



## Aeotec ArQ- Temperature & Humidity Sensor ZWA009-A Manual

[Home](#) » [Aeotec](#) » Aeotec ArQ- Temperature & Humidity Sensor ZWA009-A Manual 



## Contents

### 1 Aeotec

### 2 ArQ- Temperature & Humidity Sensor

#### 2.1 SKU: ZWA009-A

#### 2.2 Quickstart

#### 2.3 Important safety information

#### 2.4 What is Z-Wave?

#### 2.5 Product Description

#### 2.6 Prepare for Installation / Reset

#### 2.7 Inclusion/Exclusion

#### 2.8 Quick trouble shooting

#### 2.9 Association – one device controls an other device

##### 2.9.1 Association Groups:

#### 2.10 Configuration Parameters

##### 2.10.1 Parameter 1: Minimum Temperature change to report

##### 2.10.2 Parameter 10: High Temperature Trigger BASIC Set Command Value

##### 2.10.3 Parameter 11: Low Humidity Trigger BASIC Set Command Value

##### 2.10.4 Parameter 12: High Humidity Trigger BASIC Set Command Value

##### 2.10.5 Parameter 13: Offset value for Mould danger notification

##### 2.10.6 Parameter 2: Minimum humidity change to report

##### 2.10.7 Parameter 255: Reset parameter

##### 2.10.8 Parameter 4: Temperature and Humidity Periodic Reports

##### 2.10.9 Parameter 5: Temperature Upper Watermark value

##### 2.10.10 Parameter 6: Temperature Lower Watermark value

##### 2.10.11 Parameter 7: Humidity Upper Watermark value

##### 2.10.12 Parameter 8: Humidity Lower Watermark value

##### 2.10.13 Parameter 9: Low Temperature Trigger BASIC Set Command Value

#### 2.11 Technical Data

#### 2.12 Supported Command Classes

#### 2.13 Explanation of Z-Wave specific terms

#### 2.14 Related Posts

---

**Aeotec**

---

## ArQ- Temperature & Humidity Sensor

**SKU: ZWA009-A**



## Quickstart

This is a  
**secure**  
**Alarm Sensor**  
for

Please make sure the internal battery is fully charged.

## Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law.

The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material.

Use this equipment only for its intended purpose. Follow the disposal instructions.

Do not dispose of electronic equipment or batteries in a fire or near open heat sources.

## What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.



This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the

same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to [www.z-wave.info](http://www.z-wave.info).

## Product Description

The ArQ is an intelligent sensor to monitor your environment at home. It measures temperature and humidity. Via an intelligent analysis, the sensor protects your health by detecting the danger of mould formations.

## Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state**. Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

## Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

## Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

## Association – one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, ...). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a 'Basic Set' Command.

## Association Groups:

Group NumberMaximum NodesDescription

1	5	Lifeline Association to Gateway
2	5	High Temperature Notification – Sends a notification to the associated device
3	5	Low Temperature Notification – Sends a notification to the associated device, when the low temperature threshold is breached.
4	5	High Humidity Notification – Sends a notification to the associated device, when the high humidity threshold is breached.
5	5	Low Humidity Notification – Sends a notification to the associated device, when the low humidity threshold is breached.
6	5	Air Temperature (A multilevel sensor report is sent to the nodes in this group).

## Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

**IMPORTANT:** Controllers may only allow configuring signed values. In order to set values in the range 128 ... 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200 it may be needed to set a value of 200 minus 256 = minus 56. In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

### Parameter 1: Minimum Temperature change to report

*This value defines the minimum change of temperature to cause an unsolicited report of humidity to the central controller using Lifeline. If the value is set to 0, there will be no reports sent to the controller, when the temperature changes. However, periodic reports, managed by configuration parameter 4, may still be active.*

