



qubino
WIRELESS SMART HOME

Mini Dimmer

EN: Mini Dimmer is a MOSFET-switching light device that is compatible with 2 or 3-wire connections, which mean that doesn't require neutral wire. It supports also control of low-voltage halogen lamps with electronic transformers, dimmable compact fluorescent lights, and dimmable LED bulbs. It measures power consumption of the connected device. It supports push-button/momentary switches and toggle switches (default) and can act as a normal switch with non-dimmable lights. Qubino Mini Dimmer allows the easiest and quickest installation. It is designed to act as repeater in order to improve range and stability of Z-Wave™ network.

PACKAGE CONTENTS

Mini Dimmer device, Installation Manual, S2 packaging label

INSTALLATION

- To prevent electrical shock and/or equipment damage, disconnect electrical power at the main fuse or circuit breaker before installation and maintenance.
- Be aware that even if the circuit breaker is off, some voltage may remain in the wires — before proceeding with the installation, be sure no voltage is present in the wiring.
- Take extra precautions to avoid accidentally turning on the device during installation.
- Connect the device exactly according to the diagram.
- Place the antenna as far as possible from metal elements as they may cause signal interference.
- Do not shorten the antenna.

Danger of electrocution!

Installation of this device requires a great degree of skill and may be performed only by a licensed and qualified electrician. Please keep in mind that even when the device is turned off, voltage may still be present in the device's terminals.

Note!

Do not connect the device to loads exceeding the recommended values. Connect the device exactly as shown in the provided diagrams. Improper wiring may be dangerous and result in equipment damage.

Z-WAVE INCLUSION

AUTO-INCLUSION

- Enable inclusion mode on your Z-Wave gateway (hub)
- Connect the device to the power supply
- Auto-inclusion will be initiated within 5 seconds of connection to the power supply and the device will automatically enroll in your network

MANUAL INCLUSION

- Enable add/remove mode on your Z-Wave gateway (hub)
- Connect the device to the power supply
- Toggle the switch connected to the terminal I 3 times within 3 seconds. The device has to get On/Off signal 3 times, meaning 3 times push of the button or with the normal button 3 times On and 3 times Off.

OR

If the device is powered by 24 Vdc SELV supply, press and hold the S (Service) button for at least 2 seconds

3. A new dimming device (multilevel switch) will appear on your dashboard

4. Inclusion with the switch connected to terminal I is not limited by time

Note: In case of S2 Security inclusion a dialog will appear prompting you to enter the corresponding PIN number (5 underlined digits) that are written on the module label and the label inserted in the packaging (check the example picture).

IMPORTANT: The PIN code must not be lost

Z – WAVE EXCLUSION/RESET

Z-WAVE EXCLUSION

- Connect the device to the power supply
- Make sure the device is within direct range of your Z-Wave gateway (hub) or use a hand-held Z-Wave remote to perform exclusion
- Enable exclusion mode on your Z-Wave gateway (hub)
- Toggle the switch connected to terminal I 3 times within 3 seconds. The device has to get On/Off signal 3 times, meaning 3 times push of the button or with the normal button 3 times On and 3 times Off.

OR

- If the device is powered by 24 Vdc SELV supply, press and hold the S (Service) button for 2 to 6 seconds
- Exclusion with the switch connected to terminal I is not limited by time
- The device will be excluded from your network but any custom configuration parameters will not be erased.

FACTORY RESET

- Connect the device to the power supply
- Within the first minute the device is connected to the power supply, toggle the switch connected to the terminal I 5 times within 3 seconds

OR

If the device is powered by 24 Vdc SELV supply, press and hold the S (Service) button for at least 6 seconds

By resetting the device, all custom parameters previously set on the device will return to their default values, and a node ID will be deleted. Use this reset procedure only when the gateway (hub) is missing or otherwise inoperable.

NOTE: See the extended manual for custom settings and parameters available for this device.

IMPORTANT DISCLAIMER

Z-Wave wireless communication is not always 100% reliable. This device should not be used in situations in which life and/or valuables are solely dependent on its functioning. If the device is not recognized by your gateway (hub) or shows up incorrectly, you may need to change the device type manually and make sure your gateway (hub) supports Z-Wave Plus™ multi-level switch devices. Contact us for help before returning the product: <http://qubino.com/support/#email>

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 ones, the retailer is legally obligated to take back your old appliance for disposal free of charge.

