest authorized service facility for repairing.

User Manual

Wireless Methane Gas Detector
ZA02B

Table of Content

1. Introduction

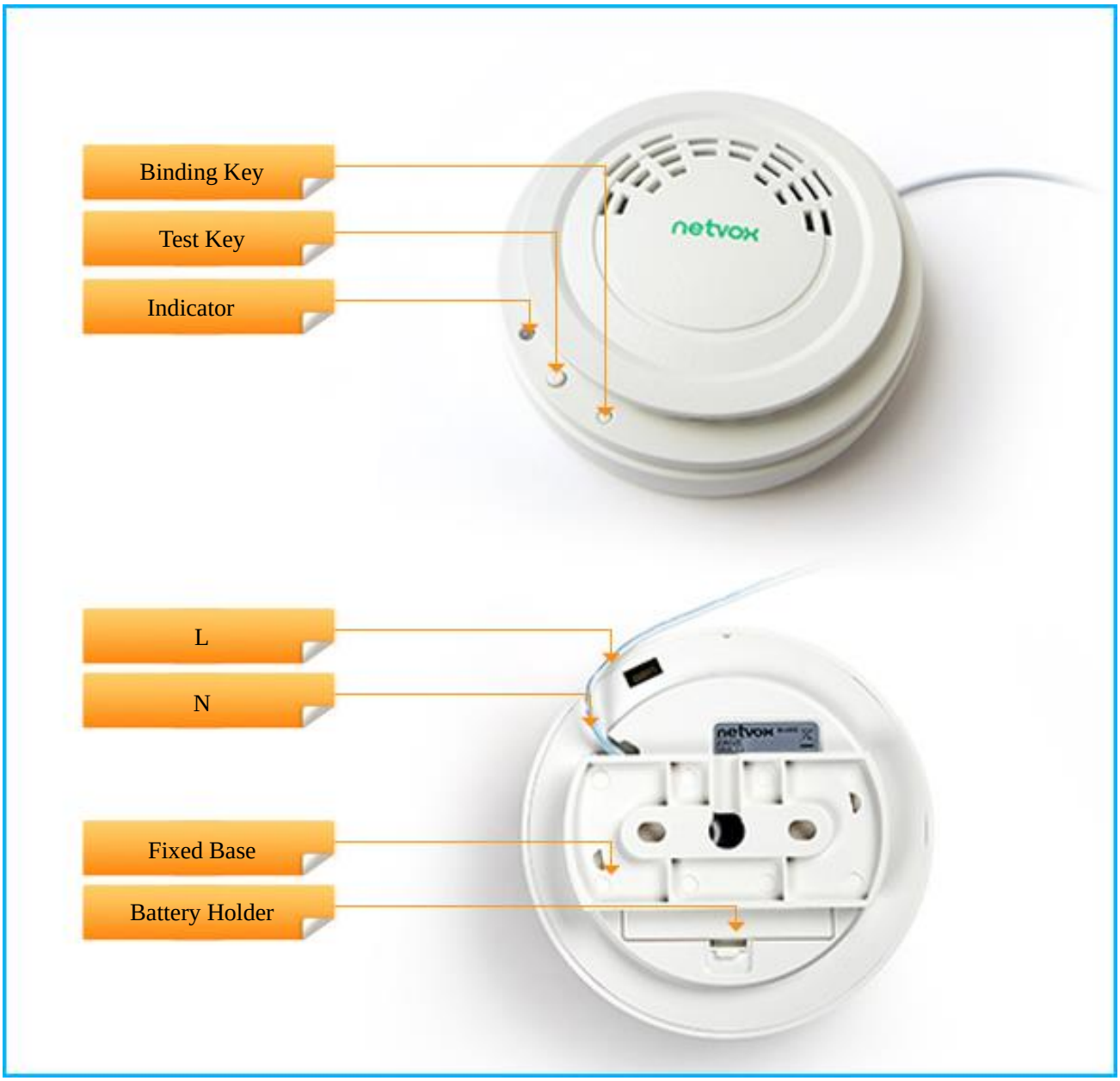
Netvox ZA02B, a methane gas detector, acts as a Router Device in ZigBee network and allows other devices to join the network as its sub-devices.

ZA02B is a methane gas detector which acts as a security device in the network. When the concentration of methane gas in the air exceeds the set limit, the device emits an alarm sound and sends the information about status changing to the enrolled CIE device at the same time. CIE will send a command to make the alarm device in the network sound an alarm to remind the user and ensure the user's safety.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Appearance



3. Specification

- Fully IEEE 802.15.4 compliant
- Utilizes 2.4GHz ISM band; up to 16 channels
- Power supply: 100~240VAC; 50/60Hz
- Up to 210 meters wireless transmission range in non-obstacle space
- Easy installation and configuration

4. Setting up ZA02B

4-1. Join the ZigBee Network

Connect the device with a 100～240VAC 50/60Hz power supply at the source interface, and the red indicator will be on.

4-2. Join the ZigBee Network

In order to make ZA02B communicate with other devices on the Zigbee network, ZA02B must be joined to the network first.

Step1. Enable the permit-join function (valid for 60 seconds) of a coordinator or a router (please refer to the user manual of the coordinator or the router to enable the permit-join feature).

Step2. Turn on ZA02B. It will start to search and join the network.

Step3. The indicator will stay **green** after it is joined successfully. Otherwise, the indicator will stay **red**.

4-3. Enroll in the ZigBee Security System

After ZA02B successfully joins to the network, ZA02B will automatically match with CIE device, and register itself to the CIE. The enrollment has these 3 situations:

A. There is no CIE device or no compatible CIE device in the network → the indicator flashes **red twice**.

B. There is a compatible CIE device in the network, but it is failed to enroll → the indicator flashes **red 4 times**.

C. The enrollment is completed → the indicator flashes **red 6 times**.

NOTE: If the device has successfully registered to CIE, the red LED will flash 6 times when it is powered on every time.

4-4. Permit-Join

To allow other devices to join the ZigBee network, users could enable and disable the Permit-Join feature by the following steps:

A. Press the *Binding Key* to enable the Permit-Join feature. The default time is 60 seconds.

B. During the default time, press the *Binding Key* again to disable the Permit-Join feature.

4-5.alarm Test

To test the alarm feature of ZA02B, press the *Test Key* **once**.

A. ZA02B does not join a network and is not enrolled → it will issue alarm sound for 5 seconds. The indicator flashes **5 times**.

B. ZA02B joins the network and is enrolled → it sends notification to the CIE device and issues alarm sound. The indicator keeps flashing.

C. ZA02B joins the network but is not enrolled → it will issue alarm sound for 5 seconds and the indicator flashes **5 times**. Then, it sends the enrollment request. After the enrollment is successful, it will issue an alarm sound.

4-6. Air Command Alarm

When ZA02B receives the fire alarm from CIE, the device will turn on the buzzer and the indicator will flash alternately.

When the device receives the stop command of fire alarm, it will return to the normal state.

4-7. Triggered Alarm

When the concentration of the detectable gases in the air exceeds the set limit, the device emits an alarm sound and the indicator flashes alternately until the concentration drops below the limit. It will also send the alarm to CIE which it is enrolled to or to the other device which is bound with Cluster ID (0x0500). ZA02B can work as a temperature sensor. It alarms when the temperature is higher than 60℃.

- The sensing feature is ready after ZA02B is powered on for 5 minutes.

- When using for **the first time**, ZA02B will reach the best sensitivity after it is powered on for 48 hours.
- Detecting range: 1500-7500ppm.
- The default setting (potentiometer in the middle): The concentration limit is 3000ppm.
  Adjust the potentiometer clockwise to the end: The concentration limit is 1500ppm.
  Adjust the potentiometer counterclockwise to the end: The concentration limit is 7500ppm.

4-8. Announce

Press and hold the *Test Key* for 3 seconds the indicator flashes once.

4-9. Reboot

Press and hold the *Test Key* for 10 seconds and the indicator flashes once.

