Qubino

Z-WAVE PLUS

The **INNOVATIVE** and **SMALLEST**

Flush Dimmer

ORDERING CODE	Z-WAVE FREQUENCY
ZMNHDD1	868,4 MHz
ZMNHDD2	921,4 MHz
ZMNHDD3	908,4 MHz
ZMNHDD4	869,0 MHz
ZMNHDD5	916,0 MHz
ZMNHDD8	865,2 MHz

This Z-Wave module is used for dimming the bulb or to manage the speed of a fan. The module can be controlled either through a Z-Wave network or through the wall switch. The module is designed to be mounted inside a "flush mounting box", hidden behind a traditional wall switch. Module measures power consumption of bulb or fan and supports connection of digital temperature sensor. It is designed to act as repeater in order to improve range and stability of Z-Wave network.

Supported switches
Module supports mono and bi-stable switches (input I1).

Installation
- To prevent electrical shock and/or equipment damage, disconnect electrical power at the main fuse or circuit breaker before installation or any servicing.
- Make sure, that no voltage is present in the installation.
- Prevent the disconnecting device from being switched on accidentally.
- Connect the module according to electrical diagram.
- Locate the antenna far from metal elements (as far as possible).
- Do not shorten the antenna.

Danger of electrocution!
- Module installation requires a great degree of skill and may be performed only by a qualified and licensed electrician.
- Even when the module is turned off, voltage may be present on its terminals.

Note!
Do not connect the module to loads exceeding recommended values. Connect the module only in accordance to the below diagrams. Improper connections may be dangerous.
Electrical installation must be protected by directly associated over current protection fuse 1A, gG or Time lag T, rated breaking capacity 1500A (ESKA 522.717) must be used according to wiring diagram to achieve appropriate overload protection of the module. The fuse must be installed in fuse holder type: Adels contact 503 Si/ 1 DS.
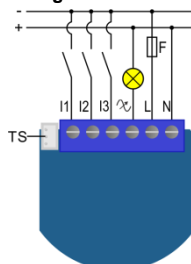
Package contents:
- Flush Dimmer

Electrical diagram 230VAC
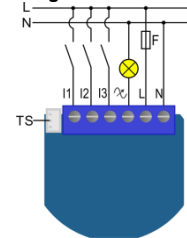
Notes for the diagram:

N Neutral lead
L Live lead
∿ Output for electrical device
I3 Input for switch/push button or sensor
I2 Input for switch/push button or sensor
I1 Input for push button/switch
TS Terminal for digital temperature sensor (only for Flush Dimmer module compatible digital temperature sensor, which must be ordered separately).

Electrical diagram 24VDC

Notes for the diagram:

N + VDC
L - VDC
∿ Output for electrical device
I3 Input for switch/push button or sensor
I2 Input for switch/push button or sensor
I1 Input for push button/switch
TS Terminal for digital temperature sensor (only for Flush Dimmer module compatible digital temperature sensor, which must be ordered separately).

S Service button (used to add or remove module from the Z-Wave network in case of 24 V SELV power supply).

WARNING: Service button S **must NOT be used** when module is connected to 110-230V power supply.
NOTE: When overload is detected, module automatically switches off the output. In this case check if the load is according to specifications and if connections are according diagram. To recover module in normal state, you need to power cycle the module.

Module Inclusion (Adding to Z-Wave network)
- Connect module to power supply (with temperature sensor connected - if purchased),

- enable add/remove mode on main controller
- auto-inclusion (works for about 2 minutes after connected to power supply) or
- press push button I1 three times within 3s (3 times change switch state within 3 seconds) or
- press service button **S** (only applicable for 24 V SELV supply voltage) for more than 2 second.

NOTE1: For auto-inclusion procedure, first set main controller into inclusion mode and then connect module to power supply.
NOTE2: When connecting temperature sensor to module that has already been included, you have to exclude module first. Switch off power supply, connect the sensor and re-include the module.

