

SR-9101-PIR-4IN1

ZigBee 4 In 1 Multi Sensor



Eigenschaften / Features

Der Zigbee-Sensor ist ein batteriebetriebenes 4-in-1-Gerät mit geringem Stromverbrauch, das PIR-Bewegungssensor, Temperatursensor, Feuchtigkeitssensor und Beleuchtungssensor kombiniert. Der Auslöser und die Empfindlichkeit des PIR-Bewegungssensors können konfiguriert werden. Der Sensor unterstützt einen Alarm bei niedriger Batterieleistung. Wenn die Batterieleistung weniger als 5 % beträgt, werden der Auslöser des Bewegungssensors und der Bericht verboten, und der Alarm wird jede Stunde gemeldet, bis die Batterieleistung mehr als 5 % beträgt. Der Sensor eignet sich für Smart-Home-Anwendungen, die eine sensorbasierte Automatisierung benötigen.

Zigbee 3.0-konform

PIR-Bewegungssensor, großer Erfassungsbereich

Temperatursensor, automatisiert die Heizung oder Kühlung Ihres Hauses

Luftfeuchtigkeitssensor, automatisiert die Be- oder Entfeuchtung Ihres Hauses

Messung der Beleuchtungsstärke, Tageslichtnutzung

Autonome sensorgestützte Steuerung

OTA-Firmware-Upgrade

Installation zur Wandmontage

The Zigbee sensor is a battery powered low power consumption 4 in 1 device that combines PIR motion sensor, temperature sensor, humidity sensor, and illuminance sensor. The PIR motion sensor trigger and sensitivity can be configured. The sensor supports low battery power alarm, if the power is lower than 5%, the motion sensor trigger and report will be forbidden, and the alarm will be reported every one hour until the battery power is higher than 5%. The sensor is suitable for smart home applications which need sensor based automation. Zigbee 3.0-konform

Zigbee 3.0 compliant

PIR motion sensor, long detection range

Temperature sensing, automates your home heating or cooling

Humidity sensing, automates your home humidifying or dehumidifying

Illuminance measuring, daylight harvesting

Autonomous sensor-based control

OTA firmware upgrade

Wall mount installation

Can be use for indoor applications

Technische Daten / Technical Data

Physical Information

Dimensions	55.5*55.5*23.7mm
Material / Color	ABS / White

Electrical Information

Operate Voltage	3VDC (2*AAA Batteries)
Standby Consumption	10uA

Wireless Communication

Radio Frequency	2.4 GHz
Wireless Protocol	Zigbee 3.0
Wireless Range	100 feet (30m) Line of Sight
Radio Certification	CE

Sensing

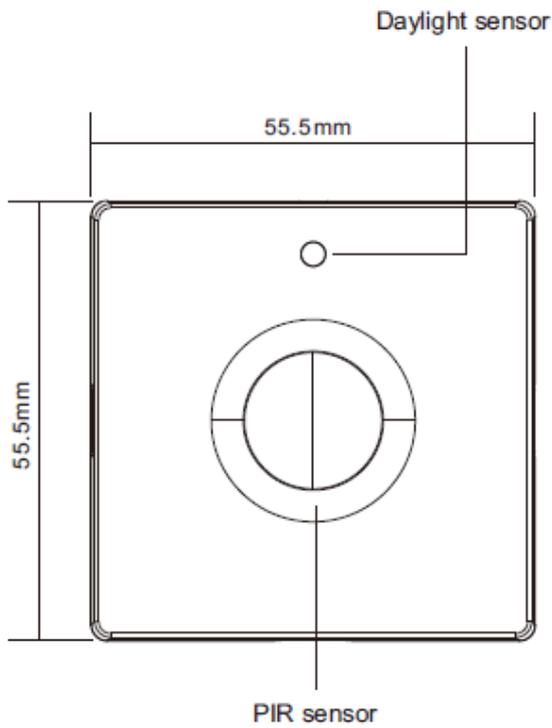
Motion Sensor Type	PIR sensor
PIR sensor Detection Range	Max. 7 meters
Recommended Installation Height	Wall mount, 2.4 meters
Temperature Range and Precision	-40°C~+125°C, ±0.1°C
Humidity Range and Precision	0 - 100% RH (non-condensing), ±3%
Illuminance Measuring Range	0~10000 lux