4-10. Restore to Factory Setting

To restore it to factory setting, please follow the steps:

Step1. Press and hold both *Binding Key* & *Test Key* for 5 seconds. The indicator will flash **red once**, please release both keys at this time.

Step2. After releasing both keys, the indicator will flash **20 times** meaning restore completed.

Step3. If the indicator stays **red** after restoring, it means device does not join in the network.

5. Home Automation Clusters for ZA02B

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by ZA02B.

1. End Point(s)： 0x01
2. Device ID：IAS Zone（0x0402）
3. EndPoint Cluster ID

Cluster ID for ZA02B	
Server side	Client side
EP: 0x01 (Device ID: 0x0402)	
Basic(0x0000)	
Identify(0x0003) IAS Zone(0x0500) Commissioning(0x0015)	

This lists the attributes of the basic information.

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*ZCLVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	-------	M
0x0001	*ApplicationVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	-------	O
0x0002	*StackVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	--------	O
0x0003	*HWVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	--------	O
0x0004	*ManufacturerName*	Character string	0 – 32 bytes	Read only	netvox	O
0x0005	*ModelIdentifier*	Character	0 – 32	Read only	--------	O

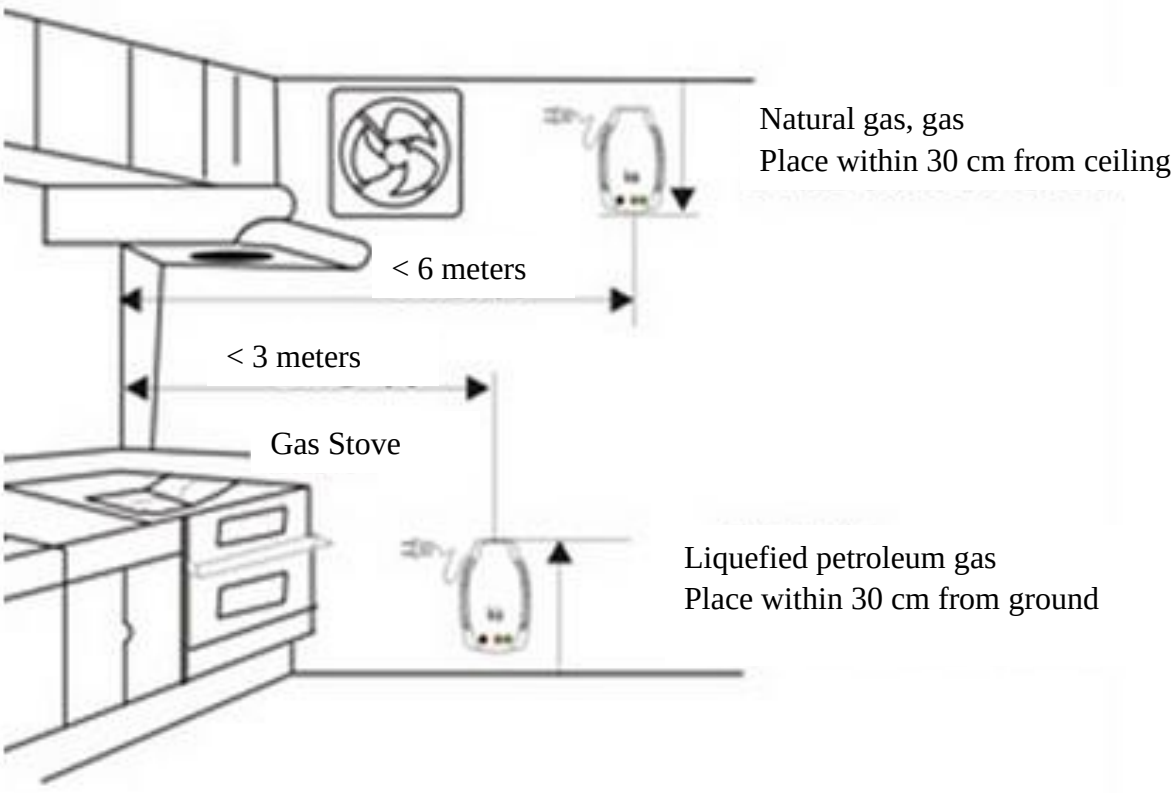
		string	bytes			
0x0006	*DateCode*	Character string	0 – 16 bytes	Read only	-------	O
0x0007	*PowerSource*	8-bit Enumeration	0x00 – 0xff	Read only	0x04	M
0x0010	*LocationDescription*	Character string	0 – 16 bytes	Read/write	--------	O
0x0011	*PhysicalEnvironment*	8-bit Enumeration	0x00 – 0xff	Read/write	-------	O
0x0012	*DeviceEnabled*	Boolean	0x00 – 0x01	Read/write	0x01	O

6. Related Netvox Device

1. Z602A：Alarm with notification

2. Z203：Coordinator with CIE

7. Installation



8. Important Maintenance Instruction

Kindly pay attention to the following in order to achieve the best maintenance of the product:

- Keep the equipment dry. Rain, moisture and various liquids or water may contain minerals that can corrode electronic circuits. In case the device is wet, please dry it completely.
- Do not use or store in dusty or dirty areas. This way can damage its detachable parts and electronic components.
- Do not store in excessive heat place. High temperatures can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.
- Do not store in excessive cold place. Otherwise, when the temperature rises to normal temperature, moisture will form inside which will destroy the board.
- Do not throw, knock or shake the device. Treating equipment roughly can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not paint the device. Smudges can make debris block detachable parts up and affect normal operation.
- Do not throw the battery into the fire to prevent the battery from exploding. Damaged batteries may also explode.

All the above suggestions apply equally to your device, batteries and accessories.
If any device is not operating properly.
Please take it to the nearest authorized service facility for repairing.

User Manual

Wireless-CO/Temperature Sensor

ZA02C

Table of Content

1. Introduction

ZA02C (Smoke Detector) is used as an end device in the network. Other devices are not allowed to join the network as the sub-devices.

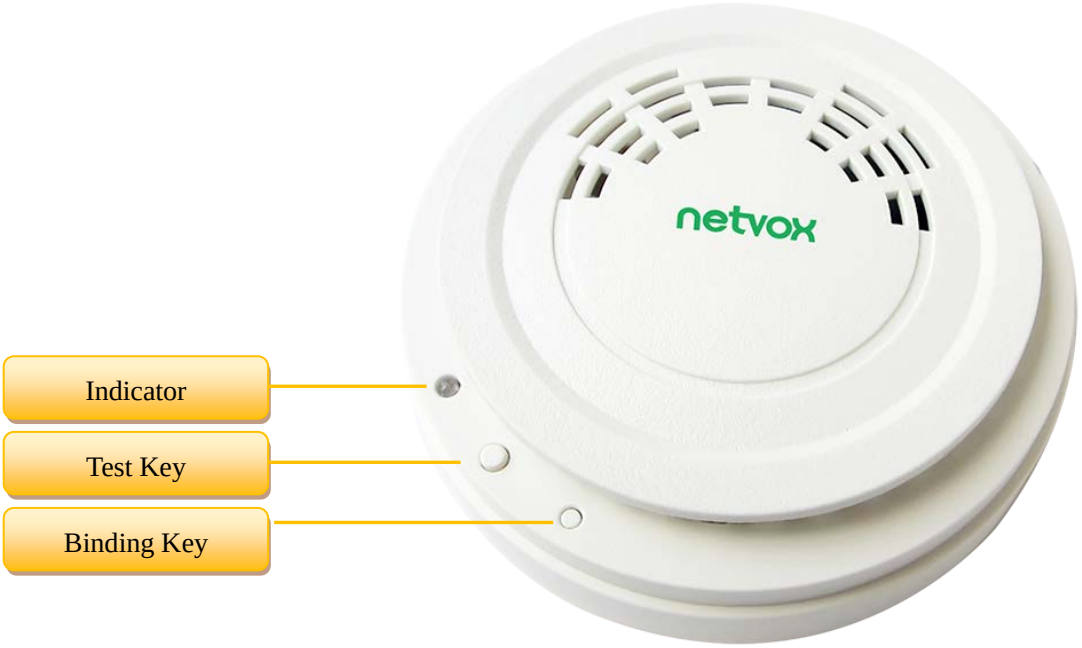
ZA02C is a CO detector. When the concentration of CO in the air exceeds the default, the device will send an alarm message to the enrolled equipment, so that the enrolled equipment will send out an alarm. The device itself also has a sound alarm to remind the user ensuring the users' safety.