Module Exclusion/Reset (Removing from Z-Wave network)
- Connect module to power supply
- bring module within maximum 1 meter (3feet) of the main controller,
- enable add/remove mode on main controller,
- press push button **I1** five times within 3s (5 times change switch state within 3 seconds) in the first 60 seconds after the module is connected to the power supply or
- press service button **S** (only applicable for 24 V SELV supply voltage) for more than 6 second.

By this function all parameters of the module are set to default values and own ID is deleted.Please use reset procedure only when the network primary controller is missing or otherwise inoperable."
If push button I1 is pressed three times within 3s (or service button S is pressed more than 2 and less than 6 seconds) module is excluded, but configuration parameters are not set to default values.
NOTE: If the module is included with parameters 100 or 101 with values different to default and module reset is done, wait at least 30s before next inclusion.

Association
Association enables Flush Dimmer module to transfer commands inside Z-Wave network directly (without main controller) to other Z-Wave modules.

Associated Groups:
Group 1: Lifeline group (reserved for communication with the main controller), 1 node allowed.
Group 2: basic on/off (triggered at change of the input I1 and reflecting state of the output Q) up to 16 nodes
Group 3: start level change/stop level change (triggered at change of the input I1 state and reflecting its state) up to 16 nodes
Group 4: multilevel set (triggered at changes of state/value of the Flush Dimmer) up to 16 nodes
Group 5: basic on/off (triggered at change of the input I2 state and reflecting its state) up to 16 nodes.
Group 6: Notification report (triggered at change of the input I2 state and reflecting its state) up to 16 nodes.
Group 7: Binary sensor (triggered at change of the input I2 state and reflecting its state) up to 16 nodes.
Group 8: basic on/off (triggered at change of the input I3 state and reflecting its state) up to 16 nodes.
Group 9: notification report (triggered at change of the input I3 state and reflecting its state) up to 16 nodes.
Group 10: binary sensor report (triggered at change of the input I3 state and reflecting its state) up to 16 nodes.
Group 11: multilevel sensor report (triggered at change of temperature sensor) up to 16 nodes.

Endpoint 1:
Group 1: Lifeline group, 0 nodes allowed.
Group 2: basic on/off (triggered at change of the input I1 state and reflecting its state) up to 16 nodes

Group 3: multilevel set (triggered at changes of state/value of the Flush Dimmer) up to 16 nodes
Group 4: start level change/stop level change (triggered at change of the input I1 state and reflecting its state) up to 16 nodes

Endpoint 2:
Group 1: Lifeline group, 0 nodes allowed.
Group 2: basic on/off (triggered at change of the input I2 state and reflecting its state) up to 16 nodes.
Group 3: Notification Report (triggered at change of the input I2 state and reflecting its state) up to 16 nodes.
Group 4: Binary Sensor Report (triggered at change of the input I2 state and reflecting its state) up to 16 nodes.

Endpoint 3:
Group 1: Lifeline group, 0 nodes allowed.
Group 2: basic on/off (triggered at change of the input I3, state and reflecting its state) up to 16 nodes.
Group 3: Notification Report (triggered at change of the input I3 state and reflecting its state) up to 16 nodes.
Group 4: Binary Sensor Report (triggered at change of the input I3 state and reflecting its state) up to 16 nodes.

End point 4:
Group 1: Lifeline group, 0 nodes allowed.
Group 2: multilevel sensor report (triggered at change of temperature sensor) up to 16 nodes.

Configuration parameters

Parameter no. 1 – Input 1 switch type
Available config. parameters (data type is 1 Byte DEC):
- default value 0
- 0 - mono-stable switch type (push button) – button quick press turns between previous set Dimmer value and zero
- 1 - bi-stable switch type

NOTE: Switch connected to S1 terminal is a master switch. It activates the basic functionality of the Dimmer

Parameter no. 2 – Input 2 switch type
Available config. parameters (data type is 1 Byte DEC):
- default value 0
- 0 - mono-stable switch type (push button) – button quick press turns between previous set Dimmer value and zero
- 1 - bi-stable switch type

NOTE: to enable this function, Parameter 20 or Parameter 100 has to be set.