Environment

Operating Temperature Range	32°F to 104°F / 0°C to 40°C (indoor use only)
Operating Humidity	0-95% (non condensing)
Waterproof Rating	IP20
Safety Certification	CE

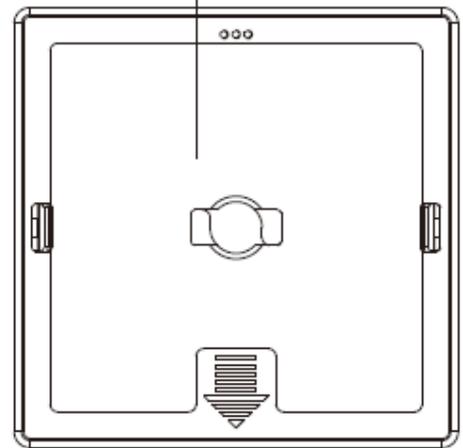
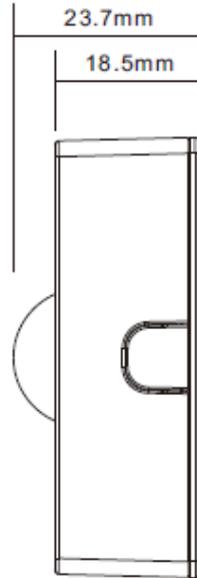
Abmessungen / Dimension

Without Frame



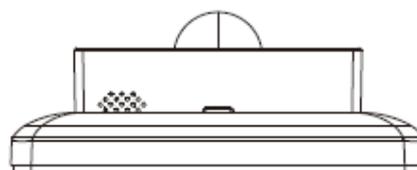
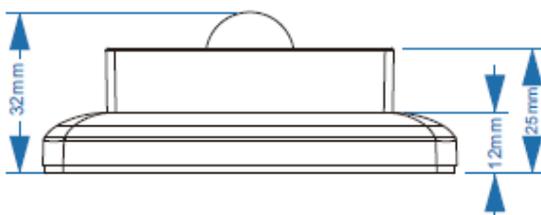
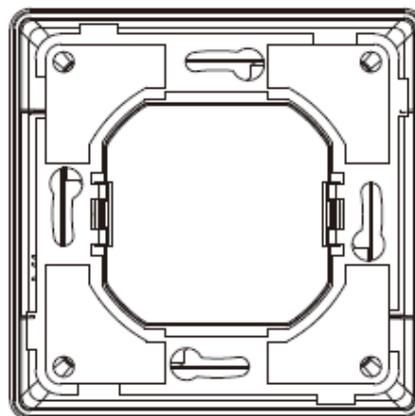
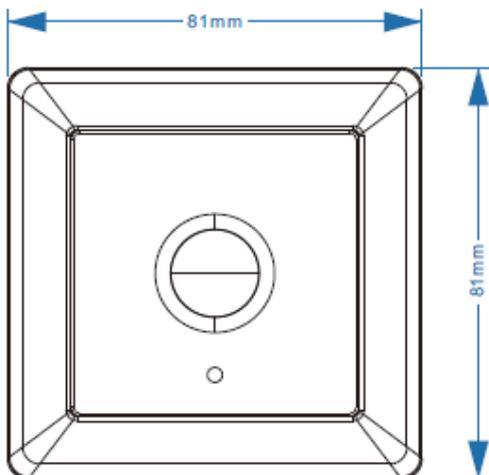
Front Side

Battery compartment cover, remove the cover, you can see Prog. button & LED indicator inside. Before the first use, please remove the insulator film



