FIB_FGBS-001
Universal Binary Sensor
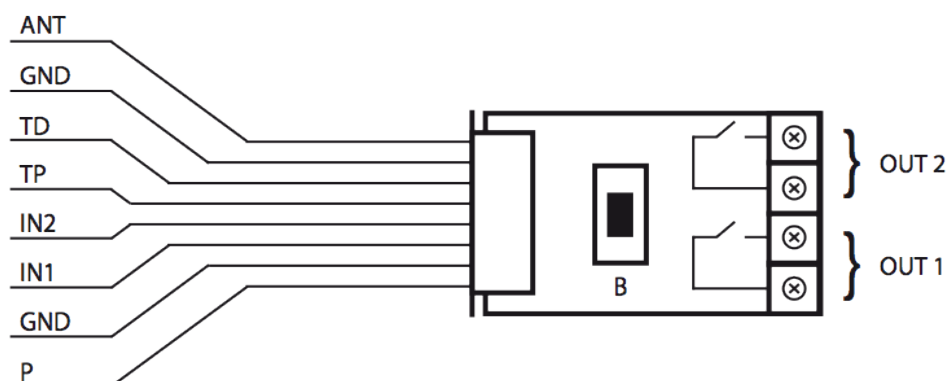
Firmware Version : 3.49

Quick Start

A This device is a Z-Wave Actor. Tripple Click the 'B' Button on the device confirms the inclusion and exclusion.
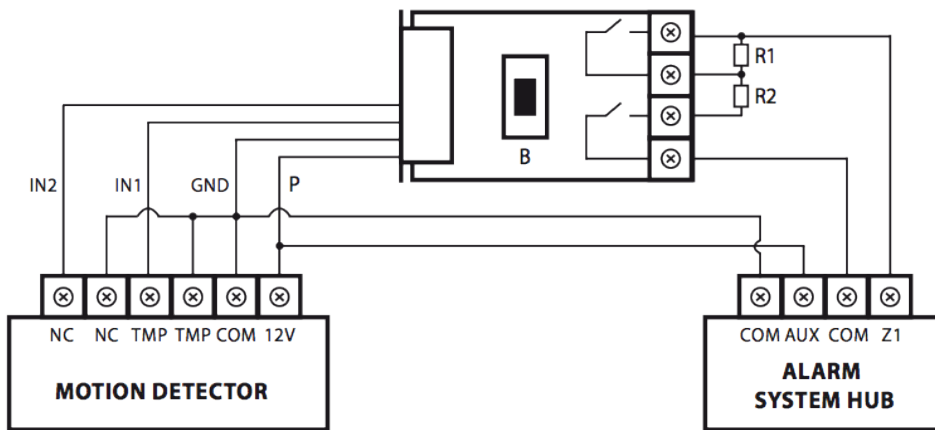
Please refer to the chapters below for detailed information about all aspects of the products usage.

Product description

This universal Z-Wave sensor is designed to improve electronic devices with on/off switches or analog outputs by connecting them to a wireless Z-Wave network. The device can service **two binary inputs** and up to **4 DS18B20 temperature probes**. The device can also **control up to two external digital** inputs (up to 150 mA). The sensor is designed to be included into the housing of another device and to be powered by this device with an input power between 9 and 30 V DC.
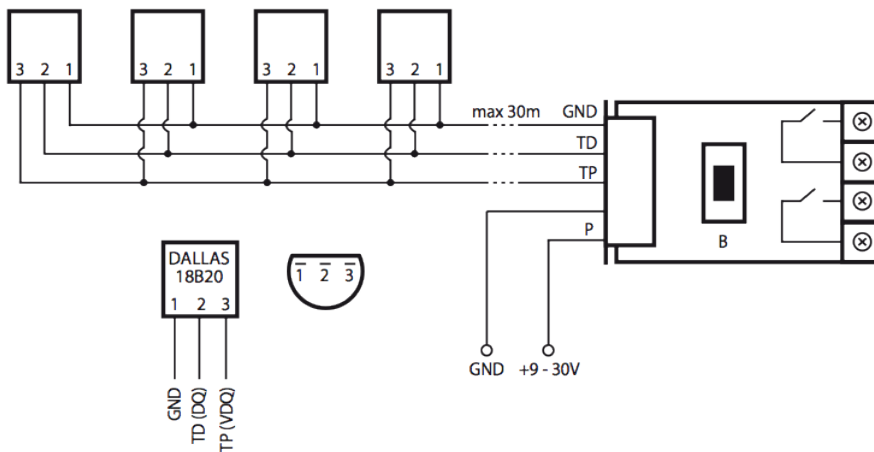
Installation Guidelines