NOTIFICATION COMMAND CLASS

The Mini Dimmer supports the following notifications:

- In case of exceeding the power value set in parameter 70 (default 200 W) for more than 5 seconds the Mini Dimmer

automatically turns off the output and the overload notification is sent.

• In case the parameter 70 is disabled the Mini Dimmer has a fixed overload safety value of 220 W to prevent any damage to the module. In this case if the active power is greater than 220 W for 5 second or more the output is turned off automatically and an overload notification is sent.

Notification Type: Power Management (0x08) Notification Event: Power Over-load detected (0x08)

CONFIGURATION PARAMETER

Parameter no. 1 – In-wall Switch Type for Load (%) to control terminal I
With this parameter, you can select between momentary and on/off toggle switch types.

Values (size is 1-byte dec):

- default value 0
- 0 - momentary
- 1 - on/off toggle switch

Parameter no. 5 – Working mode

With this parameter, you can change the device presentation on the user interface.

Values (size is 1-byte dec):

- default value 0
- 0 - Dimmer mode
- 1 - Switch mode

Ⓜ NOTE: After parameter change, first exclude the device (without setting parameters to default value) then wait at least 30s before reinclusion.

Parameter no. 11 - Turn Load 1 (%) Off Automatically with Timer If Load (%) is ON, you can schedule it to turn OFF automatically after a period of time defined in this parameter. The timer is reset to zero each time the device receives an ON or OFF command, either remotely (from the gateway (hub) or associated device) or locally from the switch.

Values (size is 2-byte dec):

- default value 0
- 0 - Auto OFF Disabled
- 1 - 32536 = 1 - 32536 seconds - Auto OFF timer enabled for a given number of seconds.

Parameter no. 12 - Turn Load 1 (%) On Automatically with Timer If Load (%) is OFF, you can schedule it to turn ON automatically after a period of time defined in this parameter. The timer is reset to zero each time the device receives an OFF or ON command, either remotely (from the gateway (hub) or associated device) or locally from the switch.

Values (size is 2-byte dec):

- default value 0
- 0 - Auto ON Disabled
- 1 - 32536 = 1 - 32536 seconds - Auto ON timer enabled for a given amount of seconds

Parameter no. 21 - Enable/Disable the Double click function

If the Double click function is enabled, a fast double click on the push-button will set the dimming level to the maximum dimming value.

Values (size is 1-byte dec):

- default value 0
- 0 - double click disabled
- 1 - double click enabled

Parameter no. 30 - Restore on/off status for load after power failure

This parameter determines if on/off status is saved and restored for the load % after power failure.

Values (size is 1-byte dec):

- default value 0

• 0 - Device saves last on/off status and restores it after a power failure.

• 1 - Device does not save on/off status and does not restore it after a power failure, it remains off.

Parameter no. 40 – Watt Power Consumption Reporting Threshold for % Load

Choose by how much the power consumption needs to increase or decrease to be reported. Values correspond to percentages so if 10 is set (by default), the device will report any power consumption changes of 10% or more compared to the last reading.

Values (size is 1-byte dec):

- default value 10
- 0 - Power consumption reporting disabled
- 1 - 100 = 1% - 100% Power consumption reporting enabled.

New value is reported only when Wattage in real time changes by more than the percentage value set in this parameter compared to the previous Wattage reading, starting at 1% (the lowest value possible).

Ⓜ NOTE: The power consumption needs to increase or decrease by at least 2 Watts to be reported, regardless of percentage set in this parameter.

Parameter no. 42 – Watt Power Consumption Reporting Time Threshold for % Load

Set value refers to the time interval with which power consumption in Watts is reported (0 – 32767 seconds). If 300 is entered, energy consumption reports will be sent to the gateway (hub) every 300 seconds (or 5 minutes) if there was a change compared from the last report.

Values (size is 2-byte dec):

- default value 0
- 0 - Power consumption reporting on time interval disabled
- 30 - 32767= 30 – 32767 seconds. Power consumption reporting enabled. Report is sent according to time interval (value) set here.

Ⓜ NOTE: Values from 1 to 29 are ignored by device due to standard recommendation.

