# MultiSensor 8

(ZWA066)

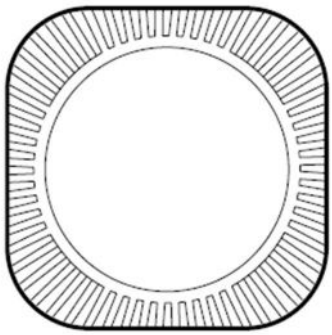
| REVISION RECORD | | |
|---|---|---|
| Version | Date | Brief description of changes |
| 0.1 | 2025.12.12 | First revision. |
| 0.2 | 2025.12.19 | Update Relative Humidity and Mold Detection |

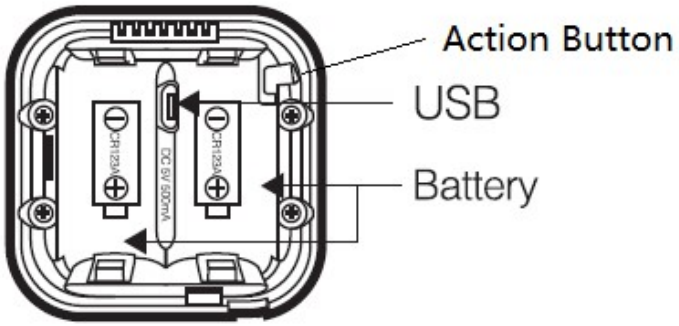
# Table of Content

# 1 OVERVIEW

Aeotec MultiSensor 8 adopts Z-Wave® technology and is an intelligent wireless sensor device that integrates motion, temperature, humidity, light and acceleration sensors. The product supports battery or USB power supply. The installation methods include ceiling installation and wall mounted installation, and the sensitivity of motion sensor is also adjustable.

This product supports Security 2 Command Class. While a Security S2 enabled Controller is needed in order to fully use the security feature. This product can be operated in any Z-Wave network with other Z-Wave/ Z-Wave Plus® certified devices from other manufacturers. All mains operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network. This product also supports SmartStart.






| Terminology | Description |
|---|---|
| Action button | Used for networking ,resetting and protect the device. |
| Led (Red, Green, Blue) | Used for indicating the current state of the product. |
| Battery | Power supply |
| USB | Power supply |

# 2 SPECIFICATIONS

## 2.1 Structural

| Parameter | Value |
|---|---|
| Product Identifier | ZWA066 |
| Dimensions | Φ55 x 35mm |
| Color | White |
| Usage | For indoor use. |
| Operating Temperature | 32~104°F (0~40°C) |
| Relative Humidity | 8%~80% |

## 2.2 Hardware

| Parameter | Value |
|---|---|
| Z-Wave Module | EFR32ZG23 |
| Z-Wave TX Power | Max: 14dBm |
| Z-Wave Classic Antenna Distance | 30m (Indoor) / 150m (Outdoor) |
| Z-Wave Long Range Antenna Distance | 40m (Indoor) / 400m (Outdoor) |
| Buttons | Action Button x1 |
| Indicator Light Color | Red, Green, Blue |
| Temperature Sensor | -20 to 85°C (+- 1°C) |
| Relative Humidity Sensor | 0 to 100% RH +- 3% |
| Dew Point Temperature | -20 to 85°C (+- 1°C)<br>Td = T – (100-RH) / 5 (Td=Dew Point, T=Temperature, RH=Relative Humidity) |
| Mold Detection | When humidity greater than or equal to 60% + configuration 30, it will trigger mold danger. |
| Lighting Sensor | 0-30000lux |
| Tamper/Acceleration sensor | 3 axis accelerometer, 0.2m/s2 resolution |
| Motion Sensor | 12m @0°direction, 10m@±60°direction |
| Power Type | USB or 2*CR123A |

USB Power Supply:

| Parameter | Value |
|---|---|
| Work Current | 12mA |
| Standby Current | 6mA |

Battery Supply:

| Parameter | Value |
|---|---|
| Work Current | 12mA |
| Standby Current | 34uA |

## 2.3 Software

| Parameter | Value |
|---|---|
| Wireless Technology | Z-Wave |
| Certification Type | Z-Wave Plus v2 Certification |
| Z-Wave SDK Version | 7.23.2 |
| Z-Wave Library Type | Enhanced 232 Slave |

| | |
|---|---|
| Z-Wave Role Type | Always On Slave(USB Power Supply),<br>Reporting Sleeping Slave(Battery Supply). |
| Generic Product Type | GENERIC_TYPE_SENSOR_NOTIFICATION [0x07] |
| Specific Product Type | SPECIFIC_TYPE_NOTIFICATION_SENSOR [0x01] |
| Security Class | Non-Security, S2 Unauthenticated, and S2 Authenticated |
| SmartStart Compatible | Support. After powering on, SmartStart is auto activated. |
| Over The Air (OTA) | Support. Firmware can be updated via RF. |
| Multi Channel Product | No |
| Association | Support. Refer to Section 4.7 Association Group Info. |
| Factory Reset | Support. Refer to Section 3.7 How to factory reset. |
| Power-down Memory | Support. All command settings will stay unchanged even power down. |
| Control other product | Support.<br>Control other Z-Wave product directly via Group 2 when pir is triggered.<br>Control other Z-Wave product directly via Association Group when heat alarm and weather alarm is triggered. |

# 3 QUICK START

## 3.1 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.

## 3.2 How to install the product

1. Don't install MultiSensor 8 in areas of artificial temperature change such as near air conditioners, humidifiers, and heaters, and avoid positioning it directly opposite a window or direct sunlight. Doing so would impact the accuracy of the sensors.
2. If powering it with batteries, do not install MultiSensor 8 in a location where the temperature can drop below 0°C / 32°F.
3. Only install your sensor indoors, MultiSensor 8 has a 12 meter detection range.
4. Make sure that you connect your MultiSensor 8 to your hub before finalizing installation.