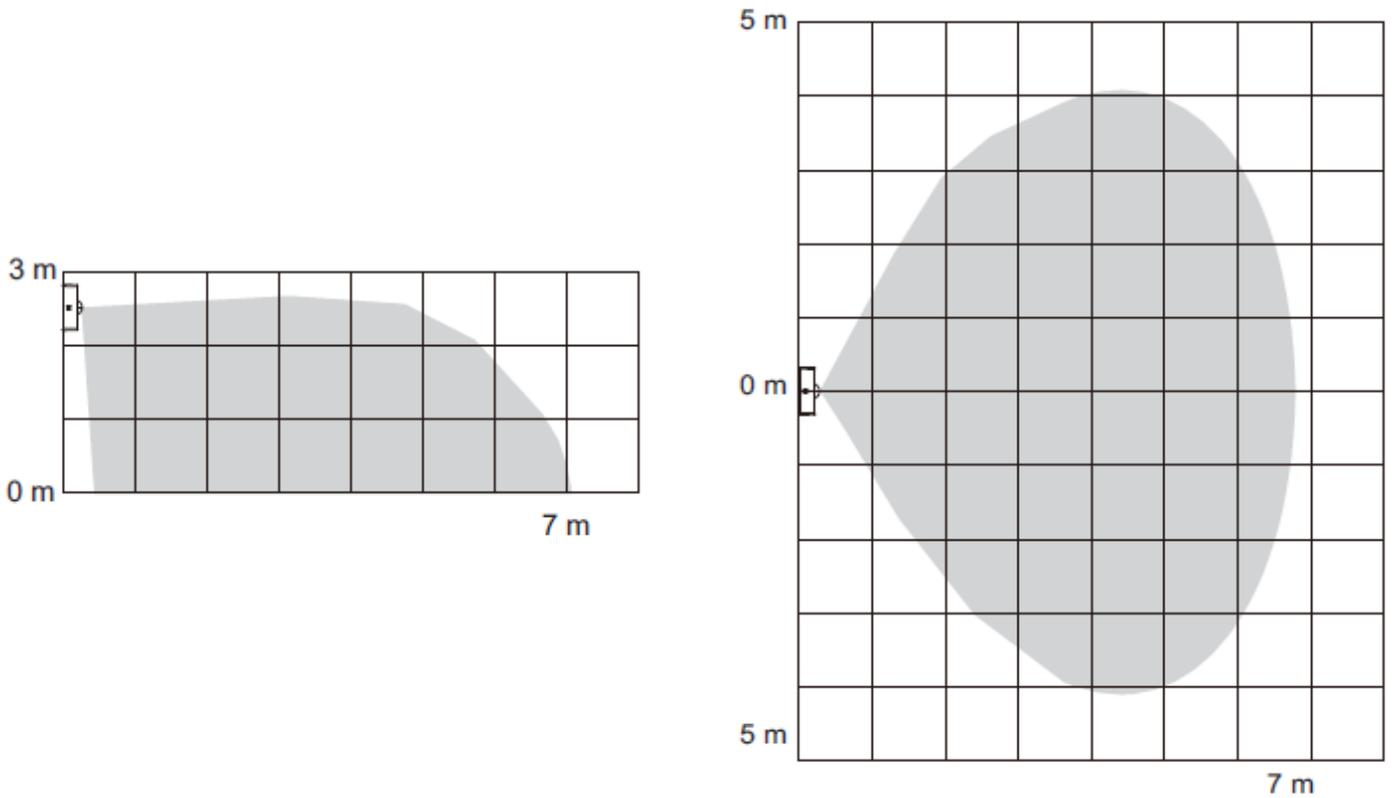
Back Side

With Frame



Detection Pattern

Detection range of the Motion Sensor is shown below. Actual range of the Sensor can be influenced by environmental conditions.