IN2   IN1   GND   P

B

R1
R2

NC   NC   TMP TMP COM 12V

MOTION DETECTOR

COM AUX COM Z1

ALARM SYSTEM HUB

Explanation of the

cable markings

P (POWER), power supply cable, red
GND (Ground), ground cable, blue
OUT1, output No 1, assigned to input IN1
OUT2, output No 2, assigned to input IN2
TP (TEMP_POWER), power supply cable to the DS18B20 temperature sensor, brown
TD (TEMP_DATA), signal cable to the DS18B20 temperature sensors, white
ANT, antenna, black
OUT1, output no 1 - assigned to input IN1
OUT2, output no 2 - assigned to input IN2
B, maintenance button

3 2 1   3 2 1   3 2 1   3 2 1

max 30m   GND
TD
TP
P
B

DALLAS
18B20
1   2   3

1   2   3

GND
TD (DQ)
TP (VDQ)

GND   +9 - 30V

The external temperature sensors DS18B20 are connected to the device as shown on this picture. The subsequent image shows how to connect such an external switch or an external sensor to the terminals.

IN2

B

IN1

P

GND
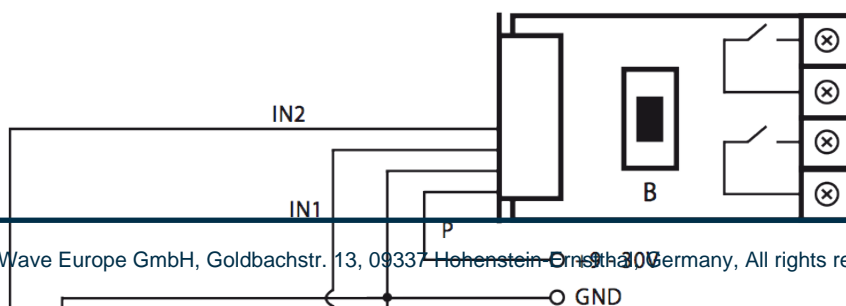
| I | On factory default the device does not belong to any Z-Wave network. The device needs to join an existing wireless network to communicate with the devices of this network. This process is called **Inclusion**. Devices can also leave a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller will be turned into exclusion respective inclusion mode. Please refer to your primary controllers manual on how to turn your controller into inclusion or exclusion mode. Only if the primary controller is in incluthion or exclusion mode, this device can join or leave the network. Leaving the network - i.e. being excluded - sets the device back to factory default.

If the device already belongs to a network, follow the exclusion process before including it in your network. Otherwise inclusion of this device will fail. If the controller being included was a primary controller, it has to be reset first.

Tripple Click the 'B' Button on the device confirms inclusion and exclusion.

Operating the device

Node Information Frame

| NI | The Node Information Frame is the business card of a Z-Wave device. It contains information about the device type and the technical capabilities. The inclusion and exclusion of the device is confirmed by sending out a Node Information Frame. Beside this it may be needed for certain network operations to send out a Node Information Frame.

Tripple Click the 'B' Button on the device sends out a Node Information Frame.

Associations

| A | 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 a common wireless command.

Association Groups:

1	Input IN1 (max. nodes in group: 1)
2	Input IN2 (max. nodes in group: 5)
3	reports device status (max. nodes in group: 5)

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 to configure 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 two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

Input 1 Alarm Delay (Parameter Number 1, Parameter Size 2) defines the delay from triggering Input 1 to sending an alarm. Removing Alarm condition will cancel alarm

Value	Description
0 — 32000	seconds (Default 0)

Input 2 Alarm Delay (Parameter Number 2, Parameter Size 2) defines the delay from triggering Input 2 to sending an alarm. Removing Alarm condition will cancel alarm

Value	Description
0 — 32000	seconds (Default 0)

Type of Input 1 (Parameter Number 3, Parameter Size 1)

Value	Description
0	INPUT_NO (Normal Open) (Default)
1	INPUT_NC (Normal Close)
2	INPUT_MONOSTABLE (Monostabil)
3	INPUT_BISTABLE (bistabil)