Ⓜ NOTE: The report will be send only if there was a change compared to the last report.

Parameter no. 60 – Minimum dimming value

The value set in this parameter determines the minimum dimming value (the lowest value which can be set on the device, when, for example, dimming lights with wall switch or slider in the GUI (Gateway - hub)).

Values (size is 1-byte dec):

- default value 0 = 0% (minimum dimming value)
- 1 - 98 = 1% - 98%, step is 1%. Minimum dimming value is set by entering a value.

Ⓜ NOTE: The minimum level may not be higher than the maximum level! 0% min. dimming value is defined by the Z-Wave multilevel device class.

Parameter no. 61 – Maximum dimming value

The value set in this parameter determines the maximum dimming value (the highest value which can be set on the device, when, for example, dimming lights with wall switch or slider in the GUI (Gateway - hub)).

Values (size is 1-byte dec):

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

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

Parameter no. 65 – Dimming time when key pressed (soft on/off) Choose the time during which the device will move between the min. and max. dimming values by a short press of the push-button I1.

Values (size is 1-byte dec):

- default value 1 = 1 s
- 1 - 127 = 1 seconds- 127 seconds, step is 1 second

Parameter no. 66 – Dimming time when key hold

Choose the time during which the Dimmer will move between the min. and max. dimming values during a continuous press of the push-button I1, by an associated device or through the UI controls (BasicSet, SwitchMultilevelSet).

Values (size is 2-byte dec):

- default value 3 = 3 s
- 1-127 = 1 second – 127 seconds
- 128 – 253 = 1 minute – 126 minutes

Parameter no. 67 – Ignore start level

Choose whether the device should use (or disregard) the start dimming level value. If the device is configured to use the start level, it should start the dimming process from the currently set dimming level. This parameter is used with association group 3.

Values (size is 1-byte dec):

- default value 0
- 0 – use the start level value
- 1 - ignore the start level value

Ⓜ NOTE: Parameter is valid only in Dimmer mode. In Switch mode the parameter has no effect.

Parameter no. 68 – Dimming duration

Choose the time during which the device will transition from the current value to the new target value. This parameter applies to the association group 3.

Values (size is 1-byte dec):

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

Ⓜ NOTE: Parameter is valid only in Dimmer mode. In Switch mode the parameter has no effect.

Parameter no. 70 - Overload safety switch

The function allows for turning off the controlled device in case of exceeding the defined power for more than 5s. Controlled device can be turned back on by input I1 or sending a control frame.

Values (size is 2-byte dec):

- default value 200
- 1 – 200 = 1 W – 200 W
- 0 = function not active

Ⓜ NOTE: This functionality is not an overload safety protection, please check the technical specifications chapter for more details. In case of overload the following message will be send towards the controller:

- COMMAND_CLASS_NOTIFICATION_V5
- The Alarm V1 type field set to 0x00
- Notification Type 0x08 and 0x08 (Overload detected)

Parameter no. 71 – Calibration trigger

Choose when will be the calibration procedure triggered.

Values (size is 1-byte dec):

- default value 0 - calibration done after power cycle if module is excluded
- 1 – calibration done after power cycle regardless of inclusion status
- 2 – force calibration. Calibration will start immediately

NOTE: For additional information check 'MINI DIMMER CALIBRATION' under chapter 11.

Parameter no. 72 – Calibration status (read only)
 Whit this parameter you can check the calibration status.
 Values (size is 1-byte dec):

- default value 2 – calibration failed
- 1 – calibration was successful
- 2 – calibration failed

Parameter no. 73 – Alarm/Notification events
 This parameter defines the module behaviour in case it receives any Alarm/Notification events.

Values (size is 1-byte dec):

- default value 0 – function not active
- 1 – turn ON
- 2 – turn OFF
- 3 – start blinking (output turns 1 s ON, and 1 s OFF)

ⓘ NOTE: When value 3 is selected the default time interval of the blinking is 10 minutes. It can be stopped with a button press or sending a control frame. To adjust the time interval please refer to parameter 74 – Alarm/Notification time interval.

Parameter no. 74 – Alarm/Notification time interval (dependant on parameter 73)

This parameter defines the time interval of the blinking state, once the module receives an alarm/notification event. Minimum step increase is 1 minute.