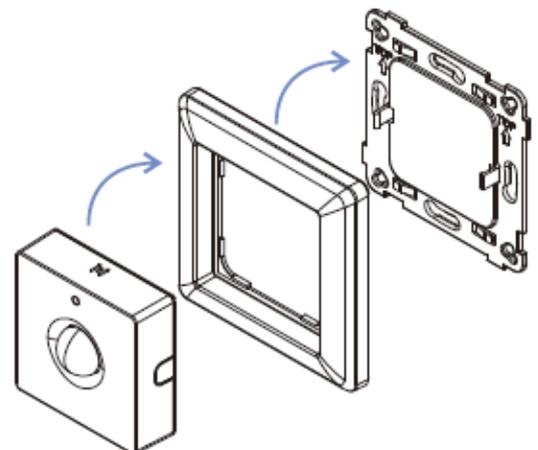
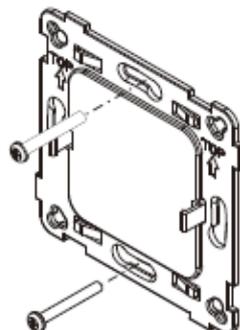
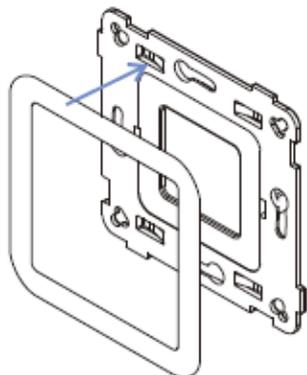
Installation

Physical Installation

Method 1: Stick 3M glue on the back of the bracket and then stick the bracket to the wall

Method 2: Screw the bracket to the wall

After the bracket is fixed, clip the frame and control part to the bracket in sequence



Bedienung / Operation

1. Zigbee-Netzwerk-Kopplung

1. Zigbee Network Pairing

Schritt 1: Entfernen Sie das Gerät aus dem vorherigen Zigbee-Netzwerk, falls es bereits hinzugefügt wurde, andernfalls wird die Kopplung fehlschlagen. Bitte beachten Sie den Abschnitt "Manuelles Zurücksetzen auf die Werkseinstellungen".

Step 1: Remove the device from previous zigbee network if it has already been added to, otherwise pairing will fail. Please refer to the part "Factory Reset Manually".

Schritt 2: Wählen Sie auf der Schnittstelle Ihres ZigBee-Gateways oder -Hubs die Option "Gerät hinzufügen" und gehen Sie in den Pairing-Modus, wie vom Gateway angewiesen.

Step 2: From your ZigBee gateway or hub interface, choose to add device and enter Pairing mode as instructed by the gateway.

Schritt 3: Methode 1: Drücken Sie kurz die "Prog. Die LED-Anzeige blinkt schnell und wechselt in den Netzwerk-Pairing-Modus (Beacon-Anforderung), der 60 Sekunden lang andauert. Wenn die Zeit abgelaufen ist, wiederholen Sie diesen Schritt. Methode 2: Vergewissern Sie sich, dass das Gerät nicht mit einem Zigbee-Netzwerk gekoppelt ist, setzen Sie die Stromversorgung des Geräts zurück, indem Sie die Batterien entfernen und wieder einsetzen, dann geht das Gerät automatisch in den Netzwerk-Kopplungsmodus über, der 10 Sekunden lang dauert. Nach Ablauf der Zeit wiederholen Sie diesen Schritt.

Step 3: Method 1: short press the "Prog." Button 3 times continuously within 1.5 seconds, the LED indicator will flash rapidly and enter into network pairing mode (beacon request) which lasts for 60 seconds. Once timeout, repeat this step. Method 2: make sure the device has not paired to any Zigbee network, reset power of the device by removing the batteries and installing them again, then the device will enter into network pairing mode automatically which lasts for 10 seconds. Once timeout, repeat this step.

Schritt 4: Die LED-Anzeige leuchtet 3 Sekunden lang, wenn das Gerät erfolgreich mit dem Netzwerk gepaart wurde, dann erscheint das Gerät im Menü Ihres Gateways und kann über das Gateway oder die Hub-Schnittstelle gesteuert werden.

Step 4: The LED indicator will stay solid on for 3 seconds if the device is paired to the network successfully, then the device will appear in your gateway's menu and can be controlled through gateway or hub interface.

2. Trennen von einem Zigbee-Netzwerk

2. Removing from a Zigbee Network

Halten Sie die Prog.-Taste gedrückt, bis die LED-Anzeige viermal langsam blinkt, und lassen Sie dann die Taste los. Die LED-Anzeige leuchtet dann drei Sekunden lang dauerhaft, um anzuzeigen, dass das Gerät erfolgreich aus dem Netzwerk entfernt wurde.