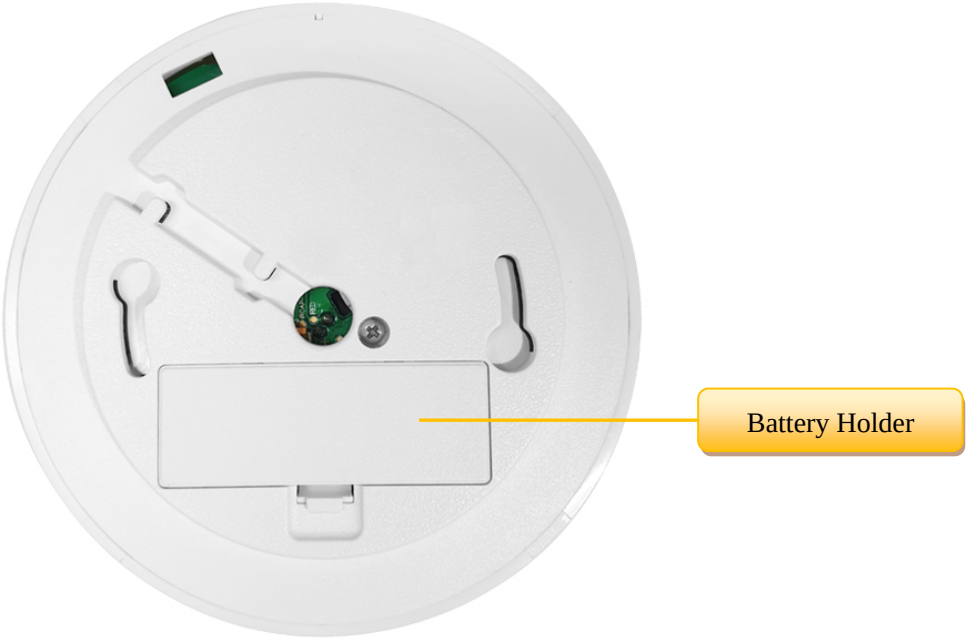
At the same time, the device also has a temperature detection function. When the detected temperature exceeds 60 degrees Celsius, the device also sends an alarm message to the enrolled device to make the enrolled device issue an alarm.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Appearance





3. Specification

- Fully compatible with IEEE 802.15.4
- Utilizes 2.4GHz ISM band, up to 16 channels
- 2 AAA 1.5V batteries
- Communication range up to 210 meters
- CO detector
- End device

4. Setting up ZA02C

4-1. Join the ZigBee Network

After ZA02C is powered on and the indicator flashes once, it will search for the network automatically. If there is a coordinator or route having the same channel in the network and the network permits the device to be joined, the device will join the network.

1. Insert batteries on ZA02C. It will start searching to join the network.
2. The green indicator will flash 5 times slowly after joining successfully.
3. If it is fail to join the network within 3 minutes, device will search to join the network every 15 minutes.

Note: During these 15 minutes, user can also press and hold *binding key* for 3 seconds or press *test key* once shortly to search the network, and the smoke alarm sounds simultaneously.

4-2. Enroll in the ZigBee Security System

After ZA02C successfully joins to the network, ZA02C will automatically match with CIE device, and register itself to the CIE. The enrollment has these 3 situations:

A. There is no CIE device or no compatible CIE device in the network → the indicator flashes **red twice**.

B. There is a compatible CIE device in the network, but it is failed to enroll → the indicator flashes **red 4 times**.

C. The enrollment is completed → the indicator flashes **red 6 times**.

4-3. CO detection

When the concentration of CO in the air exceeds the set limit, the device will send an alarm message to the enrolled device, the buzzer will be turned on, and the indicator will flash alternately. Pressing the *Test key* can turn off the buzzer and the indicator. When the CO concentration is less than the set limit, the buzzer and the indicator will turn off automatically.

4-4. Alarm Test

To test the alarm feature of ZA02C, press shortly *Test Key* once.

1. After ZA02C joining network and enrolled successfully, the buzzer rings for 5 seconds (3-5 times).
2. If this is the first alarm test, the buzzer rings gradually for 5 times and the indicator alternately flashes 5 times. In the meantime, it will send alarm to the enrolled devices.
3. If ZA02C receives fire alarm from CIE devices during alarm test, it will turn on the buzzer and the indicator will keep flashing.
4. If ZA02C is in the network but not enrolled → the buzzer rings for 5 seconds (3-5 times) and the indicator flashes 5 times alternately. It also sends the enrollment request.
   After the enrollment is successful, it will issue an alarm sound.
   After the enrollment is fail, it has no action.
5. If ZA02C is not in a network → it issues alarm sound for 5 seconds (3-5 times).
   The indicator flashes 5 times alternately. Press *Test Key* once within 5 seconds during the buzzer rings to close alarm.

4-5. Low Voltage alarm and Temperature Sensor

(1) ZA02C uses 2 sections of AAA 1.5V batteries power supply. While battery power is lower than 2.4V, device will stop operating.

(2) When the sensor is triggered or the TEST button is pressed, it will detect whether it is under low voltage every hour. If low voltage is detected, the device will send a weak current alarm to the enrolled device, and the buzzer will sound for 1 second (1 to 2 times). The indicator alternately flashes once to remind the user to replace the battery.

(3) After the device is powered on for 10 seconds, the device will check the current temperature after that check it every 30 seconds. When the temperature exceeds 60 degrees, a high temperature emergency alarm is issued to the enrolled equipment. At the same time, the buzzer is turned on and the indicator flashes alternately.

4-6. Restore to Factory Setting

If users would like to join device into a new network, it needs to be restored.

To restore it to factory setting, please follow the steps:

Step1. Press and hold both *Binding Key* & *Test Key* for 5 seconds, and then release the buttons when the green indicator flashes.

Step2. After that, the red indicator will flash **20** times to show restore completely.

Step3. After restoring completely, the indicator will flash once and search the new network.

4-7. Announce and Restart

Since ZA02C is an end device, it will be in standby mode for a long time. User can manually wake it up by the following two ways:

Press and hold the *Test Key* for 3 seconds to make the device issue an announce and green indicator will flash 5 times.

Press and hold the *Test Key* for 10 seconds and green indicator will flash. Then, ZA02C will be restarted and issue an announce.

5. Home Automation Clusters for ZA02C

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by ZA02C.

1.End Point(s)：0x01

2.Device ID：HA IAS ZONE（0x0402）

3.EndPoint Cluster ID

Cluster ID for ZA02C	
Server side	**Client side**
EP 0X0A (Device ID: 0x0402)	
Basic(0x0000)	*None*
Power Configuration(0x0001)	
Identify(0x0003)	
Commission（0x0015）	
Poll Control(0x0020)	
IAS Zone(0x0500)	
Diagnostics Information(0x0B05)	

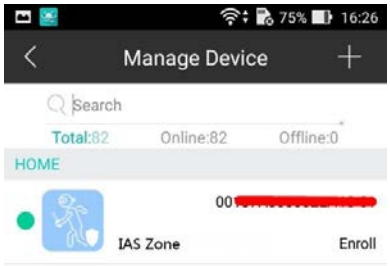
This lists the attributes of the basic information.

