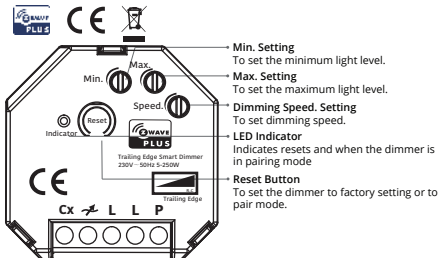


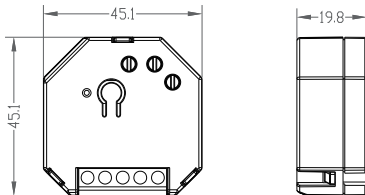
Smart Dimmer Module 250W LED Item NO.CFG-B5L



- The Dimmer controller is a switch multilevel device based on Z-Wave™ and it be easy configuration, operation and can make the traditional LED dimmable lighting to be intelligent control. This Dimmer integrated Z-Wave communication module to connect with Z-Wave gateway.
- The Dimmer controller can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.
- The Dimmer controller is a security enable Z-Wave Plus™ product (S0, S2) that is able to use encrypted Z-Wave Plus messages to communicate to other security enable Z-Wave Plus products. so a security enabled controller is needed for take full advantage of all functionality. It also supports the Over The Air (OTA) feature for the product's firmware upgrade.
- If you want your Dimmer controller to be a security device that use secure/encrypted message to communicate in a Z-Wave network, then a security enabled Z-Wave controller is needed.

1. Specifications

Input voltage	230 Vac, 50Hz
Power (load)	0-250W LED 10-250W Halogen light bulbs
Suitable for	Led-, halogen-, incandescent bulbs
Type dimmer	R,C Phase cut
Working temperature	40 °C
Operation	Push Dimming by Momentary Switch
Dimensions	45.1*45.1*19.8mm
Weight	35.4g



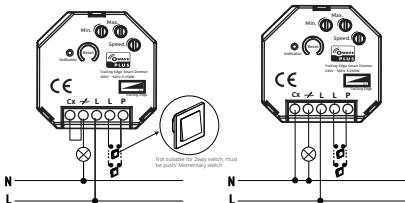
2. Installation

1). Turn off the power

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 the device on during installation.

2). Connect the device exactly according to the diagrams shown below

This dimmer is available for 2wire and 3-wire system. please note if it is 2wire, N and Load port must be connected to make stable dimming.



3). Turn the power back

3. Operation

1) Min./Max./Dimming Speed adjustment

For the SMART dimmer to work optimally or suitable for your preference, you can adjust the brightness at the Min. and Max. level and also the dimming speed with the MIN./MAX./Dimming Speed adjustment.

- **MIN adjustment:** Switch on the lights. When the lights are on, insert a screwdriver in MIN and turn to the left. When the light becomes unsteady, turn slightly back to the right so that the light remains steady.
- **MAX adjustment:** Switch on the lights. When the lights are on, insert a screwdriver in MAX and turn to the right. When the light becomes unsteady, turn slightly back to the left so that the light remains steady.
- **Dimming Speed adjustment:** Insert a screwdriver in Speed, clockwise to increase the dimming speed when you push the momentary switch, vice versa.

4. Z-Wave Setting

1). SmartStart Inclusion

SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code present on the product with a controller providing SmartStart inclusion. No further action is required and the SmartStart product will be added automatically within 10 minutes of being switched on in the network vicinity.

A. Add the dimmer controller DSK into the primary controller SmartStart Provisioning List.

(If your controller does not support SmartStart inclusion, please refer to the manual for your controller for non-SmartStart inclusion.).

B. Power cycle once for dimmer controller.

C. The dimmer controller will send "Explorer Auto inclusion" frame to start SmartStartInclusion.

D. Wait a moment, the dimmer controller should be added to the controller.

Note: The dimmer controller will SmartStart Inclusion when it is removed from a Z-Wave network.

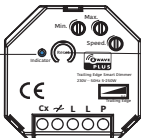
The Dimmer has a DSK string, you can key in first five digit to increment SmartStart process, or you can scan QR code. The QR code can be found on the Dimmer controller or in the box.