Hinweis: Das Gerät wird aus dem Netzwerk entfernt und alle Bindungen werden gelöscht.

Press and hold the Prog. button until LED indicator blinks 4 times slowly, then release the button, LED indicator will then stay solid on for 3 seconds to indicate that the device is removed from the network successfully.

Note: the device will be removed from the network and all bindings will be cleared.

3. Manuelles Zurücksetzen auf die Werkseinstellungen

3. Factory Reset Manually

Während des Vorgangs blinkt die LED-Anzeige langsam mit einer Frequenz von 0,5 Hz. Die LED-Anzeige leuchtet 3 Sekunden lang durchgehend, was bedeutet, dass das Gerät erfolgreich auf die Werkseinstellungen zurückgesetzt wurde.

Hinweis: Durch das Zurücksetzen auf die Werkseinstellungen wird das Gerät aus dem Netzwerk entfernt, alle Bindungen werden gelöscht, alle Parameter werden auf die Werkseinstellungen zurückgesetzt und alle Berichtskonfigurationseinstellungen werden gelöscht.

Press and hold the Prog. button for over 10 seconds, during the process, the LED indicator will blink slowly at the frequency of 0.5Hz, the LED indicator will stay solid on for 3 seconds which means factory reset successfully, then LED will turn off.

Note: factory reset will remove the device from the network, clear all bindings, restore all parameters to factory default setting, clear all report config settings.

Bedienung / Operation

4. Prüfen, ob das Gerät bereits in einem Zigbee-Netzwerk ist

4. Check Whether the Device is Already in a Zigbee Network

Methode 1: Drücken Sie kurz die Taste Prog. Wenn die LED-Anzeige 3 Sekunden lang leuchtet, bedeutet dies, dass das Gerät bereits zu einem Netzwerk hinzugefügt wurde. Wenn die LED-Anzeige dreimal langsam blinkt, bedeutet dies, dass das Gerät noch keinem Netzwerk hinzugefügt wurde.

Methode 2: Setzen Sie die Stromversorgung des Geräts zurück, indem Sie die Batterien herausnehmen und wieder einsetzen. Wenn die LED-Anzeige schnell blinkt, bedeutet dies, dass das Gerät keinem Netzwerk hinzugefügt wurde. Wenn die LED-Anzeige 3 Sekunden lang dauerhaft leuchtet, bedeutet dies, dass das Gerät keinem Netzwerk hinzugefügt wurde.

Method 1: short press Prog. button, if LED indicator stays solid on for 3 seconds, this means the device has already been added to a network. If LED indicator blinks 3 times slowly, this means the device has not been added to any network.

Method 2: reset power of the device by removing the batteries and installing them again, if the LED indicator blinks rapidly, it means the device has not been added to any network. If LED indicator stays solid on for 3 seconds, this means the device has not been added to any network.

5. Interaktion mit drahtlosen Daten

5. Wireless Data Interaction

Da es sich bei dem Gerät um ein Gerät im Ruhezustand handelt, muss es aufgeweckt werden.

Wenn das Gerät bereits zu einem Netzwerk hinzugefügt wurde, wird es durch einen Tastendruck aufgeweckt. Wenn dann innerhalb von 3 Sekunden keine Daten vom Gateway kommen, geht das Gerät wieder in den Ruhezustand.

Since the device is a sleep device, it needs to be awakened.

If the device has already been added to a network, when there is a button trigger, the device will be awakened, then if there is no data from the gateway within 3 seconds, the device will go to sleep again.