Parameter no. 3 – Input 2 contact type
Available config. parameters (data type is 1 Byte DEC):
- default value 0
- 0 - NO (normally open) input type
- 1 - NC (normally close) input type

Parameter no. 4 – Input 3 contact type
Available config. parameters (data type is 1 Byte DEC):
- default value 0
- 0 - NO (normally open) input type
- 1 - NC (normally close) input type

Parameter no. 10 - Activate / deactivate functions ALL ON / ALL OFF
Available config. parameters (data type is 2 Byte DEC):
- default value 255
- 255 - ALL ON active, ALL OFF active.
- 0 - ALL ON is not active, ALL OFF is not active
- 1 - ALL ON is not active, ALL OFF active
- 2 - ALL ON active, ALL OFF is not active

Flush Dimmer module responds to commands ALL ON / ALL OFF that may be sent by the main controller or by other controller belonging to the system.

Parameter no. 11 - Automatic turning off output after set time
Available config. parameters (data type is 2 Byte DEC):
- default value 0

- 0 - Auto OFF disabled
- 1 - 32536 = 1second - 32536 seconds Auto OFF enabled with define time, step is 1 second.

Parameter no. 12 - Automatic turning on output after set time
Available config. parameters (data type is 2 Byte DEC):
- default value 0
- 0 - Auto ON disabled
- 1 - 32535 = 1second - 32535 seconds Auto ON enabled with define time, step is 1 second.

Parameter no. 20 – Enable/Disable 3way switch/ additional switch
Dimming is done by push button or switch connected to I1 (by default). Enabling 3way switch, dimming can be controlled by push button or switch connected to I1 and I2. Available config. parameters (data type is 1 Byte DEC):
- default value 0
- 0 - single push button (connected to I1)
- 1 - 3 way switch (connected to I1 and I2)
- 2 - Additional switch (connected to I2)

Parameter no. 21 – Enable/Disable Double click function
If Double click function is enabled, a fast double click on the push button will set dimming power at maximum dimming value. Available configuration parameters (data type is 1 Byte DEC):
- default value 0
- 0 - double click disabled
- 1 - double click enabled

Parameter no. 30 - Saving the state of the device after a power failure
Available config. parameters (data type is 1 Byte DEC):
- default value 0
- 0 - Flush Dimmer module saves its state before power failure (it returns to the last position saved before a power failure).
- 1 - Flush Dimmer module does not save the state after a power failure, it returns to "off" position.

Parameter no. 40 – Power reporting in Watts on power change
Set value means percentage, set value from 0 - 100=0% - 100%. Available configuration parameters (data type is 1 Byte DEC):
- default value 5
- 0 - reporting disabled
- 1 - 100 = 1% - 100% Reporting enabled. Power report is send (push) only when actual power in Watts in real time changes for more than set percentage comparing to previous actual power in Watts, step is 1%.

NOTE: if power changed is less than 1W, the report is not send (pushed), independent of percentage set.

Parameter no. 42 – Power reporting in Watts by time interval
Set value means time interval (0 - 32767) in seconds, when power report is send. Available configuration parameters (data type is 2 Byte DEC):
- default value 0
- 0 - reporting disabled
- 1 - 32767 = 1 second - 32767 seconds. Reporting enabled. Power report is send with time interval set by entered value.

Parameter no. 60 – Minimum dimming value
Available config. parameters (data type is 1 Byte DEC):
- default value 1 = 1% (minimum dimming value)
- 1- 98 = 1% - 98%, step is 1%. Minimum dimming values is set by entered value.

NOTE: The minimum level may not be higher than the maximum level! 1% min. dimming value is defined by Z-Wave multilevel device class.

Parameter no. 61 – Maximum dimming value

Available config. parameters (data type is 1 Byte DEC):

- default value 99 = 99% (Maximum dimming value)
- 2- 99 = 2% - 99%, step is 1%. Maximum dimming values is set by entered value.

NOTE: The maximum level may not be lower than the minimum level! 99% max. dimming value is defined by Z-Wave multilevel device class.