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	ZCLVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x03	M
0x0001	ApplicationVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x14	O
0x0002	StackVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x38	O
0x0003	HWVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x15	O
0x0004	ManufacturerName	Character string	0 – 17 bytes	Read only	netvox	O
0x0005	ModelIdentifier	Character string	0 – 17bytes	Read only	ZA02CE3ED	O
0x0006	DateCode	Character string	0 – 17 bytes	Read only	20151217	O

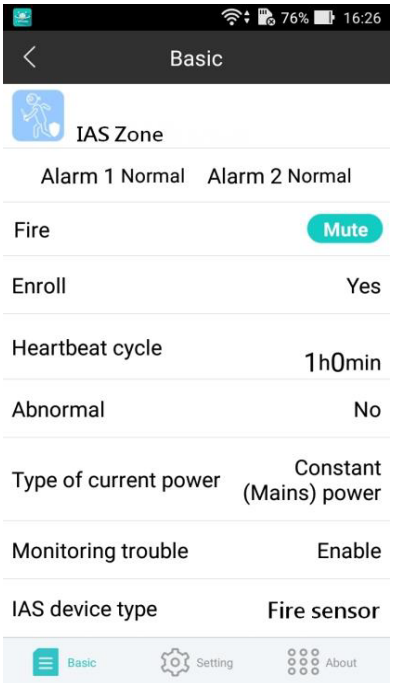
Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0007	PowerSource	8-bit Enumeration	0x00 – 0xff	Read only	0x03	M
0x0010	LocationDescription	Character string	0 – 17 bytes	Read/write		O
0x0011	PhysicalEnvironment	8-bit Enumeration	0x00 –0xff	Read/write	0x00	O
0x0012	DeviceEnabled	Boolean	0x00 –0 0x01	Read/write	0x01	M

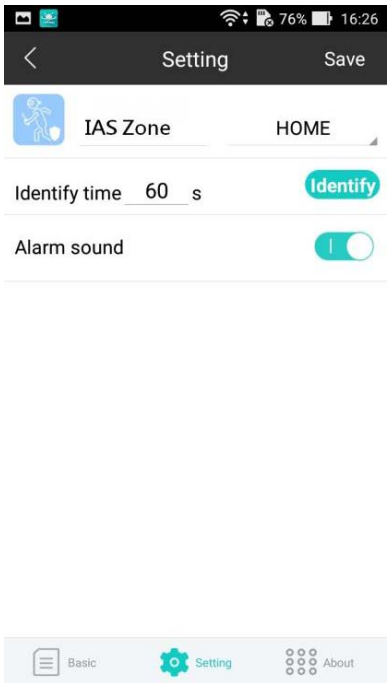
6. Netvox App Control Interface

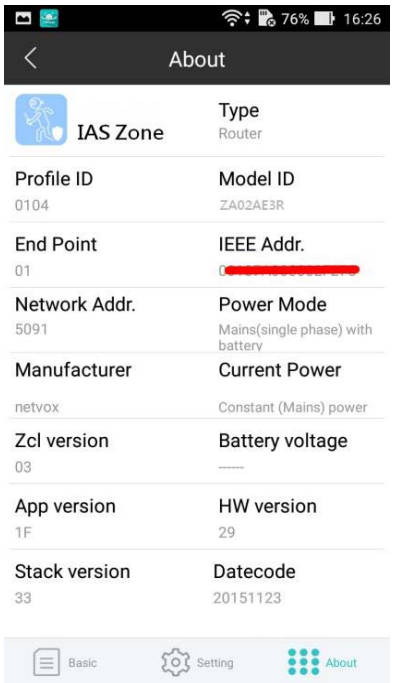
1. After joining in Netvox App system, device IEEE address will show up at device management interface . For example, ZA02C has one EP. After it is powered on, IAS Zone will automatically register to CIE system as the figure shown below



2. Click “IAS Zone” to enter the basic information interface, by clicking “Basic”, “Setting”, and “About” on the bottom of interface, user can switch interfaces to check detail information of the device and perform the corresponding custom actions.







7. Related Netvox Device

Range Extender-Z201

8. Important Maintenance Instruction

Kindly pay attention to the following in order to achieve the best maintenance of the product:

- Keep the equipment dry. Rain, moisture and various liquids or water may contain minerals that can corrode electronic circuits. In case the device is wet, please dry it completely.
- Do not use or store in dusty or dirty areas. This way can damage its detachable parts and electronic components.
- Do not store in excessive heat place. High temperatures can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.
- Do not store in excessive cold place. Otherwise, when the temperature rises to normal temperature, moisture will form inside which will destroy the board.
- Do not throw, knock or shake the device. Treating equipment roughly can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not paint the device. Smudges can make debris block detachable parts up and affect normal operation.
- Do not throw the battery into the fire to prevent the battery from exploding. Damaged batteries may also explode.

All the above suggestions apply equally to your device, batteries and accessories.
If any device is not operating properly.
Please take it to the nearest authorized service facility for repairing.

User Manual

Wireless Liquefied Petroleum Gas Detector ZA02D

Table of Content

1. Introduction

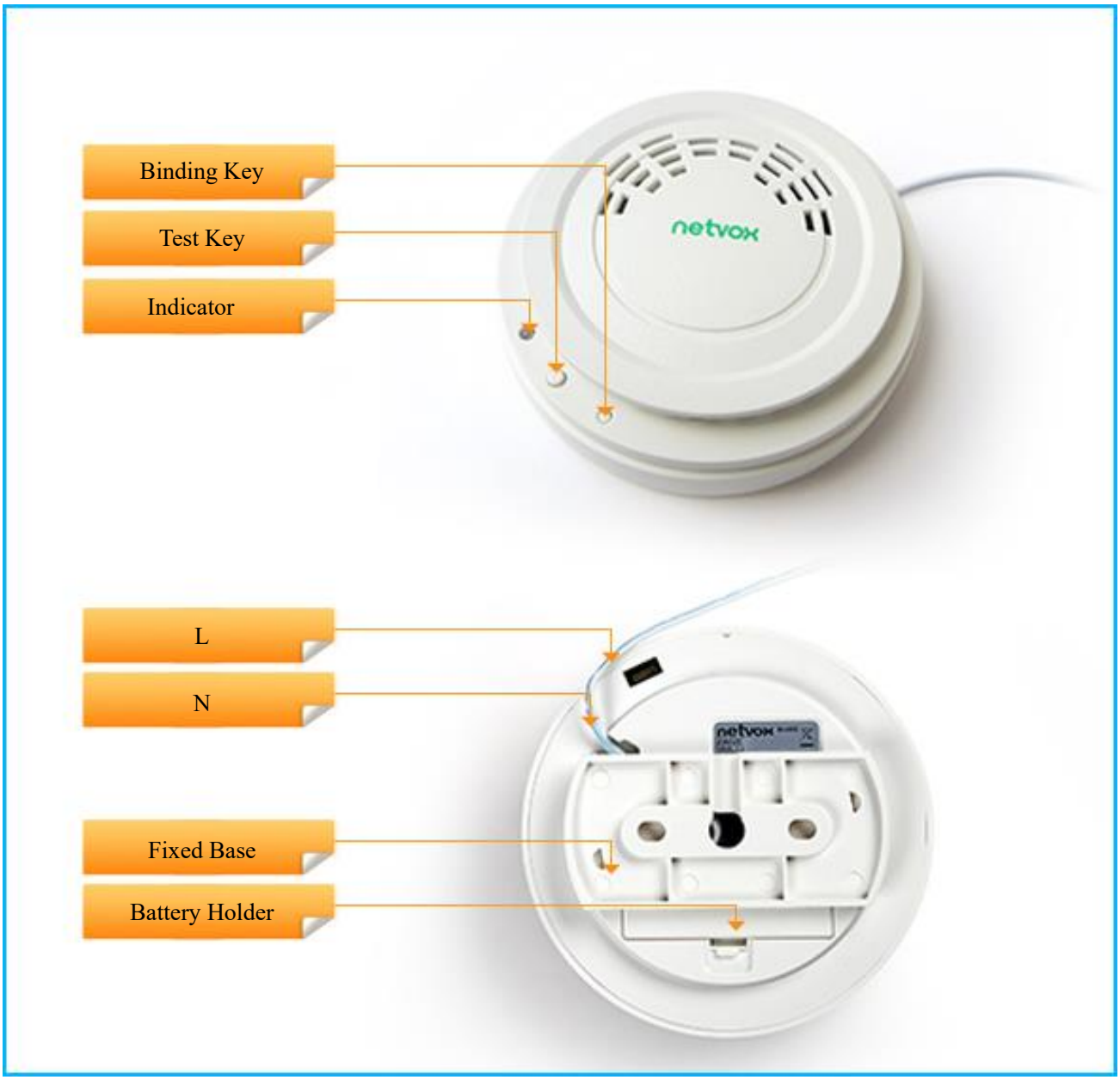
Netvox ZA02D, a liquefied petroleum gas detector with heat sensor, acts as a Router Device in ZigBee network and allows other devices to join the network as its sub-devices.