ZigBee Interface

1. Zigbee application endpoints:

Endpoint	Profile	Application
0(0x00)	0x0000 (ZDP)	ZigBee Device Object (ZDO) - standard management features
1(0x01)	0x0104 (HA)	Occupancy Sensor, power, OTA, DeviceID = 0x0107
2(0x02)	0x0104 (HA)	IAS Zone(), DeviceID = 0x0402
3(0x03)	0x0104 (HA)	Temperature Sensor, DeviceID = 0x0302
4(0x04)	0x0104 (HA)	Humidity Sensor, DeviceID = 0x0302
5(0x05)	0x0104 (HA)	Light Sensor, DeviceID = 0x0106

1.1 Application Endpoint #0 - ZigBee Device Object

- Application profile Id 0x0000
- Application device Id 0x0000
- Supports all mandatory clusters

ZigBee Interface

1.2 Application Endpoint #1 - Occupancy Sensor

Cluster	Supported	Description
0x0000	server	Basic Provides basic information about the device, such as the manufacturer ID, vendor and model name, stack profile, ZCL version, production date, hardware revision etc. Allows a factory reset of attributes, without the device leaving the network.
0x0001	server	Power Configuration Attributes for determining detailed information about a device' s power source (s) and for configuring under/over voltage alarms.
0x0003	server	Identify Allows to put the endpoint into identify mode. Useful for identifying/locating devices and required for Finding & Binding.
0x0009	server	Alarms
0x0019	Client	OTA Upgrade Pull-oriented firmware upgrade. Searches the network for mating servers and allows the server to control all stages of the upgrade process, including which image to download, when to download, at what rate and when to install the downloaded image.
0x0406	server	Occupancy Sensing Mainly used based on PIR sensor
0x0500	server	IAS Zone Mainly used based on PIR sensor

ZigBee Interface

1.2.1 Basic -0x0000 (Server)

Attributes Supported:

Attribute	Type	Description
0x0000	INT8U, read-only,	ZCLVersion 0x03
0x0001	INT8U, read-only,	ApplicationVersion This is the software version number of the application
0x0002	INT8U, read-only,	StackVersion
0x0003	INT8U, read-only,	HWVersion Hardware version 1
0x0004	string, read-only,	ManufacturerName "Sunricher"
0x0005	string, read-only,	ModelIdentifier When Power up, device will broadcast
0x0006	string, read-only,	DateCode NULL
0x0007	ENUM8, read-only	PowerSource Power supply type of the device, 0x03 (battery)
0x0008	ENUM8, read-only	GenericDevice-Class 0xFF
0x0009	ENUM8, read-only	GenericDevice-Type 0xFF
0x000A	octstr read-only	ProductCode 00
0x000B	string, read-only	ProductURL NULL
0x4000	string, read-only	Sw build id 6.10.0.0_r1

Command supported:

Command	Description
0x00	Reset to Factory Defaults Command On receipt of this command, the device resets all the attributes of all its clusters to their factory defaults. Note that networking functionality, bindings, groups, or other persistent data are not affected by this command.

ZigBee Interface

1.2.2 Power Configuration-0x0001(Server)

Attributes Supported:

Attribute	Type	Description
0x0020	Int8u, read-only, reportable	BatteryVoltage Current device battery power, unit is 0.1V Min interval: 1s, Max interval: 28800s(8 hour), reportable change: 2 (0.2V)
0x0021	Int8u, read-only, reportable	BatteryPercentageRemaining Remaining battery power percentage, 1-100 (1%-100%) Min interval: 1s, Max interval: 28800s(8 hour), reportable change: 5 (5%)
0x0035	MAP8, reportable	BatteryAlarmMask Bit0 enables BatteryVoltageMinThreshold alarm
0x003e	map32, read-only, reportable	BatteryAlarmState Bit0, Battery voltage too low to continue operating the device' s radio (i.e., BatteryVoltageMinThreshold value has been reached)

1.2.3 Identify-0x0003 (Server)

Attributes Supported:

Attribute	Type	Description
0x0000	Int16u	Identify time

Sever can receive the following commands:

CmdID	Description
0x00	Identify
0x01	IdentifyQuery

Sever can generate the following commands:

CmdID	Description
0x00	IdentifyQueryResponse

ZigBee Interface

1.2.4 OTA Upgrade-0x0019 (Client)

When the device has joined a network it will automatically auto scan for a OTA upgrade server in the network. If it finds a server an auto bind is created and ones every 10mins it will automatically send its "current file version" to the OTA upgrade server. It is the server that initiates the firmware upgrade process.