Size: 1 Byte, Default Value: 20

SettingDescription

0	disabled
1 – 100	1/10 degree

### Parameter 10: High Temperature Trigger BASIC Set Command Value

*This defines what BASIC command shall be sent out into association group 2*

Size: 1 Byte, Default Value: 0

SettingDescription

0 – 255	Value
---------	-------

### Parameter 11: Low Humidity Trigger BASIC Set Command Value

*This defines what BASIC command shall be sent out into association group 5*

Size: 1 Byte, Default Value: 255

#### SettingDescription

0 – 255	Value
---------	-------

### Parameter 12: High Humidity Trigger BASIC Set Command Value

*This defines what BASIC command shall be sent out into association group 4*

Size: 1 Byte, Default Value: 0

#### SettingDescription

0 – 255	Value
---------	-------

### Parameter 13: Offset value for Mould danger notification

*This value allows to increase the humidity threshold for mold danger notification by max 10%*

Size: 1 Byte, Default Value: 0

#### SettingDescription

0 – 10	%
--------	---

### Parameter 2: Minimum humidity change to report

*This value defines the minimum change of humidity to cause an unsolicited report of humidity to the central controller using Lifeline. If the value is set to 0, there will be no reports sent to the controller, when the humidity changes. However, periodic reports, managed by configuration parameter 4, may still be active.*

Size: 1 Byte, Default Value: 5

#### SettingDescription

0	disabled
1 – 20	%

### Parameter 255: Reset parameter

*This parameter helps reset configuration parameters and the device to factory defaults.*

Size: 4 Byte, Default Value: 0

#### SettingDescription

1 – 1431655764	Reset all Parameter settings to their default settings.
1431655765	Completely factory reset sensor and send device reset locally notification.

### Parameter 4: Temperature and Humidity Periodic Reports

*This parameter defines the time interval to send an unsolicited report. If the value is set to 0, there will be no periodic reports sent to the controller. However, reports on temperature/humidity changes, managed by configuration parameters 1 and 2, may still be active.*

Size: 2 Byte, Default Value: 43200

#### SettingDescription

0	disabled
900 – 65535	seconds

#### Parameter 5: Temperature Upper Watermark value

*This parameter defines a temperature. If the measured temperature surpasses this watermark a BASIC command is sent into Association Group 2*

Size: 2 Byte, Default Value: 0

SettingDescription

0	disabled
1 – 1000	1/10 degree

#### Parameter 6: Temperature Lower Watermark value

*This parameter defines a temperature. If the measured temperature drops below this watermark a BASIC command is sent into Association Group 3*

Size: 2 Byte, Default Value: 0

SettingDescription

0	disabled
200 – 1000	1/10 degree

#### Parameter 7: Humidity Upper Watermark value

*This parameter defines a relative humidity. If the measured relative humidity surpasses this watermark a BASIC command is sent into Association Group 4*

Size: 1 Byte, Default Value: 0

SettingDescription

0	disabled
1 – 90	%

#### Parameter 8: Humidity Lower Watermark value

*This parameter defines a relative humidity. If the measured temperature drops below this relative humidity a BASIC command is sent into Association Group 5*

Size: 1 Byte, Default Value: 0

SettingDescription

0	disabled
1 – 90	%

#### Parameter 9: Low Temperature Trigger BASIC Set Command Value

*This defines what BASIC command shall be sent out into association group 3*

Size: 1 Byte, Default Value: 255

0 – 255	Values
---------	--------

## Technical Data

Hardware Platform	ZGM130
Device Type	Notification Sensor
Network Operation	Reporting Sleeping Slave
Firmware Version	HW: 1 FW: 1.00
Z-Wave Version	7.12.2
Certification ID	ZC12-20090122
Z-Wave Product Id	0x0371.0x0102.0x0009
Color	Antique Brass
Security V2	S2_UNAUTHENTICATED ,S2_AUTHENTICATED
Frequency	XXfrequency
Maximum transmission power	XXantenna

## Supported Command Classes

- Association Grp Info V3
- Association V2
- Battery
- Configuration V4
- Device Reset Locally
- Firmware Update Md V5
- Indicator V3
- Manufacturer Specific V2
- Multi Channel Association V3
- Notification V8
- Powerlevel
- Security 2
- Sensor Binary V2
- Sensor Multilevel V11
- Supervision
- Transport Service V2
- Version V3
- Wake Up V2
- Zwaveplus Info V2

## Explanation of Z-Wave specific terms



- **Controller** — is a Z-Wave device with capabilities to manage the network.  
Controllers are typically Gateways, Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network.  
Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announce that it is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.