## 3.3 How to add the product

The following will step you through adding the product to your Z-Wave network.

1. Open the battery cover.
2. Remove the battery protection.
3. Press the action button twice quickly.

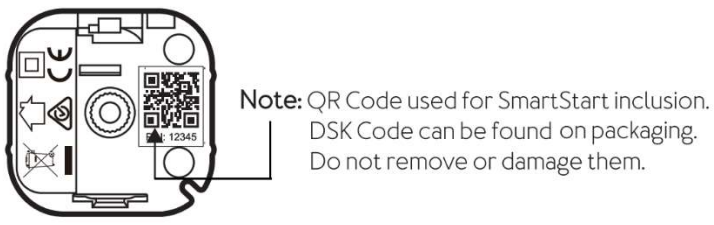
If your Z-Wave gateway supports SmartStart: scan the QR code on device using the gateway's app. Your sensor will join your Z-Wave network automatically.

## 3.4 How to remove the product

1. Open the battery cover.
2. Press the action button twice quickly.

## 3.5 About SmartStart

SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code present on the product with a controller providing SmartStart inclusion. No further action is required and the SmartStart product will be added automatically within 10 minutes of being switched on in the network vicinity. You can find the QR code on the back of the product, like this:




The DSK can be found on the packaging, like this, Z-Wave DSK: **05065**-41336-16018-47313-50335-02212-29424-38760

## 3.6 About Product

This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All mains operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

## 3.7 How to factory reset

Reset procedure allows to restore the product back to its factory settings, which means all information about the Z-Wave controller and user configuration will be deleted.

1. Make sure the product is powered.

2. Press and hold the button for at least 12s, and then Factory Reset is performed. The product will issue a Device Reset Locally Command via its Lifeline to notify the Lifeline destination that the product has been reset to its factory default state. And it will perform the reset operation regardless of whether or not the delivery of the Device Reset Locally Notification is successful.

**Note:**

If you press and hold the button, 5 to 12 seconds, the Green LED will fast flash, and then Green LED light 2 seconds until the factory settings are restored.

Resetting the product is not the recommended way of removing the product from the Z-Wave network. Use reset procedure only if the primary controller is missing or inoperable. Certain product removal can be achieved by the procedure of removing described in “How to remove the product”.

## 3.8 Safety Warning for Batteries

The product contains batteries. Please remove the batteries when the device is not used. Do not mix batteries of different charging level or different brands.

## 3.9 Long Range

ZWA066-A (US_LR) can be included using Z-Wave Long Range.
ZWA066-C (EU_LR) can be included using Z-Wave Long Range.

## 3.10 About Z-Wave Role Type

1. When include to the network using USB power, the role type of the product is Always On. Changing to battery power will keep the role type in its network, which is also a Always On Slave.
2. When powered by battery and include to the network, the role type of the product is Reporting Sleeping. Changing to USB power supply will keep the role type in its network, which is also Reporting Sleeping Slave.

**Mark:** After switching the power supply mode within the network, it needs to be excluded and re included to the network before it can take effect.

## 3.11 About Tamper

Vibration products can trigger tamper notification report.

# 4 SOFTWARE FUNCTION DEFINITION

## 4.1 User Behavior Interaction

The following brightness levels are all 100% unless otherwise specified.

| User behavior status | Out of the Z-Wave network | In the Z-Wave network |
|---|---|---|
| Power OFF | N/A | N/A |
| Power ON | 1, The red and green led will on for 1 second, indicating self inspection.<br>2, The green led breathing 3 times and then turn off, indication out the Z-Wave network.<br>3, Send Inclusion Requests for SmartStart Learn Mode. | 1, The red and green led will on for 1 second, indicating self inspection<br>2, LED will light up green for 1 seconds and turn off, indicating in the Z-Wave network.<br>3, Send Wake Up Notification.<br>4, Send all sensor data<br>LED will become flash green once, and device will wake up for 15 seconds. |
| Click Z-Wave button once | **1, Exit Classic Inclusion Learn Mode:**<br>If during the Classic Inclusion Learn Mode, the Classic Learn Mode will exit. LED will turn off.<br>**2, Indicate network status**<br>The green led breathing 3 times and then turn off. | **1, Exit Classic Inclusion Learn Mode:**<br>If during the Classic Inclusion Learn Mode, the Classic Learn Mode will exit. LED will turn off.<br>**2, Send Wake Up Notification**<br>green led will on for 1 second, and device will wake up for 15 seconds(if received wakeup no more information, will go to sleep immediately). |
| Click Z-Wave button twice | **1. Send Node Info for Adding.**<br>LED will blink green for 30s until it is added into the network.<br>If Adding succeeds, LED will light up green for 2 seconds<br>If Adding fails, LED will turn off. Device will auto-reset and then activate SmartStart Learn Mode again.<br>**2.Exit Classic Inclusion Learn Mode:**<br>If Z-Wave button is clicked again during the Classic Inclusion Learn Mode, the Classic Learn Mode will exit. LED will turn off. Device will auto-reset and then activate SmartStart Learn Mode again. | **1. Send Node Info for Removing.**<br>LED will blink green for 30 seconds until it is removed from the network.<br>If Removing succeeds, LED will light up green for 2 seconds and become breathing light 3 times.<br>If Removing fails, LED will light up red for 1 seconds and turn off<br>**2.Exit Classic exclusion Learn Mode:**<br>If Z-Wave button is clicked again during the Classic exclusion Learn Mode, the Classic Learn Mode will exit. LED will turn off. |
| Press and hold Z-Wave button for (0, 1s] | LED: OFF | LED: OFF |
| hold Z-Wave button for (1, 3s] | Green light on 10% | Green light on 10% |

