

Zigbee Temperature and Humidity Sensor

SR-ZG9033TH



Product Info



Product Description



This Zigbee sensor combines temperature and humidity sensors into one device. It supports low battery power alarm: if the power is lower than 1%, the motion sensor trigger and report will be forbidden, and the alarm will be reported every hour until the battery power reaches at least 5%.



Parameters

Operating Voltage	3 VDC
Wireless Protocol	Zigbee 3.0
Air Temperature Sensor	-40~125°C; accuracy: $\pm 0.1^{\circ}\text{C}$
Relative Humidity Sensor	0-100%
Standby Consumption	15 μA
Dimensions	55.5*55.5*18.6mm


Operation

1. Added to a Zigbee Network

Method 1: Press the button 5 times continuously to enter the network pairing mode, and the icon  will flash. The icon  will stay on if the device is successfully added to the network. The network pairing mode lasts 180s.

Method 2: If the device is disconnected from the network, re-power it, the device will automatically enter the network pairing mode, and the icon  will flash. If successfully added, the icon  will stay on. The network pairing mode lasts 180s.

2. Removed from a Zigbee Network & Factory Reset

Method 1: If the device has been added to the gateway, press the button 5 times continuously, the icon  staying on indicates the device has been removed from the network.

Method 2: After the device is deleted from the gateway, short press the button once to wake up the device and immediately exit the network, otherwise the device will not be removed from the network until the next time it reports temperature and humidity.

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

3. Wireless Data Interaction

Since the device is a sleeping device, it needs to be woken up. If the device has been connected to the network, pressing the button will wake it up. If there is no gateway data, it will return to sleep mode after 3s.

Zigbee Interface

1. Zigbee application endpoints:

Endpoint	Profile	Application
0(0x00)	0x0000 (ZDP)	ZigBee Device Object (ZDO) – standard management features
1(0x01)	0x0104 (HA)	Power, OTA, Temperature Sensor, DeviceID = 0x0302
2(0x02)	0x0104 (HA)	Relative Humidity Sensor, DeviceID = 0x0302

1.1 Application Endpoint #0—ZigBee Device Object

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

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1.2 Application Endpoint #1—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.
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.
0x0402	server	Temperature Measurement

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.

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)

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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

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 0xffffffffffffff, 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 Temperature Measurement-0x0402 (Server)

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

Proprietary Attributes:

Attribute	Manufacturer Code	Type	Description
0x1000	0x1224	Int8s, reportable	Temperature Sensor Compensation -5~+5, unit is ℃
0x1001	0x1224	enum8, reportable	Temperature Display Unit 0, Celsius; 1, Fahrenheit

1.2.6 Alarm-0x0009(Server)

Please set a valid value of BatteryAlarmMask of Power Configuration.

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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

1.3 Application Endpoint #2—Humidity Sensor

Cluster	Supported	Description
0x0000	server	Basic
0x0003	server	Identify
0x0405	server	Relative Humidity Measurement Humidity sensor

1.3.1 Relative Humidity Measurement-0x0405 (Server)

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%)
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 %