Parameter no. 65 – Dimming time (soft on/off)

Set value means time of moving the Dimmer between min. and max. dimming values by short press of push button I1 or controlled through UI (BasicSet). Available configuration parameters (data type is 2 Byte DEC):

- default value 100 = 1s
- 50 - 255 = 500 mseconds - 2550 mseconds (2,55s), step is 10 mseconds

Parameter no. 66 – Dimming time when key pressed

Time of moving the Dimmer between min. and max dimming values by continues hold of push button I1 or associated device. Available configuration parameters (data type is 2 Byte DEC):

- default value 3 = 3s
- 1- 255 = 1 second – 255 seconds

Parameter no. 67 – Ignore start level

This parameter is used with association group 3.

A receiving device SHOULD respect the start level if the Ignore Start Level bit is 0. A receiving device MUST ignore the start level if the Ignore Start Level bit is 1. Available configuration parameters (data type is 1 Byte DEC):

- default value 0
- 0 - respect start level
- 1 - ignore start level

Parameter no. 68 – Dimming duration

This parameter is used with association group 3.

The Duration field MUST specify the time that the transition should take from the current value to the new target value. A supporting device SHOULD respect the specified Duration value. Available configuration parameters (data type is 1 Byte DEC):

- default value 0 (dimming duration according to parameter 66)
- 1 - 127 (from 1 to 127 seconds)

Parameter no. 100 – Enable / Disable Endpoints I2 or select Notification Type and Event

Enabling I2 means that Endpoint (I2) will be present on UI. Disabling it will result in hiding the endpoint according to the parameter set value. Additionally, a Notification Type and Event can be selected for the endpoint. Available configuration parameters (data type is 1 Byte DEC):

Endpoint device type selection:

- notification sensor (1 - 6):
GENERIC_TYPE_SENSOR_NOTIFICATION,
SPECIFIC_TYPE_NOTIFICATION_SENSOR

- default value 0
- 1 - Home Security; Motion Detection, unknown loc.
- 2 - CO; Carbon Monoxide detected, unknown loc.
- 3 - CO2; Carbon Dioxide detected, unknown loc.
- 4 - Water Alarm; Water Leak detected, unknown loc.
- 5 - Heat Alarm; Overheat detected, unknown loc.
- 6 - Smoke Alarm; Smoke detected, unknown loc.
- 0 - Endpoint, I2 disabled

- sensor binary (9): GENERIC_TYPE_SENSOR_BINARY, SPECIFIC_TYPE_NOT_USED

- 9 - Sensor binary

NOTE1: After parameter change, first exclude module (without setting parameters to default value) then wait at least 30s and then re include the module!
NOTE 2: When the parameter is set to value 9 the notifications are send for Home Security.

Parameter no. 101 – Enable / Disable Endpoints I3 or select Notification Type and Event

Enabling I3 means that Endpoint (I3) will be present on UI. Disabling it will result in hiding the endpoint according to the parameter set value. Additionally, a Notification Type and Event can be selected for the endpoint. Available configuration parameters (data type is 1 Byte DEC):

Endpoint device type selection:

- notification sensor (1 - 6):
GENERIC_TYPE_SENSOR_NOTIFICATION,
SPECIFIC_TYPE_NOTIFICATION_SENSOR

- default value 0
- 1 - Home Security; Motion Detection, unknown loc.
- 2 - CO; Carbon Monoxide detected, unknown loc..
- 3 - CO2; Carbon Dioxide detected, unknown loc.
- 4 - Water Alarm; Water Leak detected, unknown loc.
- 5 - Heat Alarm; Overheat detected, unknown loc.
- 6 - Smoke Alarm; Smoke detected, unknown loc.
- 0 - Endpoint, I3 disabled

- sensor binary (9): GENERIC_TYPE_SENSOR_BINARY, SPECIFIC_TYPE_NOT_USED

- 9 - Sensor binary

NOTE1: After parameter change, first exclude module (without setting parameters to default value) then wait at least 30s and then re include the module!
NOTE 2: When the parameter is set to value 9 the notifications are send for Home Security.

Parameter no. 110 – Temperature sensor offset settings

Set value is added or subtracted to actual measured value by sensor. Available configuration parameters (data type is 2 Byte DEC):

- default value 32536
- 32536 - offset is 0.0C
- From 1 to 100 - value from 0.1 °C to 10.0 °C is added to actual measured temperature.
- From 1001 to 1100 - value from -0.1 °C to -10.0 °C is subtracted to actual measured temperature.