| | | |
|---|---|---|
| hold Z-Wave button for (3，5s] | Green light on 100% | Green light on 100%，Release and enter sensor reporting mode, Send battery report, multilevel sensor report(Temperature/Humidity/ Dew Point Temperature) |
| Press and hold Z-Wave button for (5, 12s] | Green Led will accelerate Flash. | Green Led will accelerate Flash. |
| Press and hold Z-Wave button for >12s | **Factory Reset And Restart**<br>Green Led will become constantly light for 1 second, and become breathing light indicates the reset is success. | **Factory Reset AND Restart.**<br>Green Led will become constantly light for 1 second, and become breathing light.<br>The device will issue a Device Reset Locally Command via its Lifeline to notify the Lifeline destination that the device has been reset to its factory default state. And it will perform the reset operation regardless of whether or not the delivery of the Device Reset Locally Notification is successful. |

## 4.2 Supported Command Classes

| Command Class | Version | Securely 2 added | |
|---|---|---|---|
| | | Non-secure CC List | Secure CC List |
| ZWAVEPLUS_INFO | 2 | Support | Support |
| ASSOCIATION | 2 | | Support |
| MULTI_CHANNEL_ASSOCIATION | 3 | | Support |
| ASSOCIATION_GRP_INFO | 3 | | Support |
| TRANSPORT_SERVICE | 2 | Support | Support |
| VERSION | 3 | | Support |
| MANUFACTURER_SPECIFIC | 2 | | Support |
| DEVICE_RESET_LOCALLY | 1 | | Support |
| INDICATOR | 3 | | Support |
| POWERLEVEL | 1 | | Support |
| BATTERY | 1 | | Support |
| SENSOR_BINARY | 2 | | Support |
| CONFIGURATION | 4 | | Support |
| SECURITY_2 | 1 | Support | Support |
| NOTIFICATION | 8 | | Support |
| WAKE_UP | 2 | | Support |
| SUPERVISION | 1 | Support | Support |
| FIRMWARE_UPDATE_MD | 5 | | Support |
| MULTILEVEL SENSER | 11 | | Support |

## 4.3 Basic Command Class mapping

Basic Command Class is not mapped to any of the supported command classes.

## 4.4 Z-Wave Plus Info

| Parameter | Value |
|---|---|
| Z-Wave Plus Version | 0x02 |

| | |
|---|---|
| Role Type | USB Supply: 5 (ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_END_NODE_ALWAYS_ON)<br>Battery Supply: 6 (ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_SLEEPING_REPORTING) |
| Node Type | 0x00 [ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE) |
| Installer Icon Type | 0x0C07 [ICON_TYPE_SPECIFIC_SENSOR_NOTIFICATION_HOME_SECURITY] |
| User Icon Type | 0x0C07 [ICON_TYPE_SPECIFIC_SENSOR_NOTIFICATION_HOME_SECURITY] |

Mark:

1. When include to the network using USB power, the role type of the product is Always On. Changing to battery power will keep the role type in its network, which is also a Always On Slave.
2. When powered by batterry and include to the network, the role type of the product is Reporting Sleeping. Changing to USB power supply will keep the role type in its network, which is also Reporting Sleeping Slave.
3. After switching the power supply mode within the network, it needs to be excluded and re included to the network before it can take effect.

## 4.5 Manufacturer Specific

| Parameter | Value |
|---|---|
| Manufacturer ID 1 | 0x03 |
| Manufacturer ID 2 | 0x71 |
| Product Type ID 1 | 0x00 [EU], 0x01 [US], 0x02 [AU] |
| Product Type ID 2 | 0x02 [PRODUCT_TYPE_ID_SENSOR] |
| Product ID 1 | 0x00 |
| Product ID 2 | 0x42 (66) |

## 4.6 Version

| Parameter | Value |
|---|---|
| Z-Wave Protocol Library Type | 0x03 |
| Z-Wave Protocol Version | 0x07 |
| Z-Wave Protocol Sub Version | 0x17 |
| Firmware 0 Version | 0x01 [Z-Wave Chip Firmware Version] |
| Firmware 0 Sub Version | 0x00 [Z-Wave Chip Firmware Sub Version] |
| Hardware Version | 0x42 (66) |
| Number of firmware targets | 0x00 |