ZA01D is a liquefied petroleum gas detector which acts as a security device in the network. When the concentration of liquefied petroleum gas in the air exceeds the set limit, the device emits an alarm sound and sends the information about status changing to the enrolled CIE device at the same time. CIE will send a command to make the alarm device in the network sound an alarm to remind the user to ensure the user's safety.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Appearance



3. Specification

- Fully IEEE 802.15.4 compliant
- Utilizes 2.4GHz ISM band; up to 16 channels
- Power supply: 100~240VAC; 50/60Hz
- Up to 210 meters wireless transmission range in non-obstacle space
- Easy installation and configuration

4. Setting up ZA02D

4-1. Power On

Connect the device with a 100～240VAC 50/60HZ power supply at the source interface, and the red indicator will be on.

4-2. Join the ZigBee Network

In order to make ZA02D communicate with other devices on the Zigbee network, ZA02D must be joined to the network first.

Step1. Enable the permit-join function (valid for 60 seconds) of a coordinator or a router (please refer to the user manual of the coordinator or the router to enable the permit-join feature).

Step2. Turn on ZA02D. It will start to search and join the network.

Step3. The indicator will stay **green** after it is joined successfully. Otherwise, the indicator will stay **red**.

4-3. Enroll in the ZigBee Security System

After ZA02D successfully joins to the network, ZA02D will automatically match with CIE device, and register itself to the CIE. The enrollment has these 3 situations:

A. There is no CIE device or no compatible CIE device in the network → the indicator flashes **red twice**.

B. There is a compatible CIE device in the network, but it is failed to enroll → the indicator flashes **red 4 times**.

C. The enrollment is completed → the indicator flashes **red 6 times**.

NOTE: If the device has successfully registered to CIE, the red LED will flash 6 times when it is powered on every time.

4-4. Permit-Join

To allow other devices to join the ZigBee network, users could enable and disable the Permit-Join feature by the following steps:

A. Press the *Binding Key* to enable the Permit-Join feature. The default time is 60 seconds.

B. During the default time, press the *Binding Key* again to disable the Permit-Join feature.

4-5.alarm Test

To test the alarm feature of ZA02D, press the *Test Key* **once**.

A. ZA02D does not join a network and is not enrolled → it will issue alarm sound for 5 seconds. The indicator flashes **5 times**.

B. ZA02D joins the network and is enrolled → it sends notification to the CIE device and issues alarm sound. The indicator keeps flashing.

C. ZA02D joins the network but is not enrolled → it will issue alarm sound for 5 seconds and the indicator flashes **5 times**. Then, it sends the enrollment request. After the enrollment is successful, it will issue an alarm sound.

4-6. Air Command Alarm

When ZA02D receives the fire alarm from CIE, the device will turn on the buzzer and the indicator will flash alternately.

When the device receives the stop command of fire alarm, it will return to the normal state.

4-7. Triggered Alarm

When the concentration of the detectable gases in the air exceeds the set limit, the device emits an alarm sound and the indicator flashes alternately until the concentration drops below the limit. It will also send the alarm to CIE which it is enrolled to or to the other device which is bound with Cluster ID (0x0500). ZA02D can work as a temperature sensor. It alarms when the temperature is higher than 60℃.

- The sensing feature is ready after ZA02D is powered on for 5 minutes.
- When using for **the first time**, ZA02D will reach the best sensitivity after it is powered on for 48 hours.

- Detecting range: 600-6000ppm.
- The default setting (potentiometer in the middle): The concentration limit is 3000ppm.

  Adjust the potentiometer clockwise to the end: The concentration limit is 600ppm.

  Adjust the potentiometer counterclockwise to the end: The concentration limit is 6000ppm.

4-8. Announce

Press and hold the *Test Key* for 3 seconds the indicator flashes once.

4-9. Reboot

Press and hold the *Test Key* for 10 seconds and the indicator flashes once.

4-10. Restore to Factory Setting

To restore it to factory setting, please follow the steps:

Step1. Press and hold both *Binding Key* & *Test Key* for 5 seconds. The indicator will flash **red once**, please release both keys at this time.

Step2. After releasing both keys, the indicator will flash **20 times** meaning restore completed.

Step3. If the indicator stays **red** after restoring, it means device does not join in the network.

5. Home Automation Clusters for ZA02D

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by ZA02D.

1. End Point(s)： 0x01
2. Device ID：IAS Zone（0x0402）
3. EndPoint Cluster ID

Cluster ID for ZA02D	
Server side	Client side
EP: 0x01 (Device ID: 0x0402)	
Basic(0x0000)	
Identify(0x0003) IAS Zone(0x0500) Commissioning(0x0015)	

This lists the attributes of the basic information.

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*ZCLVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	-------	M
0x0001	*ApplicationVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	-------	O
0x0002	*StackVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	--------	O
0x0003	*HWVersion*	Unsigned 8-bit integer	0x00 – 0xff	Read only	--------	O
0x0004	*ManufacturerName*	Character string	0 – 32 bytes	Read only	netvox	O

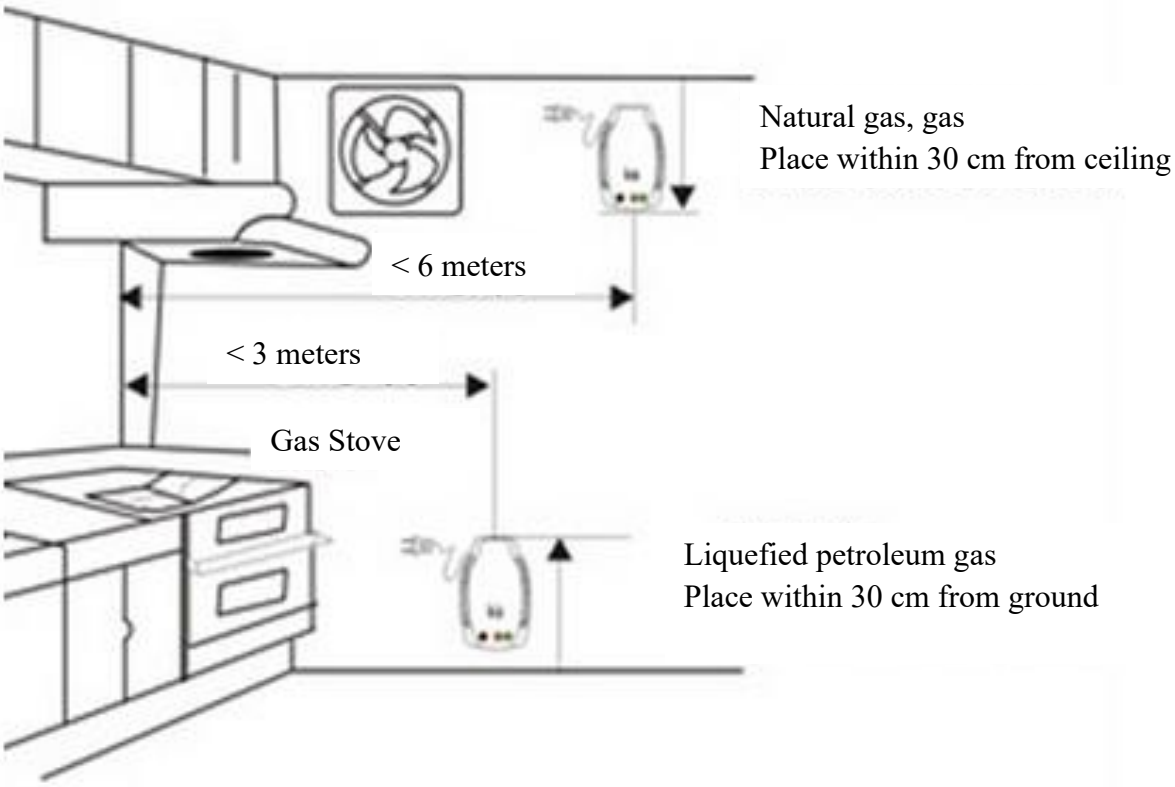
0x0005	*ModelIdentifier*	Character string	0 – 32 bytes	Read only	--------	O
0x0006	*DateCode*	Character string	0 – 16 bytes	Read only	-------	O
0x0007	*PowerSource*	8-bit Enumeration	0x00 – 0xff	Read only	0x04	M
0x0010	*LocationDescription*	Character string	0 – 16 bytes	Read/write	--------	O
0x0011	*PhysicalEnvironment*	8-bit Enumeration	0x00 – 0xff	Read/write	-------	O
0x0012	*DeviceEnabled*	Boolean	0x00 – 0x01	Read/write	0x01	O