Parameter no. 120 –Temperature sensor reporting

If digital temperature sensor is connected, module reports measured temperature on temperature change defined by this parameter. Available configuration parameters (data type is 1 Byte DEC):

- default value 5 = 0,5°C change
- 0 - reporting disabled
- 1 - 127 = 0,1°C - 12,7°C, step is 0,1°C

Parameter No. 249 – Enable/Disable Reporting on Set command

Available configuration parameter (data type is 1 Byte Dec):

- default Value 1
- 0 – Disable reporting
- 1 – Enable reporting

Parameter No. 250 – Unsecure / Secure Inclusion

Available configuration parameter (data type is 1 Byte Dec):

- default Value 0
- 0 – Unsecure Inclusion
- 1 – Secure Inclusion

A Flush dimmer supports secure and unsecure inclusion. Even if the controller does not support security command classes, a dimmer could be included as unsecure and keep all the functionality.

Technical Specifications

Power supply	110 - 230 VAC ±10% 50 or 60Hz**,(24-30VDC)
Rated load current of AC output	0,6A / 230VAC
Rated load current of DC output	0,85A / 30VDC
Output circuit power of AC output (resistive load)*	140W (230VAC)
Output circuit power of DC output (resistive load)	21W (24VDC)
Power measurement accuracy	+/-2W
Digital temperature sensor range (sensor must be ordered separately)	-50 ~ +125°C
Operation temperature	-10 ~ +40°C
Distance	up to 30 m indoors (depending on building materials)
Dimensions (WxHxD) (package)	41,8x36,8x15,4mm (79x52x22mm)
Weight (Brutto with package)	28g (34g)
Electricity consumption	0,7W
For installation in boxes	Ø ≥ 60mm or 2M, depth≥ 60mm
Switching	MOSFET (Trailing edge)

*max 100W mono-phase asynchronous fan motor can be connected to Dimmer output.
** depend on ordering code

Max Power Limit is automatically set by a software. If max power is exceeded for more than 5 seconds, the output is turned off up to the next power cycle of the module.When overload occurred, Event "Over-load detected" is send to the gateway.
Consumption in kWh is reported on every change for 0.1kWh.

Description of switch function:

Switch toggles (parameter 1 set to 1) the state of the light bulb between the last dimming value and 0. If last dimming value is 0 then the light is turned 100% when switch changes its state.

Bulb types which support dimming function:

- The classical incandescent bulbs.
- Halogen bulbs operated by 230 V AC (High Voltage Halogen).
- Low voltage halogen bulbs with electronic or conventional transformer.
- Dimmable compact fluorescent bulb (CFL). If the bulb at low intensities flushes, it is recommended to set parameter 60 (minimum dimming value) to 30 or more.
- Dimmable LED bulbs.

Wave Device Class:

ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_0N
GENERIC_TYPE_SWITCH_MULTILEVEL
SPECIFIC_TYPE_POWER_SWITCH_MULTILEVEL

Z-Wave Supported Command Classes:

COMMAND_CLASS_ZWAVEPLUS_INFO_V2,
COMMAND_CLASS_VERSION_V2
COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
COMMAND_CLASS_POWERLEVEL_V1
COMMAND_CLASS_SECURITY

Securely Supported Command Classes:

COMMAND_CLASS_SWITCH_ALL_V1
COMMAND_CLASS_SWITCH_BINARY_V1
COMMAND_CLASS_SENSOR_BINARY_V1
COMMAND_CLASS_SWITCH_MULTILEVEL_V3
COMMAND_CLASS_METER_V4
COMMAND_CLASS_SENSOR_MULTILEVEl_V7
COMMAND_CLASS_NOTIFICATION_V5
COMMAND_CLASS_MULTI_CHANNEL_V4
COMMAND_CLASS_ASSOCIATION_2
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V3
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V2
COMMAND_CLASS_CONFIGURATION_V1
COMMAND_CLASS_MARK
COMMAND_CLASS_BASIC_V1
COMMAND_CLASS_SWITCH_MULTILEVEL_V3