## 4.7 Association Group Info

Root product

| ID | Name | Node count | Profile | Function |
|---|---|---|---|---|
| 1 | Lifeline | 5 | General: Lifeline (0x0001) | **Device Reset Locally Notification:**<br>Issued when Factory Reset is performed.<br>**Battery Report:**<br>Issued when battery becomes low.<br>**Sensor Binary Report:**<br>See Param1 for more information.<br>**Notification Report**<br>See Notification Chapter for more information<br>**Multilevel Sensor Report**<br>Issued when timed report, threshold report, limit report.<br>**Configuration Report:**<br>Issued when parameter 13 changed. |
| 2 | Motion | 5 | Notification: home Security (0x7107) | **Basic Set:**<br>Control devices when motion trigger or untriggert |
| 3 | Over Heat | 5 | Sensor: Temperature(0x3101) | **Basic Set** |

| | | | | |
|---|---|---|---|---|
| | | | | Issued when the temperature detected is higher than set value by Configuration parameter 14. |
| 4 | Under Heat | 5 | Sensor: Temperature(0x3101) | **Basic Set**<br>Issued when the temperature detected is lower than set value by Configuration parameter 15. |
| 5 | Over Humidity | 5 | Sensor: Humidity(0x3105) | **Basic Set**<br>Issued when the humidity detected is higher than set value by Configuration parameter 16. |
| 6 | Under Humidity | 5 | Sensor: Humidity(0x3105) | **Basic Set**<br>Issued when the humidity detected is lower than set value by Configuration parameter 16. |
| 7 | Over Light | 5 | Sensor: Illuminance (0x3103) | **Basic Set**<br>Issued when the Light detected is higher than set value by Configuration parameter 18. |
| 8 | Under Light | 5 | Sensor: Illuminance (0x3103) | **Basic Set**<br>Issued when the Light detected is lower than set value by Configuration parameter 19. |
| 9 | Mold danger | 5 | Notification: Weather alarm(0x7110) | **Basic Set:**<br>Control devices when Mold danger<br>(When humidity greater than or equal to 60% + configuration 30, it will trigger mold danger.) |
| 10 | Temperature | 5 | Sensor: Temperature(0x3101) | **Multilevel Sensor Report**<br>Issued when timed report, threshold report. |
| 11 | Tamper | 5 | Notification: home Security (0x7107) | **Basic Set:**<br>Control devices when tamper trigger or untriggert |

## 4.8 Notification

| Notification Type | | Notification Events | | Description |
|---|---|---|---|---|
| Home Security | 0x07 | Motion detection | 0x08 | Motion detection |
| | | Tampering, product cover removed | 0x03 | Tamper trigger |
| | | State idle | 0x00 | Going to idle |
| Power Management | 0x08 | State Idle | 0x00 | Issued when replace new battery that battery power more than 90%. |
| | | Power has been applied | 0x01 | Power has been applied |
| | | AC mains disconnected | 0x02 | Supply by battery |
| | | AC mains re-connected | 0x03 | Supply by USB |
| | | Replace battery now | 0x0B | Issued when battery level is less than the value of configuration parameter 26 |
| Heat Alarm | 0x04 | State Idle | 0x00 | Issued when overheat or under heat alarm removed. |
| | | Overheat detected | 0x02 | Issued when detect temperature is higher than set value by Configuration parameter 14. |
| | | Under heat detected | 0x06 | Issued when detect temperature is lower than set value by Configuration parameter 15. |
| Weather Alarm | 0x10 | State Idle | 0x00 | Issued when Moisture Alarm removed. |
| | | Moisture Alarm | 0x02 | When humidity greater than or equal to 60% + configuration 30, it will trigger mold danger. |

## 4.9 Binary Sensor

| Sensor Type | | Sensor Value | Description |
|---|---|---|---|
| Motion | 0x0C | 0x00/0xFF | Motion State |
| GENERAL | 0x01 | 0x00/0xFF | Mold danger |

## 4.10 Multilevel Sensor

| Sensor Type | | Support Scale | Measure Range |
|---|---|---|---|
| Temperature | 0x01 | Celsius (C) | -20 to 85°C (+- 1°C) |
| | | Fahrenheit (F) | -4 to 185°F (+- 1.8°F) |
| Luminance | 0x03 | Lux | 0 to 30000 lux |
| Relative Humidity | 0x05 | Percentage value (%) | 0 to 100% RH +- 3% |
| Dew Point Temperature | 0x0B | Celsius (C) | -20 to 85°C (+- 1°C) |
| | | Fahrenheit (F) | -4 to 185°F (+- 1.8°F) |
| Acceleration X-axis | 0x34 | Meter per square second ($m/s^2$) | 0 to 0xFFFF |
| Acceleration Y-axis | 0x35 | Meter per square second ($m/s^2$) | 0 to 0xFFFF |
| Acceleration Z-axis | 0x36 | Meter per square second ($m/s^2$) | 0 to 0xFFFF |

## 4.11 Wake Up

| Parameter | Value | Time |
|---|---|---|
| Min Wake Up Interval Seconds | 0x000E10 | 3600s [1 hour] |
| Max Wake Up Interval Seconds | 0xEFF100 | 15724800s [182days] |
| Default Wake Up Interval Seconds | 0x093A80 | 604800s [1 week] |
| Wake Up Interval Step Seconds | 0x0000F0 | 240s [4 minutes] |

## 4.12 Battery

1. The 2.90V or more battery voltage corresponds to 100% battery level, and 2.60V or less corresponds to 0%.
2. If send Battery Get to the device, it will issue Battery Report with battery level to the requester when waked up.
3. If waked up or power on, it will detect battery level, and issue Battery Report via Lifeline when battery level change over 5%.
4. If waked up or power on, it will detect battery level, and issue Battery Report 0xFF via Lifeline when battery level is less than the value of configuration parameter 26.