Attributes Supported:

Attribute	Type	Description
0x0000	EUI64, read-only	UpgradeServerID 0xfffffffffffffff, is an invalid IEEE address.
0x0001	Int32u, read-only	FileOffset The parameter indicates the current location in the OTA upgrade image. It is essentially the (start of the) address of the image data that is being transferred from the OTA server to the client. The attribute is optional on the client and is made available in a case where the server wants to track the upgrade process of a particular client.
0x0002	Int32u, Read-only	OTA Current File Version When Power up, device will broadcast
0x0006	enum8 , read-only	ImageUpgradeStatus The upgrade status of the client device. The status indicates where the client device is at in terms of the download and upgrade process. The status helps to indicate whether the client has completed the download process and whether it is ready to upgrade to the new image.

1.2.5 Occupancy Sensing-0x0406(Server)

Attributes Supported:

Attribute	Type	Description
0x0000	MAP8, read-only reportable	Occupancy
0x0001	ENUM8, read-only	Occupancy Sensor Type The type is always 0x00 (PIR)
0x0002	MAP8, read-only	Occupancy Sensor Type Bitmap The type is always 0x01 (PIR)
0x0010	int16U, reportable read-only	PIROccupiedToUnoccupiedDelay No trigger during this period since last trigger, when time expires, Unoccupied will be marked. Value range is 3~28800, unit is S, default value is 30.

ZigBee Interface

Proprietary Attributes:

Attribute	Type	Manufacturer Code	Description
0x1000	ENUM8, reportable	0x1224	PIR Sensor Sensitivity Default value is 15. 0: disable PIR 8~255: enable PIR, corresponding PIR sensitivity, 8 means the highest sensitivity, 255 means the lowest sensitivity.
0x1001	Int8u, reportable	0x1224	Motion detection blind time PIR sensor is "blind" (insensitive) to motion after last detection for the amount of time specified in this attribute, unit is 0.5S, default value is 15. Available settings: 0-15 (0.5-8 seconds, time [s] = 0.5 x (value+1))
0x1002	ENUM8, reportable	0x1224	Motion detection - pulse counter This attribute determines the number of moves required for the PIR sensor to report motion. The higher the value, the less sensitive the PIR sensor is. It is not recommended to modify this parameter settings! Available settings: 0~3 0: 1 pulse 1: 2 pulses (default value) 2: 3 pulses 3: 4 pulses
0x1003	ENUM8, reportable	0x1224	PIR sensor trigger time interval It is not recommended to modify this parameter settings! Available settings: 0~3 0: 4 seconds 1: 8 seconds 2: 12 seconds (default value) 3: 16 seconds

1.2.6 Alarm-0x0009(Server)

Please set a valid value of BatteryAlarmMask of Power Configuration.

The Alarm Server cluster can generate the following commands:

CmdID	Description
0x00	Alarm Alarm code: Identifying code for the cause of the alarm, as given in the specification of the cluster whose attribute generated this alarm.

Power Configuration, alarm code: 0x10.

BatteryVoltageMinThreshold or BatteryPercentageMinThreshold reached for Battery Source

ZigBee Interface

1.3 Application Endpoint #3 - IAS Zone

1.3.1 IAS Zone-0x0500(Server)

Attributes Supported:

Attribute	Type	Description
0x0000	ENUM8, read-only	Zone State Not enrolled or enrolled
0x0001	ENUM16, read-only	Zone Type is always 0x0D (Motion sensor)
0x0002	MAP16, read-only	Zone Status Bit0 support (alarm1)
0x0010	EUI64,	IAS_CIE_Address
0x0011	Int8U,	Zone ID 0x00 – 0xFF Default 0xff

The IAS Zone Server cluster can generate the following commands:

CmdID	Description
0x00	Zone Status Change Notification Zone Status Extended Status Zone ID Delay
0x01	Zone Enroll Request Zone Type Manufacturer Code