Type of Input 2 (Parameter Number 4, Parameter Size 1)

Value	Description
0	INPUT_NO (Normal Open) (Default)
1	INPUT_NC (Normal Close)
2	INPUT_MONOSTABLE (Monostabil)
3	INPUT_BISTABLE (bistabil)

Type of control frame activated via IN input 1 (Parameter Number 5, Parameter Size 1) The parameter allows you to specify the type of an alarm frame for Input 1

Value	Description
0	ALARM GENERIC frame
1	ALARM SMOKE frame
2	ALARM CO frame
3	ALARM CO2 frame
4	ALARM HEAT frame
5	ALARM WATER frame
255	Control frame BASIC_SET (Default)

Type of control frame activated via IN input 2 (Parameter Number 6, Parameter Size 1) The parameter allows you to specify the type of an alarm frame for Input 2

Value	Description
0	ALARM GENERIC frame
1	ALARM SMOKE frame
2	ALARM CO frame
3	ALARM CO2 frame
4	ALARM HEAT frame
5	ALARM WATER frame
255	Control frame BASIC_SET (Default)

Value of the parameter specifying the forced level of dimming/opening roller blinds from Input 1 (Parameter Number 7, Parameter Size 1) In case of alarm frames an alarm priority is specified. Value of 255 makes it possible to activate a device. In case of the Dimmer module it means activating the device and setting it to the previously stored condition, e.g. when Dimmer is set to 30%, deactivated and then reactivated using 255 commend, it will be automatically set to the previous condition i.e. 30%.

Value	Description
1 — 99	Dimming level
255	Turn On (Default)

Value of the parameter specifying the forced level of dimming/opening roller blinds from Input 2 (Parameter Number 8, Parameter Size 1) In case of alarm frames an alarm priority is specified. Value of 255 makes it possible to activate a device. In case of the Dimmer module it means activating the device and setting it to the previously stored condition, e.g. when Dimmer is set to 30%, deactivated and then reactivated using 255 commend, it will be automatically set to the previous condition i.e. 30%.

Value	Description
1 — 99	Dimming level
255	Turn On (Default)

Deactivating transmission of the alarm cancelling frame or the control frame deactivating the device (Basic) (Parameter Number 9, Parameter Size 1) It allows for disabling the function of deactivating the device and cancelling alarms for devices associated with IN input.

Value	Description
0	information is sent to group 1 and 2 (Default)
1	information is not sent for group 2 but sent for group 1
2	information is not sent for group 1 but sent for group 2
3	information is not sent

Interval between Readings of all temperature sensors (Parameter Number 10, Parameter Size 1)

Value	Description
0 — 255	seconds (Default 20)

Trigger level to send out temperature report (Parameter Number 12, Parameter Size 1) defines the maximum deviation of the actual temperature compared to the last wirelessly reported temperature to create a new wireless report to the device in association group 3. If set to zero a report will be generated at every regular wakeup of the device but as a minimum every 4 minutes.

Value	Description
0 — 255	1/16 Kelvin (Default 8)

Sending an alarm or control frame (for IN input, depending on parameter no.5 value), and TMP button alarm frame (Parameter Number 13, Parameter Size 1) The frame is sent in "broadcast" mode, i.e. to all devices within range - information sent in this mode is not repeated by the mesh network.

Value	Description
0	IN1 and IN2 Broadcast mode inactive (Default)
1	IN1 broadcast mode active, IN2 broadcast mode inactive
2	IN1 broadcast mode inactive, IN2 broadcast mode active
3	IN1 and IN2 broadcast mode active

Scene activation functionality (Parameter Number 14, Parameter Size 1) IN input: Switch from "off" to "on" ID10; Switch from "on" to "off" ID11; Remaining IDs are recognized correctly if the value of parameter no.3 was set to 2 Holding down ID12; Releasing ID13; Double click ID14; Triple click ID 15; Scene activation functionality may shorten the battery life, even by 25%.

Value	Description
0	functionality deactivated (Default)
1	functionality activated

Technical Data

IP Rating	20
Explorer Frame Support	Yes
SDK	4.53.00
Device Type	Slave with routing capabilities
Generic Device Class	Binary Sensor
Specific Device Class	Routing Binary Sensor
Routing	Yes
FLiRS	No
Firmware Version	3.49