Ex. DSK: 65286-19008-32952-20593- 44872-18102-41266-46651

2). (Classic Inclusion) Add to a Z-Wave Network

Step 1. Remove the device from previous Z-Wave network if it has already been added to, otherwise pairing mode will be fail.

Step 3. The indicator will start blinking blue and stay solid for 10s when pairing succeed, timeout 15mins.



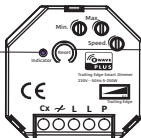
Step 2. Double Press the reset button.

3). Remove from a Z-Wave Network

Method 1. From your Z-Wave hub interface, chose to remove or exclude the device as instructed.

Method 2. Remove from the Device, see below instructions.

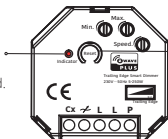
Step 2. The indicator will start blinking purple and stay solid for 10s when remove done, timeout 3mins.



Step 1. Press the reset button for 3 times.

4). Factory Reset

Step 2. When the Indicator stay in Red for 10s, reset finished.



Step 1. Press the reset button for 5s.

Please Note:

This procedure should only be used when the primary controller is inoperable or otherwise missing.

Reset Dimmer controller to factory default settings will sets the Dimmer to not in Z-Wave network state, delete the Association setting and restore the Configuration setting to the default.

The Dimmer controller will start SmartStart Inclusion when it is reset.

INDEX- Z-Wave Information

1. Technical Data

Z-Wave Frequency	Z-Wave Frequency
Wireless Range	up to 100m outside, on average up to 40m inside buildings
SDK	6.81.03
Explorer Frame Support	Yes
Device Type	Light Dimmer Switch
Generic Device Class	GENERIC_TYPE_SWITCH_MULTILEVEL
Specific Device Class	SPECIFIC_TYPE_POWER_SWITCH_MULTILEVEL
Role Type	Always On Slave(AOS)
Rounting	Yes

2. Security and non-Security features

The function of the Dimmer as a security and non-security device is identical. When a node includes into a S0 or S2 Z-Wave network, the node supports S0 or S2 unauthenticated class, S2 authenticated and so do the supported CCs.

Supported Command Classes	Non Secure Not Included	Non Secure Included Secure	Secure
COMMAND_CLASS_ZWAVEPLUS_INFO_V2	Yes	Yes	
COMMAND_CLASS_TRANSPORT_SERVICE_V2	Yes	Yes	
COMMAND_CLASS_SECURITY_2_V1	Yes	Yes	
COMMAND_CLASS_SECURITY_V1	Yes	Yes	
COMMAND_CLASS_SUPERVISION_V1	Yes	Yes	
COMMAND_CLASS_VERSION_V2	Yes		Yes
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2	Yes		Yes
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V1	Yes		Yes
COMMAND_CLASS_ASSOCIATION_V2	Yes		Yes
COMMAND_CLASS_POWERLEVEL_V1	Yes		Yes
COMMAND_CLASS_SWITCH_MULTILEVEL_V2	Yes		Yes
COMMAND_CLASS_CONFIGURATION_V1	Yes		Yes
COMMAND_CLASS_METER_V3	Yes		Yes
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V4	Yes		Yes
COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1	Yes		Yes

3. Note for special commands

1) Z-Wave plus Info Command Report

Parameter	Value
Z-Wave Plus Version	V1
Role Type	ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_ON
Node Type	ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE
Installer Icon Type	ICON_TYPE_GENERIC_LIGHT_DIMMER_SWITCH
User Icon Type	ICON_TYPE_GENERIC_LIGHT_DIMMER_SWITCH

2) Association Group Info Command

Association is different to Inclusion. The Inclusion function of a device "includes" the device into a network, allowing it to communicate with other network devices. The association function "associates" two devices, enabling them to communicate directly without the need for a central controller.