## 4.13 Indicator

| Indicator ID | | Property ID | |
|---|---|---|---|
| Node Identify (Green Led) | 0x50 | On Off Period | 0x03 |
| | | On Off Cycles | 0x04 |
| | | On time within an On/Off period | 0x05 |

## 4.14 Configuration

| Parameter | 0x01 (01) | | | |
|---|---|---|---|---|
| Name | Enable Binary Sensor Report | | | |
| Info | For motion state | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Enumerated | Max Value | 1 |

| | | | | |
|---|---|---|---|---|
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |
| Description | Backwards compatibility, Binary Sensor for motion state | | | |

| Value | Function |
|---|---|
| 0 | Disable |
| 1 | Enable. Sends Sensor Binary Report. |

| Parameter | 0x02 (02) | | | |
|---|---|---|---|---|
| Name | Motion Retrigger Time | | | |
| Info | Motion re-detection time | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 3600 |
| | Read-only | False | Default Value | 240 |
| | Altering capabilities | False | Advanced | False |
| Description | Timeout configuration set in second for motion sensor to send no trigger status. | | | |

| Value | Function |
|---|---|
| 0 | Disable(Hardware determines the time for re triggering) |
| 1~30 | 30 seconds |
| 30~3600 | Timeout set in seconds |

| Parameter | 0x03 (03) | | | |
|---|---|---|---|---|
| Name | Motion Untrigger Time | | | |
| Info | Motion event release delay time | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 3600 |
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |

| | | |
|---|---|---|
| Description | Timeout configuration set in second for motion sensor to send no trigger status. | |
| | Value | Function |
| | 0 | Disable |
| | 1~30 | 30 seconds |
| | 30~3600 | Timeout set in seconds |

| | | | | |
|---|---|---|---|---|
| Parameter | 0x04 (04) | | | |
| Name | Motion sensitivity | | | |
| Info | Sensitivity of motion sensor | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 11 |
| | Read-only | False | Default Value | 11 |
| | Altering capabilities | False | Advanced | False |
| Description | 0 - Motion sensor is disable.<br>1 - Minimum Sensitivity.<br>11 - Maximum Sensitivity. | | | |

| | | | | |
|---|---|---|---|---|
| Parameter | 0x05 (5) | | | |
| Name | Motion Group Control Requirement | | | |
| Info | Motion Group Control Requirement | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 30000 |
| | Read-only | False | Default Value | 30000 |
| | Altering capabilities | False | Advanced | False |
| Description | Set threshold of Light/Lux when devices associated in group2 should be triggered by motion. Associated device only receive BASIC_SET command when light <= (this value). | | | |

| | |
|---|---|
| Parameter | 0x06 (06) |

| Name | Tamper Report Enable/Disable | | | |
|---|---|---|---|---|
| Info | Used to enable/disable tamper report | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 255 |
| | Read-only | False | Default Value | 4 |
| | Altering capabilities | False | Advanced | False |
| Description | 0 : disable tamper<br>1~254： timeout set in minutes to reset tamper status<br>255: only send tamper triggered, does not timeout | | | |

| Parameter | 0x07 (07) | | | |
|---|---|---|---|---|
| Name | Minimum acceleration change to report | | | |
| Info | Trigger acceleration report | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 255 |
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |
| Description | Set the minimum acceleration change required to induce an acceleration report. | | | |
| | Value | Function | | |
| | 0 | Disable | | |
| | 1~30 | 30 $M/S^2$ | | |
| | 30~255 | 30~255 $M/S^2$ | | |

| Parameter | 0x08 (8) | | | |
|---|---|---|---|---|
| Name | Motion Group Control Group2 | | | |
| Info | Motion Group Control Group2 | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Enumerated | Max Value | 6 |
| | Read-only | False | Default Value | 0 |

| | | | | |
|---|---|---|---|---|
| | Altering capabilities | False | Advanced | False |
| Description | Set control of other devices on group2 based on motion trigger | | | |

| Value | Function |
|---|---|
| 0 | Send BASIC_SET (0xFF) when motion is triggered. Send BASIC_SET (0x00) when motion is untriggered to associated device |
| 1 | Send BASIC_SET (0x00) when motion is triggered. Send BASIC_SET (0xFF) when motion is untriggered |
| 2 | Send BASIC_SET (0xFF) when motion is triggered, Nothing when motion untriggered. |
| 3 | Send BASIC_SET (0x00) when motion is triggered, Nothing when motion untriggered |
| 4 | Send BASIC_SET (0x00) when motion is untriggered, Nothing when motion triggered. |
| 5 | Send BASIC_SET (0xFF) when motion is untriggered, Nothing when motion triggered. |
| 6 | Send BASIC_SET (value is configured by parameter 9) when motion is triggered to associated devices. Send BASIC_SET (value is configured by parameter 9) when motion is untriggered. |

| Parameter | 0x09 (9) | | | |
|---|---|---|---|---|
| Name | Motion Group Value Setting | | | |
| Info | Motion Group Value Setting | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 0xFFFF |
| | Read-only | False | Default Value | 0xFF00 |
| | Altering capabilities | False | Advanced | False |
| Description | E.g. value=0x0A00, then BASIC_SET(0x0A) will be sent when motion trigger, BASIC_SET(0x00) will be sent when motion untrigger. | | | |

| Parameter | 0x0A (10) | | | |
|---|---|---|---|---|
| Name | Temperature & Dew Point Scale | | | |
| Info | scale for auto reports and setting | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Enumerated | Max Value | 1 |

| | | | | |
|---|---|---|---|---|
| | Read-only | False | Default Value | 0(EU)/1(US) |
| | Altering capabilities | False | Advanced | False |
| Description | scale for auto reports and setting | | | |

