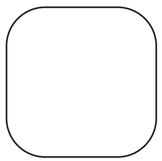
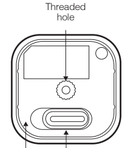
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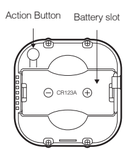
TriSensor

ZWA005



Used in this guide.







Back-Mount Arm



Screw (x2)

Important safety information.

Please read this and the electronic guide(s) at http://support.aeotec.com/trisensor carefully. The failure to follow the recommendations set forth by Aeotec Limited may be dangerous or cause a violation of the law. The manufacturer, importer, distributor, and / or reseller will not be held responsible for any loss or damage resulting from not following any instructions in this guide or in other materials.

TriSensor is intended for use in dry locations only. Do not use in damp, moist, and / or wet locations.

Contains small parts; keep away from children.

Inclusion Description.

Press once TriSensor's Action Button. If it is the first installation, the yellow LED will keep solid until whole network processing is complete. If successful, the LED will flash white -> green -> white -> green, after 2 seconds finished. If failed, the yellow LED lasts for 30 seconds, then the green LED flashes once.

If it is the S2 encryption network, please enter the first 5 digits of DSK.

Exclusion Description.

Press once TriSensor's Action Button, the Purple LED will keep solid until whole network processing is complete. If the exclusion is successful, the LED will flash white -> green ->white -> green and then LED will pulse a blue. If failed, the yellow LED lasts for 30 seconds, then the green LED flashes once.

Reset Description.

1. Power up the device.
2. Press and hold the button for 15s until Red Led is blinking,then release the button.

Note: Please use this procedure only when the network primary controller is missing or otherwise inoperable.

Wakeup Description.

Press and hold the button at least 2s until Red Led is on and then release the button,device will send wakeup notification to controller if device is in a Z-Wave network.

Quick start.

The following will step you through installing TriSensor and connecting it to your Z-Wave network.

1. Select an installation location for TriSensor. The sensor uses light and heat readings to detect motion, so avoid pointing it at sources of either. Tips on optimising the installation location of TriSensor can be found online in its digital guide.
2. Remove the backplate from TriSensor.
3. Remove the battery tab to engage the CR123A battery.
4. Replace the backplate.
5. Set your Z-Wave gateway into its 'add device' mode in order to connect TriSensor to your Z-Wave system. Refer to the gateway's manual if you are unsure of how to perform this step.
6. Set TriSensor into its 'add device' mode;
   a. If your Z-Wave gateway supports S2 encryption and DSK, enter the first 5 digits of the DSK. Refer to 'Used in this guide' to locate the DSK if needed.
   b. If your Z-Wave does not support DSK, press TriSensor's Action Button; its LED will turn yellow.
7. When TriSensor successfully joins your Z-Wave network, its LED will turn alternate between white and green for 2 seconds. Should the LED remain yellow and then flash green, TriSensor has been unable to join your Z-Wave network; repeat the above steps and please contact us for further support if needed.
8. TriSensor can be installed on a flat surface such as a shelf, in a corner or on a wall using the Back-Mount Arm, or within a ceiling or wall using its Recessor accessory (sold separately). If using the Back-Mount Arm:
   a. Screw Back-Mount Arm into the corresponding threaded hole on the back of TriSensor.
   b. Affix Back-Mount Arm to your desired location using the provided double- sided tape or KA2.5x20 mm screws.
   c. Angle TriSensor as desired.

Get help & learn more.

Should you encounter any problem with TriSensor, visit http://support.aeotec.com/trisensor or contact our support team via aeotec.com/contact. You can also learn more about TriSensor features, configuration options, and technical specifications at the link.

Gateway compatibility.
To see if this device is known to be compatible with your Z-Wave gateway, please refer to http://aeotec.com/z-wave-gateways

Declaration of Conformity.
Aeotec Limited declares that TriSensor is in compliance with the essential requirements and other relevant provisions of RED 2014/53/EU, RoHS 2011/65/EU, IEC62321:2008 and EN55561:2012. The full text of the declaration is available from https://support.aeotec.com/trisensor/doc

Specifications.
ave devices operate between 868.40 & 926.3 MHz depending on local restrictions. It uses up to -0.59dBm ERP of transmission power, enabling wireless connectivity. Full information on device specifications and certifications at support.aeotec.com/trisensor/specs

Association.
Thedevicesupports3associationgroups,andeachgroupsupportsmax5associatednodes.

Group 1 is lifeline group; all nodes which associated in this group will receive the messages sent by device throughlifeline.

Group 2 is controlling group, all nodes associated in this group will be controlled through BASIC_SET command by the device when device detects a movement event. Basic Set Value is docided by Configuration Parameter 6.

Group 3 is controlling group, all nodes associated in this group will be controlled through BASIC_SET command by the device when device detects an ambient temperature alarm (Decided by Configuration Parameter 7).

