

# Dual Sensor (Temperature, Binary)

## 1 General Information about Z-Wave

### Reliable:

Generally radio systems build a direct link between the transmitter and the receiver. The radio signal is attenuated by every obstacle along its path (in the household e.g. wall, furniture etc). In the worst case the radio system ceases to function. The advantage of the intelligent Z-Wave system is the so-called routing function: All mains powered devices of Z-Wave not only act as transmitter or receiver but also simultaneously as "repeater". Should a direct radio link between the transmitter and the receiver not be possible, communication will be established with the assistance of other devices.

### Communicative:

Z-Wave is a bidirectional radio system. This means that a signal is not just sent but also a feedback confirming the reception of the signal occurs automatically. The safety of transmission of the Z-Wave radio-bus-technology is comparable with that of a wire-linked bus system.

### Trouble-free:

Z-Wave transmits at a regulated frequency band with a frequency of 868 MHz. Every Z-Wave network has its own unique network identification. Therefore, it is possible to operate two or more independently operating networks in a room or home without any interference. Troubles that can be caused by other devices, as is the case in open, non-regulated frequencies (e.g. 433 MHz) are excluded.

### Interoperable:

Z-Wave is an international standard that ensures that products from different vendors work together seamlessly. The device was certified by the Z-Wave Alliance to guarantee this interoperability.

## 2 Function



This battery operated device combines a temperature sensor with a binary sensor using dry input connectors. Both sensors functions can be used stand alone or together. The device is powered by a standard AAA battery and can be mounted on any flat surface using double-sided tape. The device has a tempering protection switch that is suited for applications where the dry inputs are used for security related application. The binary sensor is issuing a wireless commands whenever the connections is closed or opened. The temperature sensor needs to be polled in order to get its value.

## 3 Installation

Make sure that the two batteries are included and connected properly. It can be mounted either using double side tape or by screwing the cover part of the device. The device needs to be included before finally mounted.

The temperature function can be used without any further installation or configuration. The binary sensor function is available on the two terminal

blocks inside the device. Please wire these terminals to the external switch that can be used. Beware: You must not power the two terminals. They are only connected with an external switch.



Terminal blocks for external wiring

## 4 Wireless Functions – Z-Wave

### 4.1 Z-Wave Network Inclusion

In order to use the device by a controller the device needs to be included into a Z-Wave network. Only device that are part of the same network can send commands to the device.

1. Follow the instructions on your Z-Wave Primary or Inclusion Controller to include (add) a Z-Wave device
2. After opening the enclosure the tamper switch is released. Press the security tamper switch for at least 3 seconds and less than 8 seconds. Now release it.
3. The LED going on for 1 sec to indicate success.
4. Your device is ready to work!

### 4.2 Z-Wave Network Exclusion

In order to remove the device from a Z-Wave network the following steps have to be performed.

1. Follow the instructions on your Z-Wave Primary or Inclusion Controller to exclude (remove) a Z-Wave device
2. After opening the enclosure the tamper switch is released. Press the security tamper switch for at least 3 seconds and less than 8 seconds. Now release it.
3. The LED going on for 1 sec to indicate success.
4. Note! All configurations and associations stored in the device are deleted during Exclusion process

**Attention: Removing the device from the network means that it is turned back into factory default status.**

### 4.3 Z-Wave Associations

The Dual Sensor supports two association groups. Refer to your Z-Wave Controller instructions to add devices in these association groups. A PC gateway/controller gives you the most comfortable and powerful way to configure your device.

#### Association groups:

1. Dry binary input close/open
2. Alarm Condition – tampering switch trips

All groups support up to 5 nodes.

### 4.4 Z-Wave Configuration

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.

**Reset to factory Default (parameter No 1, size 1 byte)**

Attention: This will delete all your configuration, but the device will remain in the network. Handle with care.

Values:

0 No (default)  
not 0 execute reset

#### Commands sent on external dry contact (parameter No 2, size 1 byte)

Configure what the external contact sends when trigger

Values:

0 Alarm Report Type 2(default)  
not 0 Basic On or Basic OFF

#### Operating Mode (parameter No 5, size 1 byte)

Defines if the sensor is in normal – wakeup- mode or always on. This function shall be used only for testing since its draining the battery very fast.

Values:

1 Normal Wakeup (default)  
3 Always awake

#### Temperature Offset (parameter No 6, size 2 bytes)

Offset to the temperature. This parameter can be used to calibrate the temperature sensor function if needed. Note. As factory default the temperature sensor function is calibrated.

Values:

0 0 K (default)  
not 0 Temperature Offset in K

## 4.5 Z-Wave Specific Device Information

### 4.5.1 Supported Command Classes:

- Sensor Multilevel V1 (reporting Temperature)
- Sensor Binary V1, (reporting dry input short cut)
- Configuration
- Alarm (reporting the tamper protection switch)
- Manufacturer Specific
- Battery
- Wakeup V1
- Association V1
- Version

### 4.5.2 Controlled Command Classes

- Alarm
- Basic

## 5 Technical data

- Wireless: Z-Wave, 868.42 MHz
- Battery: 2 \* AAA (LR03)
- Dimensions: 58 mm x 34 mm x 18 mm
- Color: White
- Z-Wave Software: SDK 4.51
- Mounting: two screws or double side tape
- Display: Red LED confirming Inclusion, Exclusion and dry input closure
- Operating Temperature Range: 0-55°C For indoor use only.