Endpoint 1

Device Class:

ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_0N
GENERIC_TYPE_SWITCH_MULTILEVEL
SPE SPECIFIC_TYPE_POWER_SWITCH_MULTILEVEL

Command Classes:

COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_SECURITY
COMMAND_CLASS_ASSOCIATION_2
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V3
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V2
COMMAND_CLASS_SWITCH_ALL_V1
COMMAND_CLASS_SWITCH_BINARY_V1
COMMAND_CLASS_SWITCH_MULTILEVEL_V3
COMMAND_CLASS_METER_V4
COMMAND_CLASS_NOTIFICATION_V5
COMMAND_CLASS_MARK
COMMAND_CLASS_BASIC_V1
COMMAND_CLASS_SWITCH_MULTILEVEL_V3

Endpoint 2 (I2):

Device Class:

ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_0N
GENERIC_TYPE_SENSOR_NOTIFICATION
SPECIFIC_TYPE_NOTIFICATION_SENSOR

Securely Supported Command Classes:

COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_SECURITY
COMMAND_CLASS_ASSOCIATION_V2
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V3
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V2
COMMAND_CLASS_SENSOR_BINARY_V1
COMMAND_CLASS_NOTIFICATION_V5
COMMAND_CLASS_MARK
COMMAND_CLASS_BASIC_V1

Endpoint 3 (I3):

Device Class:

ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_0N
GENERIC_TYPE_SENSOR_NOTIFICATION
SPECIFIC_TYPE_NOTIFICATION_SENSOR

Command Classes:

COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_SECURITY
COMMAND_CLASS_ASSOCIATION_V2
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V3
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V2
COMMAND_CLASS_SENSOR_BINARY_V1
COMMAND_CLASS_NOTIFICATION_V5
COMMAND_CLASS_MARK
COMMAND_CLASS_BASIC_V1

Endpoint 4:

Device Class:

ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_0N
GENERIC_TYPE_SENSOR_MULTILEVEL
SPECIFIC_TYPE_ROUTING_SENSOR_MULTILEVEL

Command Classes:

COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_SECURITY
COMMAND_CLASS_ASSOCIATION_V2
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION_V3
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V2
COMMAND_CLASS_SENSOR_MULTILEVEL_V7

NOTE: The above list is valid for the product with a temperature sensor connected to TS terminal. In case the sensor is not connected then following command class isn't supported:
COMMAND_CLASS_SENSOR_MULTILEVEL_V7

NOTE: The product supports the following COMMAND_CLASS_NOTIFICATION_V5 events:

- Smoke Alarm v2 – Smoke detected, unknown loc. (0x02)
- CO Alarm v2 – CO detected, unknown location (0x02)
- CO2 Alarm v2 – CO2 detected, unknown loc (0x02)
- Heat Alarm v2 – Overheat detected, unknown location (0x02)
- Water Alarm v2 – Water Leak detected, unknown location (0x02)
- Home Security – Motion Detection, unknown location (0x08)

COMMAND_CLASS_BASIC:

- The module will be turned ON or OFF after receiving the BASIC_SET command. To be turned ON: [Command Class Basic , Basic Set, Basic Value = 0x01~0x63 in percentage; FF set to last value]
- To be turned OFF:[Command Class Basic , Basic Set, Basic Value = 0x00]

This Security Enabled Z-Wave Plus product can be included and operated in any Z-Wave network with other Z-Wave certified devices from any other manufacturers. All constantly powered nodes in the same network will act as repeaters regardless of the vendor in order to increase reliability of the network.

Important disclaimer

Z-Wave wireless communication is inherently not always 100% reliable, and as such, this product should not be used in situations in which life and/or valuables are solely dependent on its function.

Warning!

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.
Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being. When replacing old appliances with new once, the retailer is legally obligated to take back your old appliance for disposal at least for free of charge.
This user manual is subject to change and improvement without notice.
NOTE: User manual is valid for module with SW version S3 (SW version is part of P/N)! Example: P/N: ZMNHDDx Hx**S3**Px