| Value | Function |
|---|---|
| 0 | Celsius |
| 1 | Fahrenheit |

| Parameter | 0x0B (11) | | | |
|---|---|---|---|---|
| Name | Threshold Check Time | | | |
| Info | Set threshold Check Time | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 65535 |
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter disables or enables threshold reporting and sets the time for checks in seconds for Parameters 14-25. | | | |

| Value | Function |
|---|---|
| 0 | Disable |
| 1~65535 | Enable threshold reports and sets the number of seconds per each threshold check.<br>When Battery powered, if 1 - 30, set threshold to 30. |

| Parameter | 0x0C (12) | | | |
|---|---|---|---|---|
| Name | Sensor threshold control | | | |
| Info | Sensor threshold control | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Bit field | Max Value | 0x77 |
| | Read-only | False | Default Value | 0x77 |
| | Altering capabilities | False | Advanced | False |

| Description | This value is a bit mask. It is used to enable/disable measurement reports for various sensors (Parameter 14-19) that are more than the upper limit value or less than the lower limit value.<br>0 - disable, 1 - enable | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| | Reserved | Lux lower | Humidity lower | Temperature lower | Reserved | Lux upper | Humidity upper | Temperature upper |

| Parameter | 0x0D (13) | | | |
|---|---|---|---|---|
| Name | Out-of-threshold State | | | |
| Info | Out-of-threshold State | | | |
| Properties | Size | 1 | Min Value | 0x00 |
| | Format | Bit field | Max Value | 0x77 |
| | Read-only | True | Default Value | 0x00 |
| | Altering capabilities | False | Advanced | False |

| Description | This is a read-only bitmask indicating the out-of-limit state of various sensors.<br>0:Within limit, 1:Out of limit | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| | Reserved | Lux lower | Humidity lower | Temperature lower | Reserved | Lux upper | Humidity upper | Temperature upper |

| Parameter | 0x0E (14) | | | |
|---|---|---|---|---|
| Name | Over Heat Group Threshold Group3 | | | |
| Info | Over Heat Group Threshold | | | |
| Properties | Size | 2 | Min Value | -400 |
| | Format | Signed Integer | Max Value | 850(EU/AU)<br>1850(US) |
| | Read-only | False | Default Value | 239(EU/AU)<br>750(US) |
| | Altering capabilities | False | Advanced | False |
| Description | Used to set the threshold of temperature. Designed to control Air Conditioners or temperature controllers ON or OFF. If measured temperature ≥ (this value, Scale is determined by Param10) send | | | |

| | | |
|---|---|---|
| | BASIC_SET (0xFF) to associated devices. If measured temperature < (this value) send BASIC_SET (0x00) to associated devices. E.g. Value 239 means 23.9 C. Value 750 means 75.0 F. | |
| | Value | Function |
| | 0 | Disable |
| | 400~850(EU/AU) | Enable. -40°C~85°C |
| | -400~1850 (US) | Enable. -40°F~185°F |

| Parameter | 0x0F (15) | | | |
|---|---|---|---|---|
| Name | Under Heat Group Threshold Group4 | | | |
| Info | Under Heat Group Threshold | | | |
| Properties | Size | 2 | Min Value | -400 |
| | Format | Signed Integer | Max Value | 850(EU/AU)<br>1850(US) |
| | Read-only | False | Default Value | 155(EU/AU)<br>600(US) |
| | Altering capabilities | False | Advanced | False |
| Description | Used to set the threshold of temperature. Designed to control Air Conditioners or temperature controllers ON or OFF. If measured temperature ≤ (this value, Scale is determined by Param10) send BASIC_SET (0xFF) to associated devices. If measured temperature > (this value) send BASIC_SET (0x00) to associated devices. E.g. Value 155 means 15.5 C. Value 600 means 60.0 F. | | | |
| | Value | Function | | |
| | 0 | Disable | | |
| | 400~850(EU/AU) | Enable. -40°C~85°C | | |
| | -400~1850 (US) | Enable. -40°F~185°F | | |

| Parameter | 0x10 (16) | | | |
|---|---|---|---|---|
| Name | Over Humidity Group Threshold Group5 | | | |
| Info | Over Humidity Group Threshold | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 100 |

| | | | | |
|---|---|---|---|---|
| | Read-only | False | Default Value | 60 |
| | Altering capabilities | False | Advanced | False |

Description

Used to set threshold of humidity. If measured humidity ≥ (this value), send BASIC_SET (0xFF) to associated devices through group5. If measured humidity < (this value) send BASIC_SET (0x00) to associated devices through group5.

Note: The Sensor will check the threshold value for an interval set by Parameter 11 if this threshold report is enabled.

| Value | Function |
|---|---|
| 0 | Disable |
| 1~100 | Enable. (1~100%) |

| Parameter | 0x11 (17) | | | |
|---|---|---|---|---|
| Name | Under Humidity Group Threshold Group6 | | | |
| Info | Under Humidity Group Threshold | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 100 |
| | Read-only | False | Default Value | 40 |
| | Altering capabilities | False | Advanced | False |

Description

Used to set threshold of humidity. If measured humidity ≤ (this value) send BASIC_SET (0xFF) to associated devices through group6. If measured humidity > (this value) send BASIC_SET (0x00) to associated devices through group6.