6. Related Netvox Device

1. Z602A：Alarm with notification

2. Z203：Coordinator with CIE

7. Installation



8. Important Maintenance Instruction

Kindly pay attention to the following in order to achieve the best maintenance of the product:

- Keep the equipment dry. Rain, moisture and various liquids or water may contain minerals that can corrode electronic circuits. In case the device is wet, please dry it completely.
- Do not use or store in dusty or dirty areas. This way can damage its detachable parts and electronic components.
- Do not store in excessive heat place. High temperatures can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.
- Do not store in excessive cold place. Otherwise, when the temperature rises to normal temperature, moisture will form inside which will destroy the board.
- Do not throw, knock or shake the device. Treating equipment roughly can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not paint the device. Smudges can make debris block detachable parts up and affect normal operation.
- Do not throw the battery into the fire to prevent the battery from exploding. Damaged batteries may also explode.

All the above suggestions apply equally to your device, batteries and accessories.
If any device is not operating properly.
Please take it to the nearest authorized service facility for repairing.

User Manual

Wireless Smoke Detector (Photoelectric) ZA02E

Table of Content

1. Introduction

Netvox ZA02E, a wireless smoke detector (photoelectric), acts as a Router Device in ZigBee network and allows other devices to join in the network as the sub-devices.

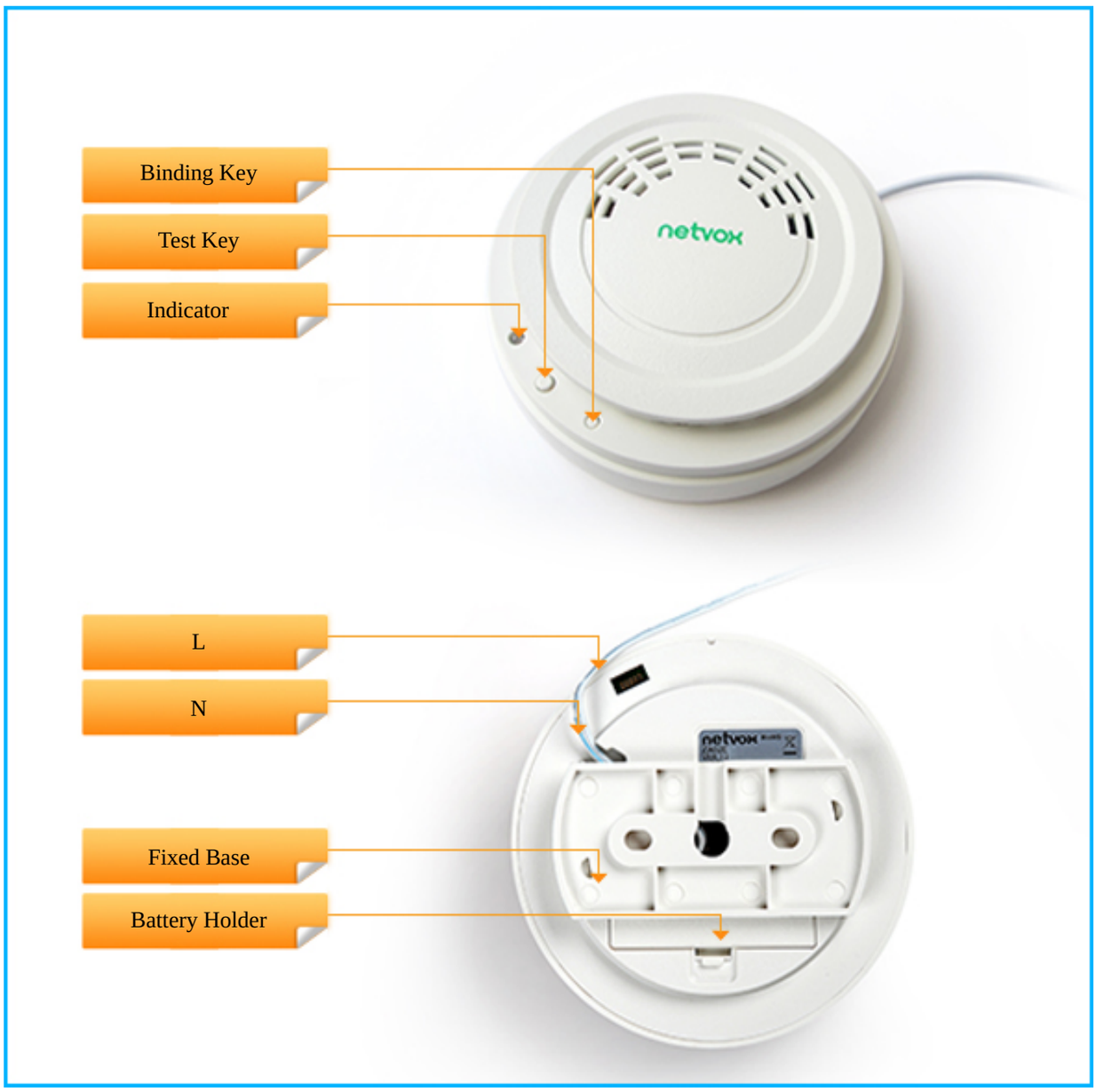
ZA02E is a smoke detector. When the concentration of smoke in the air exceeds the set limit, the device will send an alarm message to the enrolled equipment, so that the enrolled devices will send out an alarm.

ZA02E also has a temperature detection function. When the detected temperature exceeds 60 degrees Celsius, the device also sends an alarm message to the enrolled devices and makes them send alert.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Appearance



3. Specification

- Fully IEEE 802.15.4 compliant
- Utilizes 2.4GHz ISM band; up to 16 channels
- Power supply: 100-240VAC 50/60HZ
- Up to 210 meters wireless transmission range in non-obstacle space

4. Setting up ZA02E

4-1. Power On

Connect the device with a 100～240VAC 50/60Hz power supply at the source interface, and the red indicator will be on.

4-2. Join the ZigBee Network

In order to make ZA02E communicate with other devices on the Zigbee network, ZA02E must be joined to the network first.

Step1. Enable the permit-join function (valid for 60 seconds) of a coordinator or a router (please refer to the user manual of the coordinator or the router to enable the permit-join feature).

Step2. Turn on ZA02E. It will start to search and join the network.

Step3. The indicator will stay **green** after it is joined successfully. Otherwise, the indicator will stay **red**.