Values (size is 1-byte dec):

- default value 10 = 10 minutes
- 1 – 125 = 1 -125 minutes

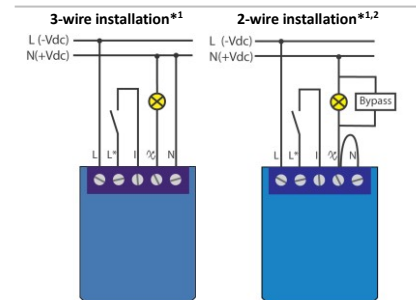
ⓘ NOTE: This parameter does not have any effect if parameter 73 is not set to value 3.

NOTIFICATION COMMAND CLASS

ID	Name	Allowed nodes	Description
1	Lifeline	1	Supports the following command classes: <ul style="list-style-type: none"> • Device Reset Locally: triggered upon request • Meter Report: triggered according to Configuration parameters 40 and 42 • Notification Report: triggered on overload/over temperature • Switch Multilevel Report: triggered upon request or according to Configuration parameters 11 and 12 (note that this command class is active only in dimmer mode) • Switch Binary Report: triggered upon request or according to Configuration parameters 11 and 12 (note that this command class is active only in switch mode)
2	Basic OnOff	16	Supports the following command classes: <ul style="list-style-type: none"> • Basic set: triggered at change of output and reflecting its state
3	Start/Stop level change	16	Supports the following command classes: <ul style="list-style-type: none"> • Start/Stop Level Change: triggered upon holding and releasing the switch connected to I1
4	Multilevel set	16	Supports the following command classes: <ul style="list-style-type: none"> • Switch Multilevel Set: triggered at change of output and reflecting its state

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ELECTRICAL DIAGRAM



*1 24-30 Vdc connection can only be used to add, remove, or reset the device with S button.

*2 In 2-wire installation we recommend using a bypass.

Notes for diagram:

- N** Neutral lead (+Vdc)
- L** Live lead (-Vdc)
- ⊗** Output for electrical device
- I** Input for push button/switch
- S** Service button (used to add or remove the device from the Z-Wave network)

EN WARNING:

The S (Service) button **must NOT** be used when the device is connected to a 110-240 Vac power supply.

NOTE: if in the 2-wire installation, the connected load starts

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TECHNICAL SPECIFICATIONS

Power supply	110 - 240 Vac ±10 % 50 or 60Hz (24-30 Vdc)
Rated load current of AC output	0,85 A / 110 Vac
Output circuit power of AC output (resistive load)	90 W (110 Vac)
Power measurement accuracy (2-wire)	±10 %
Power measurement accuracy (3-wire)	±2 %
Operation temperature/	14 ~ 104 °F
Distance	up to 131 ft indoors (depending on building materials)
Dimensions (WxHxD) (package)	1,50x1,32x0,61 in / (3,39x2,91x1,69 in)
Weight (Brutto with package)	0,85 oz. (1,76 oz.)
Electricity consumption	0,4 W
For installation in boxes	∅ ≥ 60mm or 2M
Switching	MOSFET (Trailing edge)
Z-Wave Repeater	Yes

* EN When overload is detected, the device automatically switches off. If this happens, check if the load matches device specifications and if connections are according to the diagram. To restore the dimmer to regular operation, please power cycle the device.

Supported dimmable loads

	Conventional incandescent and halogen lights	90 W (110 Vac)
	LED bulb, compact fluorescent bulb (CFL), low voltage halogen bulbs with electronic transformer	70 W (110 Vac)
	Low voltage halogen bulbs with conventional Transformer	70 W (110 Vac)

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ORDERING CODE AND FREQUENCIES

ZMNHXY – X, Y values define product version per region. Please check online extended manual or catalogue for the right version.

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NOTE:

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.

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Get a real Qubino Z-Wave bible! How-to install, use cases, illustrations and more. Scan the QR code/follow the link below: <https://qubino.com/products/mini-dimmer>



FCC compliance statement (applies only in the US):

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not in-stalled and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: —Reorient or relocate the receiving antenna. — Increase the separation between the equipment and receiver. —Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. — Consult the dealer or an experienced radio/ TV technician for help.

This user manual is subject to change and improvement without prior notice.

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