| Value | Function |
|---|---|
| 0 | Disable |
| 1~100 | Enable. (1~100%) |

| Parameter | 0x12 (18) | | | |
|---|---|---|---|---|
| Name | Over Light Group Threshold Group7 | | | |
| Info | Over Light Group Threshold | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 30000 |

| | | | | |
|---|---|---|---|---|
| | Read-only | False | Default Value | 2000 |
| | Altering capabilities | False | Advanced | False |
| Description | Used to set the threshold of Light/Lux. If measured light/lux ≥ (this value) send BASIC_SET (0xFF) to associated devices. If measured light/lux < (this value) send BASIC_SET (0x00) to associated devices. | | | |
| | Value | Function | | |
| | 0 | Disable | | |
| | 1~30000 | Enable. 1~30000 Lux | | |

| | | | | |
|---|---|---|---|---|
| Parameter | 0x13 (19) | | | |
| Name | Under Light Group Threshold Group8 | | | |
| Info | Under Light Group Threshold | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 30000 |
| | Read-only | False | Default Value | 100 |
| | Altering capabilities | False | Advanced | False |
| Description | Used to set the threshold of Light/Lux. If measured light/lux ≤ (this value) send BASIC_SET (0xFF) to associated devices. If measured light/lux > (this value) send BASIC_SET (0x00) to associated devices. | | | |
| | Value | Function | | |
| | 0 | Disable | | |
| | 1~30000 | Enable. 1~30000 Lux | | |

| | | | | |
|---|---|---|---|---|
| Parameter | 0x14 (20) | | | |
| Name | Temperature Recover Limit | | | |
| Info | Temperature Recover Limit | | | |
| Properties | Size | 1 | Min Value | 1 |
| | Format | Unsigned Integer | Max Value | 255 |
| | Read-only | False | Default Value | 20(EU/AU)<br>36(US) |
| | Altering capabilities | False | Advanced | False |

| | |
|---|---|
| Description | This parameter sets the temperature recover limit in a scale of 0.1. The scale is determined by Parameter 10.<br>If (Current measurement) <= (upper limit - recover limit), then a temperature report is sent.<br>If (Current measurement) >= (lower limit + recover limit), then a temperature report is sent. |

| Parameter | 0x15 (21) | | | |
|---|---|---|---|---|
| Name | Humidity Recover Limit | | | |
| Info | Humidity Recover Limit | | | |
| Properties | Size | 1 | Min Value | 1 |
| | Format | Unsigned Integer | Max Value | 50 |
| | Read-only | False | Default Value | 5 |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter sets the humidity recover limit level. Refer to Parameter 20 for details on its function. | | | |

| Parameter | 0x16 (22) | | | |
|---|---|---|---|---|
| Name | Lux Recover Limit | | | |
| Info | Lux Recover Limit | | | |
| Properties | Size | 1 | Min Value | 1 |
| | Format | Unsigned Integer | Max Value | 255 |
| | Read-only | False | Default Value | 100 |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter sets the lux recover limit level. Refer to Parameter 20 for details on its function. | | | |

| Parameter | 0x17 (23) | | | |
|---|---|---|---|---|
| Name | Temperature Threshold | | | |
| Info | Minimum temperature change to report | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 255 |

| | | | | |
|---|---|---|---|---|
| | Read-only | False | Default Value | 10(EU,ANZ) / 18(US) |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter sets the temperature threshold. If the temperature changes by more than this value, a report is sent. The value is scaled by 0.1, and the overall scale is determined by Parameter 10. | | | |
| | Value | Function | | |
| | 0 | Disable | | |
| | 1~255 | 0.1~25.5 degree | | |

| Parameter | 0x18 (24) | | | |
|---|---|---|---|---|
| Name | Humidity Threshold | | | |
| Info | Minimum humidity change to report | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 50 |
| | Read-only | False | Default Value | 5 |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter sets the humidity threshold. If the humidity changes by more than this value, a report is sent. | | | |
| | Value | Function | | |
| | 0 | Disable | | |
| | 1~50 | 1-50% | | |

| Parameter | 0x19 (25) | | | |
|---|---|---|---|---|
| Name | Lux Threshold | | | |
| Info | Minimum Lux change to report | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 10000 |
| | Read-only | False | Default Value | 250 |
| | Altering capabilities | False | Advanced | False |

| | | |
|---|---|---|
| Description | This parameter sets the Lux (light level) threshold. If the Lux level changes by more than this value, a report is sent. | |
| | Value | Function |
| | 0 | Disable |
| | 1~10000 | 1~10000 |

| | | | | |
|---|---|---|---|---|
| Parameter | 0x1A (26) | | | |
| Name | Low battery threshold | | | |
| Info | Low battery threshold | | | |
| Properties | Size | 1 | Min Value | 10 |
| | Format | Unsigned Integer | Max Value | 90 |
| | Read-only | False | Default Value | 20 |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter lets you configure the percentage at which the device sends a low battery report. When the battery level drops below this set value, a notification is sent, along with a battery report. | | | |
| | Value | Function | | |
| | 0 | Disable | | |
| | 10-90 | 10-90% | | |

| | | | | |
|---|---|---|---|---|
| Parameter | 0x1B (27) | | | |
| Name | Temperature Offset Value | | | |
| Info | Temperature Offset Value | | | |
| Properties | Size | 2 | Min Value | -200 |
| | Format | Signed Integer | Max Value | 200 |
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter allows you to add or subtract a value to calibrate the temperature when checked. The scale is defined by Parameter 10. For example, a value of 15 means 1.5°C or 1.5°F. | | | |