4-3. Enroll in the ZigBee Security System

After ZA02E successfully joins to the network, ZA02E will automatically match with CIE device, and register itself to the CIE. The enrollment has these 3 situations:

A. There is no CIE device or no compatible CIE device in the network → the indicator flashes **red twice**.

B. There is a compatible CIE device in the network, but it is failed to enroll → the indicator flashes **red 4 times**.

C. The enrollment is completed → the indicator flashes **red 6 times**.

NOTE: If the device has successfully registered to CIE, the red LED will flash 6 times when it is powered on every time.

4-4. Permit-Join

To allow other devices to join the ZigBee network, users could enable and disable the Permit-Join feature by the following steps:

A. Press the *Binding Key* to enable the Permit-Join feature. The default time is 60 seconds.

B. During the default time, press the *Binding Key* again to disable the Permit-Join feature.

4-5. Alert Test

To test the alarm feature of ZA02E, press the *Test Key* **once**.

A. ZA02E does not join a network and is not enrolled → it will issue alarm sound for 5 seconds. The indicator flashes **5 times**.
B. ZA02E joins the network and is enrolled → it sends notification to the CIE device and issues alarm sound. The indicator keeps flashing.
C. ZA02E joins the network but is not enrolled → it will issue alarm sound for 5 seconds and the indicator flashes **5 times**. Then, it sends the enrollment request. After the enrollment is successful, it will issue an alarm sound.

4-6. Air Command Alarm

When ZA02E receives the fire alarm from CIE, the device will turn on the buzzer and the indicator will flash alternately.
When the device receives the stop command of fire alarm, it will return to the normal state.

4-7. Smoke Detection

When the concentration of the smoke in the air exceeds the set limit, the device emits an alarm sound and the indicator flashes alternately.
The sensitivity level can be adjusted to change the alarm limit of the smoke concentration. When the sensitivity is increased, the alarm limit of smoke concentration becomes lower; otherwise, the alarm limit becomes higher. The sensitivity can be adjusted as needed to reach the required alarm limit.

Note: When the sensitivity is adjusted too high, it will cause the alarm to fail to stop.
User needs to restart the device.

4-8. Temperature Detection

After the device is powered on, it will start to detect the current temperature, and then it will detect once every 60 seconds. When the temperature exceeds 60 degrees, a high temperature emergency alarm is issued to the enrolled device. The buzzer is also turned on and the indicator flashes alternately.

4-9. Announce and Reboot

Press and hold the *Test Key* for 3 seconds the indicator flashes once.
Press and hold the *Test Key* for 10 seconds and the indicator flashes once.

4-10. Restore to Factory Setting

To restore it to factory setting, please follow the steps:

Step1. Press and hold both *Binding Key* & *Test Key* for 5 seconds. The indicator will flash **red once**, please release both keys at this time.

Step2. After releasing both keys, the indicator will flash **20 times** meaning restore completed.

Step3. If the indicator stays **red** after restoring, it means device does not join in the network.

5. Home Automation Clusters for ZA02E

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by ZA02E.

1. End Point(s)： 0x01
2. Device ID：IAS Zone（0x0402）
3. EndPoint Cluster ID

Cluster ID for ZA02E	
Server side	Client side
EP 0X0A (Device ID: 0x0402)	
Basic(0x0000)	*None*
Identify(0x0003)	
Commission（0x0015）	
IAS Zone(0x0500)	
Diagnostics Information(0x0B05)	

This lists the attributes of the basic information.

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	ZCLVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x03	M
0x0001	ApplicationVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x1F	O
0x0002	StackVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x33	O
0x0003	HWVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x29	O
0x0004	ManufacturerName	Character string	0 – 17 bytes	Read only	netvox	O
0x0005	ModelIdentifier	Character string	0 – 17bytes	Read only	ZA02EE3R	O
0x0006	DateCode	Character string	0 – 17 bytes	Read only	2016.01.20	O

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0007	PowerSource	8-bit Enumeration	0x00 – 0xff	Read only	0x81	M
0x0010	LocationDescription	Character string	0 – 17 bytes	Read/write		O
0x0011	PhysicalEnvironment	8-bit Enumeration	0x00 –0xff	Read/write	0x00	O
0x0012	DeviceEnabled	Boolean	0x00 –0 0x01	Read/write	0x01	M

6. Related Netvox Device

1. Z602A：Alarm with notification

2. Z203：Coordinator with CIE

7. Important Maintenance Instruction

Kindly pay attention to the following in order to achieve the best maintenance of the product:

- Keep the equipment dry. Rain, moisture and various liquids or water may contain minerals that can corrode electronic circuits. In case the device is wet, please dry it completely.
- Do not use or store in dusty or dirty areas. This way can damage its detachable parts and electronic components.
- Do not store in excessive heat place. High temperatures can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.
- Do not store in excessive cold place. Otherwise, when the temperature rises to normal temperature, moisture will form inside which will destroy the board.
- Do not throw, knock or shake the device. Treating equipment roughly can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not paint the device. Smudges can make debris block detachable parts up and affect normal operation.
- Do not throw the battery into the fire to prevent the battery from exploding. Damaged batteries may also explode.

All the above suggestions apply equally to your device, batteries and accessories.
If any device is not operating properly.
Please take it to the nearest authorized service facility for repairing.

User Manual

Wireless Smoke Detector (Photoelectric) ZA02F

Table of Content

1. Introduction

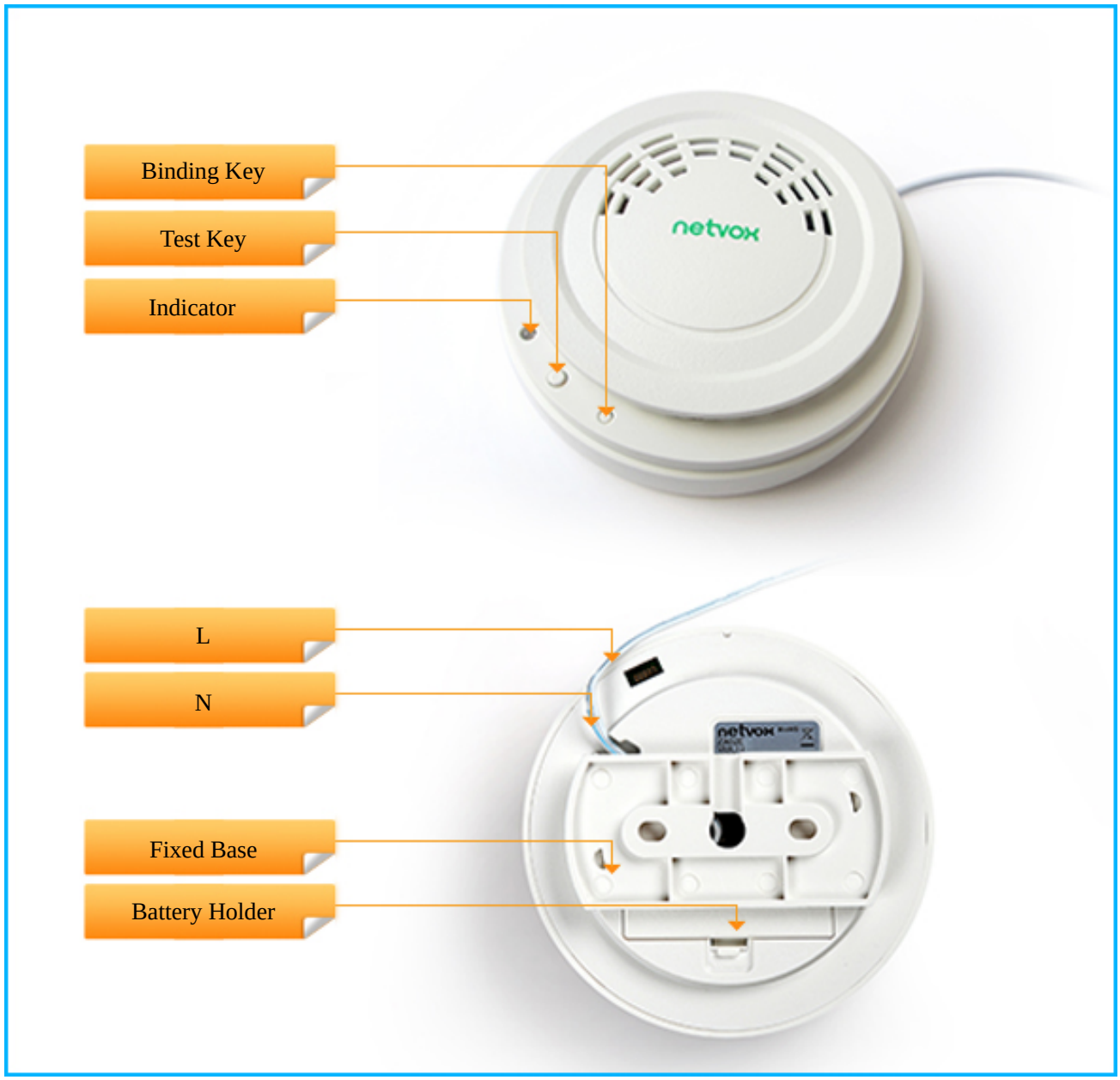
ZA02F is a wireless smoke detector (Photoelectric). When the concentration of smoke in the air exceeds the set limit, the device will send an alarm message to the enrolled equipment, so that the enrolled devices will send an alarm. ZA02F itself also issues an alarm to remind the user to ensure the user's safety.