The Command Class supported by each association group is shown in the tablebelow:

Group	CommandClass	Command
1 (Lifeline)	COMMAND_CLASS_NOTIFICATION COMMAND_CLASS_SENSOR_BINARY C OMMAND_CLASS_SENSOR_MULTILEVEL COMMAND_CLASS_BATTERY COMMAND_CLASS_DEVICE_RESET_LOCALLY	NOTIFICATION_REPORT SENSOR_BINARY_REPORT SENSOR_MULTILEVEL_REPORT BATTERY_REPORT DEVICE_RESET_LOCALLY_NOTIFICATION
2 (Control)	COMMAND_CLASS_BASIC (HomeSecurity)	BASIC_SET
3 (Control)	COMMAND_CLASS_BASIC(Temperature)	BASIC_SET

Command Class Configuration
The device supports the controller to configure parameters of the device through Configuration Command Class, and the device has 21 parameters available for users to set according to their different needs:

1) Motion Retrigger Time
   This parameter is configured the delay time before PIR sensor can be triggered again to reset motion timeout counter. Value = 0 will disable PIR sensor from triggering until motion timeout has finished.

Parameter Number	Size (Byte)	Available Settings	Default value
1	2	0 ~ 32767	30

2) Motion Clear Time
   This parameter is configured the time to clear motion event after a motion event detected. Time to motion clear, the device will send a clear event report to controller and send BASIC_SET= 0x00 to nodes associated in group 2. Unit: Second.

Parameter Number	Size (Byte)	Available Settings	Default value
2	2	1 ~ 32767	240

3) Motion Sensitivity
   This parameter is configured the sensitivity that motion detect. 0 – PIR sensor disabled.
   1 – Lowest
   sensitivity. 11 – Highest
   11 – Highest sensitivity.

Parameter Number	Size (Byte)	Available Settings	Default value
3	1	0 ~ 11	11

4) Binary Sensor Report Enable
   '0' – Disable sensor binary report when motion event is detected or cleared.
   '1' – Enable sensor binary report when motion event is detected or cleared.

Parameter Number	Size (Byte)	Available Settings	Default value
4	1	0 , 1	0

5) Disable BASIC_SET to Associated nodes
   This parameter is configured the enabled or disabled send BASIC_SET command to nodes that associated in group 2 and group 3.
   0 – Disabled All Group Basic Set Command
   1 – Enabled Group 2 Basic Set Command, Group 3 Basic Set Command is disabled.
   2 – Enabled Group 3 Basic Set Command, Group 2 Basic Set Command is disabled.
   3 – Enabled Group 2 and Group 3 Basic Set Command.

Parameter Number	Size (Byte)	Available Settings	Default value
5	1	0 ~ 3	3

6) Basic Set Value Settings for Group 2
'0' – Send BASIC_SET = 0xFF to devices associated in Group 2 when motion event is triggered. send BASIC_SET = 0x00 to devices associated in group 2 when motion event is cleared.
'1' – Send BASIC_SET = 0x00 to devices associated in Group 2 when motion event is triggered. send BASIC_SET = 0xFF to devices associated in group 2 when motion event is cleared.
'2' – Send BASIC_SET = 0xFF to devices associated in Group 2 when motion event is triggered.
'3' – Send BASIC_SET = 0x00 to devices associated in Group 2 when motion event is triggered.
'4' – Send 64-SCENE_ID = 0x00 to devices associated in Group 2 when motion event is cleared. '5' – Send BASIC_SET = 0xFF to devices associated in Group 2 when motion event is cleared.

Parameter Number	Size (Byte)	Available Settings	Default value
6	1	0 ~ 5	0

7) Temperature Alarm Value
This parameter is configured the threshold value that alarm level for temperature. When the current ambient temperature value is larger than this configuration value, device will send a BASIC_SET = 0xFF to nodes associated in group 3. If current temperature value is less than this value, device will send a BASIC_SET = 0x00 to nodes associated in group 3.
Value = [Value] x 0.1(Celsius / Fahrenheit)

Parameter Number		Size (Byte)	Available Settings	Default value
7	EU/AU	2	-400 ~ 850 (Celsius)	239 (Celsius)
	US	2	-400 ~ 1185 (Fahrenheit)	750 (Fahrenheit)

8) Led Indicate Disable
This parameter is configured the Led light on disable or enable.
'1' – Enable Led Blink when device detects a motion event.
'0 – Disable Led Blink. This configuration is not affect inclusion, exclusion and reset.

Parameter Number	Size (Byte)	Available Settings	Default value
10	1	0 , 1	1

9) Led Color For Motion Event Report
'0' – Disable.
'1' – Red.
'2' – Green.
'3' – Blue.
'4' – Yellow.
'5' – Pink.
'6' – Cyan.
'7' – Purple.
'8' – Orange.

Parameter Number	Size (Byte)	Available Settings	Default value
11	1	0 – 8	2

10) Led Color For Temperature Sensor Report
'0' – Disable.
'1' – Red.
'2' –Green.
'3' – Blue.
'4' – Yellow.
'5' – Pink.
'6' – Cyan.
'7' – Purple.
'8' – Orange.

Parameter Number	Size (Byte)	Available Settings	Default value
12	1	0 – 8	0

11) Led Color For Light Sensor Report
'0' – Disable.
'1' – Red.
'2' –Green.
'3' – Blue.
'4' – Yellow.
'5' – Pink.
'6' – Cyan.
'7' – Purple.
'8' – Orange.