The IAS Zone Server cluster can receive the following commands:

CmdID	Description
0x00	Zone Enroll Response Zone Type Manufacturer Code

ZigBee Interface

1.4 Application Endpoint #3 – Temperature Sensor

Cluster	Supported	Description
0x0000	server	Basic Provides basic information about the device, such as the manufacturer ID, vendor and model name, stack profile, ZCL version, production date, hardware revision etc. Allows a factory reset of attributes, without the device leaving the network.
0x0003	server	Identify Allows to put the endpoint into identify mode. Useful for identifying/locating devices and required for Finding & Binding.
0x0402	server	Temperature Measurement Temperature sensor

1.4.1 Temperature Measurement-0x0402 (Server)

Attributes Supported:

Attribute	Type	Description
0x0000	Int16s, read-only, reportable	Measuredvalue Temperature value, unit is 0.01°C Report, default: Min interval: 1s Max interval: 1800s (30mins) Reportable change: 100 (1°C), only judge when the device is awakened, for instance, PIR triggered, the button is pressed, scheduled awakening etc.
0x0001	Int16s, read-only	MinMeasuredValue 0xF060 (-40°C)
0x0002	Int16s, read-only	MaxMeasuredValue 0x30D4 (125°C)

Proprietary Attributes:

Attribute	Manufacturer Code	Type	Description
0x1000	0x1224	Int8s, reportable	Temperature Sensor Compensation -5~+5, unit is °C

ZigBee Interface

1.5 Application Endpoint #4 - Humidity Sensor

Cluster	Supported	Description
0x0000	server	Basic Provides basic information about the device, such as the manufacturer ID, vendor and model name, stack profile, ZCL version, production date, hardware revision etc. Allows a factory reset of attributes, without the device leaving the network.
0x0003	server	Identify Allows to put the endpoint into identify mode. Useful for identifying/locating devices and required for Finding & Binding.
0x0405	server	Relative Humidity Measurement Humidity sensor

1.5.1 Relative Humidity Measurement-0x0405 (Server)

Attributes Supported:

Attribute	Type	Description
0x0000	Int16u, read-only, reportable	Measuredvalue unit is 0.01 percent 0x0000 to 0x2710 represent relative humidity from 0% to 100% 0xFFFF indicates an invalid measurement Report, default: Min interval: 1s Max interval: 1800s (30mins) Reportable change: 500 (5%), only judge when the device is awakened, for instance, PIR triggered, the button is pressed, scheduled awakening etc.
0x0001	Int16u, read-only	MinMeasuredValue 0
0x0002	Int16u, read-only	MaxMeasuredValue 10000

Proprietary Attributes:

Attribute	Manufacturer Code	Type	Description
0x1000	0x1224	Int8s, reportable	Humidity Sensor Compensation -5~+5, unit is 1 percent

ZigBee Interface

1.6 Application Endpoint #5 - Light Sensor

Cluster	Supported	Description
0x0000	server	Basic Provides basic information about the device, such as the manufacturer ID, vendor and model name, stack profile, ZCL version, production date, hardware revision etc. Allows a factory reset of attributes, without the device leaving the network.
0x0003	server	Identify Allows to put the endpoint into identify mode. Useful for identifying/locating devices and required for Finding & Binding.
0x0400	server	Illuminance Measurement Light sensor

1.6.1 Illuminance Measurement-0x0400 (Server)

Attributes Supported:

Attribute	Type	Description
0x0000	Int16u, read-only, reportable	Measuredvalue 0xFFFF indicates an invalid measurement Report, default: Min interval: 1s Max interval: 1800s (30mins) Reportable change: 16990 (50lux), please be noted that the device will report according to lux unit value change. For instance, when Measuredvalue=21761 (150lx) drops down to 20001 (50lux), the device will report, instead of reporting when the values drops down to 4771=(21761-16990). Only judge when the device is awakened, for instance, PIR triggered, the button is pressed, scheduled awakening etc.
0x0001	Int16u, read-only	MinMeasuredValue 1
0x0002	Int16u, read-only	MaxMeasuredValue 40001