ZA02F also has a temperature detection function. When the detected temperature exceeds 60 degrees Celsius, the device also sends an alarm message to the enrolled devices and makes them issue the alarm.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Appearance



3. Specification

- Fully IEEE 802.15.4 compliant
- Utilizes 2.4GHz ISM band; up to 16 channels
- Power supply: DC12V 50/60HZ
- Up to 210 meters wireless transmission range in non-obstacle space

4. Setting up ZA02F

4-1. Power On

Connect the device with a 100～240VAC 50/60Hz power supply at the source interface, and the red indicator will be on.

4-2. Join the ZigBee Network

In order to make ZA02F communicate with other devices on the Zigbee network, ZA02F must be joined to the network first.

Step1. Enable the permit-join function (valid for 60 seconds) of a coordinator or a router (please refer to the user manual of the coordinator or the router to enable the permit-join feature).

Step2. Turn on ZA02F. It will start to search and join the network.

Step3. The indicator will stay **green** after it is joined successfully. Otherwise, the indicator will stay **red**.

4-3. Enroll in the ZigBee Security System

After ZA02F successfully joins to the network, ZA02F will automatically match with CIE device, and register itself to the CIE. The enrollment has these 3 situations:

A. There is no CIE device or no compatible CIE device in the network → the indicator flashes **red twice**.

B. There is a compatible CIE device in the network, but it is failed to enroll → the indicator flashes **red 4 times**.

C. The enrollment is completed → the indicator flashes **red 6 times**.

NOTE:

If the device has successfully registered to CIE, the red LED will flash 6 times when it is powered on every time.

4-4. Permit-Join

To allow other devices to join the ZigBee network, users could enable and disable the Permit-Join feature by the following steps:

A. Press the *Binding Key* to enable the Permit-Join feature. The default time is 60 seconds.

B. During the default time, press the *Binding Key* again to disable the Permit-Join feature.

4-5. Alarm Test

To test the alarm feature of ZA02F, press the *Test Key* **once**.

A. ZA02F does not join a network and is not enrolled → it will issue alarm sound for 5 seconds. The indicator flashes **5 times**.

B. ZA02F joins the network and is enrolled → it sends notification to the CIE device and issues alarm sound. The indicator keeps flashing.

C. ZA02F joins the network but is not enrolled → it will issue alarm sound for 5 seconds and the indicator flashes **5 times**. Then, it sends the enrollment request. After the enrollment is successful, it will issue an alarm sound.

4-6. Air Command Alarm

When ZA02F receives the fire alarm from CIE, the device will turn on the buzzer and the indicator will flash alternately.

When the device receives the stop command of fire alarm, it will return to the normal state.

4-7. Smoke Detection

When the concentration of the smoke in the air exceeds the set limit, the device emits an alarm sound and the indicator flashes alternately.

The sensitivity level can be adjusted to change the alarm limit of the smoke concentration. When the sensitivity is increased, the alarm limit of smoke concentration becomes lower; otherwise, the alarm limit becomes higher. The sensitivity can be adjusted as needed to reach the required alarm limit.

Note: When the sensitivity is adjusted too high, it will cause the alarm to fail to stop.

User needs to restart the device.

4-8. Temperature Detection

After the device is powered on, it will start to detect the current temperature, and then it will detect once every 60 seconds. When the temperature exceeds 60 degrees, a high temperature emergency alarm is issued to the enrolled device. The buzzer is also turned on and the indicator flashes alternately.

4-9. Announce and Reboot

Press and hold the *Test Key* for 3 seconds the indicator flashes once.

Press and hold the *Test Key* for 10 seconds and the indicator flashes once.

4-10. Restore to Factory Setting

To restore it to factory setting, please follow the steps:

Step1. Press and hold both *Binding Key* & *Test Key* for 5 seconds. The indicator will flash **red once**, please release both keys at this time.

Step2. After releasing both keys, the indicator will flash **20 times** meaning restore completed.

Step3. If the indicator stays **red** after restoring, it means device does not join in the network.

5. Home Automation Clusters for ZA02F

A cluster is a set of related attributes and commands which are grouped together to provide a specific function. A simple example of a cluster would be the On/Off cluster which defines how an on/off switch behaves. This table lists the clusters which are supported by ZA02F.

1. End Point(s)： 0x01

2. Device ID：IAS Zone（0x0402）

3. EndPoint Cluster ID

Cluster ID for ZA02F	
Server side	Client side
EP 0X0A (Device ID: 0x0402)	
Basic(0x0000)	*None*
Identify(0x0003)	
Commission（0x0015）	
IAS Zone(0x0500)	
Diagnostics Information(0x0B05)	

This lists the attributes of the basic information.

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	ZCLVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x03	M
0x0001	ApplicationVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x1F	O
0x0002	StackVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x33	O
0x0003	HWVersion	Unsigned 8-bit integer	0x00 – 0xff	Read only	0x29	O
0x0004	ManufacturerName	Character string	0 – 17 bytes	Read only	netvox	O
0x0005	ModelIdentifier	Character string	0 – 17bytes	Read only	ZA02FE3R	O
0x0006	DateCode	Character string	0 – 17 bytes	Read only	2015.12.04	O
0x0007	PowerSource	8-bit Enumeration	0x00 – 0xff	Read only	0x84	M

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0010	LocationDescription	Character string	0 – 17 bytes	Read/write		O
0x0011	PhysicalEnvironment	8-bit Enumeration	0x00 –0xff	Read/write	0x00	O
0x0012	DeviceEnabled	Boolean	0x00 –0 0x01	Read/write	0x01	M

6. Related Netvox Device

1. Z602A：Alarm with notification

2. Z203：Coordinator with CIE

7. Important Maintenance Instruction

Kindly pay attention to the following in order to achieve the best maintenance of the product:

- Keep the equipment dry. Rain, moisture and various liquids or water may contain minerals that can corrode electronic circuits. In case the device is wet, please dry it completely.
- Do not use or store in dusty or dirty areas. This way can damage its detachable parts and electronic components.
- Do not store in excessive heat place. High temperatures can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.
- Do not store in excessive cold place. Otherwise, when the temperature rises to normal temperature, moisture will form inside which will destroy the board.
- Do not throw, knock or shake the device. Treating equipment roughly can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not paint the device. Smudges can make debris block detachable parts up and affect normal operation.
- Do not throw the battery into the fire to prevent the battery from exploding. Damaged batteries may also explode.

All the above suggestions apply equally to your device, batteries and accessories.

If any device is not operating properly.

Please take it to the nearest authorized service facility for repairing.