| Parameter | 0x1C (28) | | | |
|---|---|---|---|---|
| Name | Humidity Offset Value | | | |
| Info | Humidity Offset Value | | | |
| Properties | Size | 1 | Min Value | -50 |
| | Format | Signed Integer | Max Value | 50 |
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter allows you to add or subtract a value to calibrate the humidity when checked. The unit is % | | | |

| Parameter | 0x1D (29) | | | |
|---|---|---|---|---|
| Name | Lux Offset Value | | | |
| Info | Lux Offset Value | | | |
| Properties | Size | 2 | Min Value | -10000 |
| | Format | Signed Integer | Max Value | 10000 |
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter allows you to add or subtract a value to calibrate the Lux when checked. | | | |

| Parameter | 0x1E (30) | | | |
|---|---|---|---|---|
| Name | Mold Danger Offset Value | | | |
| Info | Mold Danger Offset Value | | | |
| Properties | Size | 1 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 40 |
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |
| Description | The default Relative Humidity to trigger Mold danger alarm is 60%. | | | |
| | Value | Function | | |

| | | |
|---|---|---|
| | 0--40 | 0%--40% |

| Parameter | 0x1F (31) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Name | Report Indicator | | | | | | | |
| Info | Report Indicator | | | | | | | |
| Properties | Size | 4 | | Min Value | 0 | | | |
| | Format | Unsigned Integer | | Max Value | 0x09999999 | | | |
| | Read-only | False | | Default Value | 0x00032140 | | | |
| | Altering capabilities | False | | Advanced | False | | | |
| Description | This parameter allows the user to change the report color of the motion sensor.<br>0: Disabled<br>1: Red<br>2: Green<br>3: Blue<br>4: Yellow<br>5: White<br>6: Purple<br>7: Orange<br>8: Pink<br>9: Cyan | | | | | | | |
| | 28~31 bit | 24~27 bit | 20~23 bit | 16~19 bit | 12~15 bit | 8~11 bit | 4~7 bit | 0~3 bit |
| | ~~Enable /Disable LED Activity~~ | Exceeding Threshold | acceleration Report | Tamper Detection | Motion Report | Mold Detection | Wake up interval report | Periodic Report:(Temperature, Humidity, Lux, Dewpoint, Battery) |

| Parameter | 0x20 (32) | | | |
|---|---|---|---|---|
| Name | Automatic Report Checklist 1 | | | |
| Info | Automatic Report Checklist 1 | | | |
| Properties | Size | 1 | Min Value | 0x00 |
| | Format | Bit field | Max Value | 0x1F |
| | Read-only | False | Default Value | 0x1F |
| | Altering capabilities | False | Advanced | False |
| Description | This parameter is Checklist 1 for automatic timed reports. When a corresponding item is selected (via bitmask), it will be checked when the timeout setting configured by Parameter 34 is reached. | | | |

| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|
| | Reserved | Reserved | Reserved | Battery | Dewpoint | Lux | Humidity | Temperature |

| Parameter | 0x21 (33) | | | |
|---|---|---|---|---|
| Name | Automatic Report Checklist 2 | | | |
| Info | Automatic Report Checklist 2 | | | |
| Properties | Size | 1 | Min Value | 0x00 |
| | Format | Bit field | Max Value | 0x1F |
| | Read-only | False | Default Value | 0 |
| | Altering capabilities | False | Advanced | False |

Description: This parameter is Checklist 2 for automatic timed reports. When a corresponding item is selected (via bitmask), it will be checked when the timeout setting configured by Parameter 35 is reached.

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|
| Reserved | Reserved | Reserved | Battery | Dewpoint | Lux | Humidity | Temperature |

| Parameter | 0x22 (34) | | | |
|---|---|---|---|---|
| Name | Automatic Checklist 1 Interval Time | | | |
| Info | Automatic Checklist 1 Interval Time | | | |
| Properties | Size | 2 | Min Value | 0 |
| | Format | Unsigned Integer | Max Value | 65535 |
| | Read-only | False | Default Value | 3600 |
| | Altering capabilities | False | Advanced | False |

Description: This parameter sets the interval time in seconds to check the items in Checklist 1. A Multilevel Sensor Report will be sent when the timeout is reached.

| Value | Function |
|---|---|
| 0 | Disable |
| 1~65535 | If 1 - 30, set value to 30. |

<table>
<tr><td>Parameter</td><td colspan="4">0x23 (35)</td></tr>
<tr><td>Name</td><td colspan="4">Automatic Checklist 2 Interval Time</td></tr>
<tr><td>Info</td><td colspan="4">Automatic Checklist 2 Interval Time</td></tr>
<tr><td rowspan="4">Properties</td><td>Size</td><td>2</td><td>Min Value</td><td>0</td></tr>
<tr><td>Format</td><td>Unsigned Integer</td><td>Max Value</td><td>65535</td></tr>
<tr><td>Read-only</td><td>False</td><td>Default Value</td><td>0</td></tr>
<tr><td>Altering capabilities</td><td>False</td><td>Advanced</td><td>False</td></tr>
<tr><td rowspan="4">Description</td><td colspan="4">This parameter sets the interval time in seconds to check the items in Checklist 2. A Multilevel Sensor Report will be sent when the timeout is reached.</td></tr>
<tr><td>Value</td><td colspan="3">Function</td></tr>
<tr><td>0</td><td colspan="3">Disable</td></tr>
<tr><td>1~65535</td><td colspan="3">If 1 - 30, set value to 30.</td></tr>
</table>