a) Association Group Name Command Report

Association Groups	Group Name	Max Nodes	Description
Group 1	Lifeline	5	The ASSIC of Lifeline: 4C 69 66 65 6C 69 6E 65 1. When press and hold down "Reset" button for 4S to reset the dimmer, send "Device Reset Locally Notification CC" to associated devices of this group to report factory reset information. 2. When load state changes, send "Switch Multilevel Report CC" to associated devices of this group.
Group 2	Basic Set	5	Basic Set: 42 61 73 69 63 20 53 65 74 1. Short press the knob turn on the dimmer Sends Basic Set(0xFF) to associated devices 2. Short press the knob turn off the dimmer Sends Basic Set(0x00) to associated devices
Group 3	Switch Multilevel	5	Switch Multilevel: 53 77 69 74 63 68 20 4D 75 6C 74 69 6C 65 76 65 6C 1. "Anti-Clockwise the knob" Sends Switch Multilevel Set(to decrease the brightness and keep associated devices in sync with this device) to associated devices 2. "Clockwise the knob" Sends Switch Multilevel Set(to increase the brightness and keep associated devices in sync with this device) to associated devices

Association Groups	Group Name	Max Nodes	Description
Group 4	External Button	5	External Button: 45 78 74 65 72 6E 61 6C 20 42 75 74 74 6F 6E 1. External Button hold send Switch Multilevel Start Level Change (Switchover dimmer Up/Down) 2. External Button release send Switch Multilevel Stop Level Change

b) Association Group Info Command Report

Parameter	Team No.	Value
Profile	Group 1	General: Lifeline, Profile MSB=0x00,Profile LSB=0x01
Profile	Group 2	General: Lifeline, Profile MSB=0x20,Profile LSB=0x01
Profile	Group 3	General: Lifeline, Profile MSB=0x20,Profile LSB=0x02
Profile	Group 4	General: Lifeline, Profile MSB=0x20,Profile LSB=0x03

c) Set and unset associations

(Note:All association information will be cleared automatically once the dimmer is excluded from a network.)

The primary controller/Gateway send packets to the dimmer using " Command Class ASSOCIATION"

d) Association Group Command List Command Report

Team No.	Command List Support	
Group 1	COMMAND_CLASS_SWITCH_MULTILEVEL (0x26)	SWITCH_MULTILEVEL_REPORT (0x03)
	COMMAND_CLASS_DEVICE_RESET_LOCALLY (0x5A)	DEVICE_RESET_LOCALLY_NOTIFICATION(0x01)
	COMMAND_CLASS_METER(0x32)	METER_REPORT(0x02)
Group 2	COMMAND_CLASS_BASIC(0x20)	BASIC_SET(0x01)
Group 3	COMMAND_CLASS_SWITCH_MULTILEVEL(0x26)	SWITCH_MULTILEVEL_SET(0x01)
Group 4	COMMAND_CLASS_SWITCH_MULTILEVEL(0x26)	SWITCH_MULTILEVEL_SET(0x01)

4) Basic Command

Basic CC is maps to Multilevel CC

Basic Set = 255 maps to Multilevel Switch Set = 255

Basic Set = 0 maps to Multilevel Switch Set = 0

Basic Set = 1-99 maps to Multilevel Switch Set = 1-99

Basic Get/Report maps to Multilevel Switch Get/Report.

5) Configuration Command Parameters

The Dimmer offers a wide variety of advanced configuration settings. Below parameters can be accessed from main controllers configuration interface.

Parameter	Size	Default Value	Description
1	1	00	State After Power Restored: The state the switch should return to once power is restored after power failure. 0 - Off. 1 - On. 2 - Returns to level before Power Outage
2	1	01	Notification when Load status change: The Dimmer will send notification to associated device (Group Lifeline) when the status of Dimmer load is changed. 0 - The function is disabled. 1 - Send Switch Multilevel Report. 2- Send Switch Multilevel Report only when Load status is not changed by Z-WAVE Command
3	1	05	Default dimming speed, unit is second. Valid value:0-100 0 - Instantly. 1 - Fast. ... 100 - Slow.
4	1	0	Choose MOSFET driving type 0- Trailing Edge 1- Leading Edge
5	1	0	Enable or Disable external switch to pair network. 0 - Disable. 1 - Enable.
6	1	0	Setting dimming way. 0 - Linear dimming. 1 - Logarithmic dimming.
7	1	0	Setting default brightness when turn on the dimmer from off status. Setting of 0 means that the dimmer will use parameter 1. Valid value:0-99
8	1	0	Setting delay time when turn off, unit is second. Valid value:0-60