Parameter Number	Size (Byte)	Available Settings	Default value
13	1	0 – 8	0

12) Led Color For Battery Report
'0' – Disable.
'1' – Red.
'2' –Green.
'3' – Blue.
'4' – Yellow.
'5' – Pink.
'6' – Cyan.
'7' – Purple.
'8' – Orange.

Parameter Number	Size (Byte)	Available Settings	Default value
14	1	0 – 8	0

13) Led Color For Wakeup Notification Report
'0' – Disable.
'1' – Red.
'2' –Green.
'3' – Blue.
'4' – Yellow.
'5' – Pink.
'6' – Cyan.
'7' – Purple.
'8' – Orange.

Parameter Number	Size (Byte)	Available Settings	Default value
15	1	0 – 8	0

14) Temperature Scale Setting
Configure temperature sensor scale type, Temperature to report in Celsius or Fahrenheit.
0 – Celsius (C).
1 – Fahrenheit (F).

Parameter Number		Size (Byte)	Available Settings	Default value
20	EU/AU	1	0 , 1	0
	US	1	0 , 1	1

15) Temperature Threshold Value to Report
Change threshold value for change in temperature to induce an automatic report for temperature sensor. Scale is identical setting in Parameter No.20.
Setting of value 20 can be a change of -2.0 or +2.0 (C or F depending on Parameter No.20) to induce automatic report or setting a value of 2 will be a change of 0.2(C or F).

Parameter Number	Size (Byte)	Available Settings	Default value
21	2	0 – 250	20

16) Light intensity Threshold Value to Report

Chang	Size (Byte)	Available Settings	Default value
22	2	0 ~ 10000	100

17) Temperature Sensor Report Interval
This parameter is configured the time interval for temperature sensor report. This value is larger, the battery life is longer. And the temperature value changed is not obvious. Unit: Second.

Parameter Number	Size (Byte)	Available Settings	Default value
23	2	1 ~ 32767	3600

18) Light Sensor Report Interval
This parameter is configured the time interval for light sensor report. This value is larger, the battery life is longer. And the light intensity changed is not obvious. Unit: Second.

Parameter Number	Size (Byte)	Available Settings	Default value
24	2	1 ~ 32767	3600

Temperature Offset Value
The current measuring temperature value can be add and minus a value by this setting. The scale can be decided by Parameter Number 20.
Temperature Offset Value = [Value] * 0.1(Celsius / Fahrenheit)

Parameter Number	Size (Byte)	Available Settings	Default value
30	2	-200 ~ 200	0

19) Light Intensity Offset Value
The current measuring light intensity value can be add and minus a value by this setting.

Parameter Number	Size (Byte)	Available Settings	Default value
31	2	-1000 ~ 1000	0

20) Light Sensor Calibrated Coefficient
This configuration defines the calibrated scale for ambient light intensity. Because the method and position that the sensor mounted and the cover of sensor will bring measurement error, user can get more real light intensity by this parameter setting. User should run the steps as blows for calibrating
1) Set this parameter value to default (Assumes the sensor has been added in a Z- Wave Network).
2) Place a digital luxmeter close to sensor and keep the same direction, monitor the light intensity value (Vm) which report to controller and record it. The same time user should record the value (Vs) of luxmeter.
3) The scale calibration formula: k = Vm / Vs.
4) The value of k is then multiplied by 1024 and rounded to the nearest whole number.
5) Set the value getting in 5) to this parameter, calibrate finished. For example, Vm = 300, Vs = 2600, then k = 2600 / 300 ≈ 8.6667 k ≈ 8.6667 * 1024 ≈ 8874.7 ≈ 8875

The parameter should be set to 8875.

Parameter Number	Size (Byte)	Available Settings	Default value
100	2	1 ~ 32767	1024

All Supports Command Class
This device supports Z-Wave Command Class as follows:

* COMMAND_CLASS_ZWAVEPLUS_INFO (V2)
* COMMAND_CLASS_SECURITY (V1)
* COMMAND_CLASS_SECURITY_2 (V1)
* COMMAND_CLASS_TRANSPORT_SERVICE (V2)
* COMMAND_CLASS_VERSION (V2)
* COMMAND_CLASS_POWERLEVEL (V1)
* COMMAND_CLASS_ASSOCIATION (V2)
* COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION (V3)
* COMMAND_CLASS_ASSOCIATION_GRP_INFO (V1)
* COMMAND_CLASS_MANUFACTURER_SPECIFIC (V2)
* COMMAND_CLASS_DEVICE_RESET_LOCALLY (V1)
* COMMAND_CLASS_BATTERY (V1)
* COMMAND_CLASS_WAKEUP (V2)
* COMMAND_CLASS_NOTIFICATION (V8)
* COMMAND_CLASS_SENSOR_BINARY (V2)
* COMMAND_CLASS_SENSOR_MULTILEVEL (V7)
* COMMAND_CLASS_CONFIGURATION (V1)
* COMMAND_CLASS_SUPERVISION (V1)

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