

# CTDM



## Introduction

CTDM is a miniature micro module, which is remotely controlled and designed to operate in AC mains. In AC mains, it operates with a common neutral lead. Two bell switches enable ON/OFF and dimming control of regular loads. It can be used to control different types of analog/ digital dimmable lights. The device also operates as a repeater within the Z-Wave network to which it is associated and uses the latest Z-Wave plus chips. Typical regular loads for dimmer module are: light sources and other dimmable utility appliances

## Specifications

<b>Power Input</b>	110 - 240VAC, 50/60 Hz
<b>TEC/FET AC dim channel</b>	280W resistive load, 1.1A at 250VAC (Max)
<b>LEC/Trial AC dim channel</b>	160W inductive or resistive load, 0.6A at 250VAC (Max)
<b>PWM LED driver dim channel</b>	Not limited by the device
<b>Power Consumption</b>	< 0.5W no load < 0.9W load

<b>Operating Temperature</b>	-10 to +35 °C
<b>Relative humidity</b>	8 - 80 RH
<b>Dimensions</b>	50 mm x 50 mm x 17 mm
<b>RF frequency</b>	865.22 MHz for IN AS / NZS, US & EU frequency available
<b>Surge Protection</b>	12kv
<b>Typical line of sight range</b>	Up to 30 m indoors Up to 50 m outdoor
<b>Plastic housing</b>	Fire retardant ABS

## Assembling the Dimmer module



### CAUTION

Read manual completely before attempting to install the device!



### DANGER

**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR FLASH** Turn off the power supply mains before installing / servicing the device.

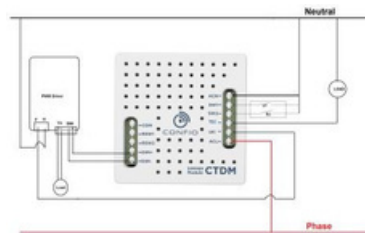
**Failure to follow these instructions will result in death**

- Before installation, make sure that the power supply mains are turned off
- Remove the switch board cover frame and the switch frame to access the switches.
- Select the loads to be connected on particular terminals
- If multiple loads are connected to a single terminal, use appropriate connectors.
- Use only minimum 1mm<sup>2</sup> wires and maximum 1.5mm<sup>2</sup> wires for connections.
- This device requires a neutral lead to operate.

## Circuit Connections

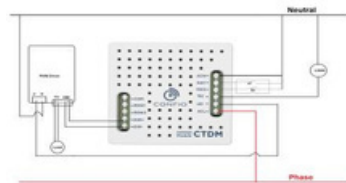
The device can be configured to make it suitable for different brand of LED dimmer. It is achieved using TEC, LEC and PWM channel to make the device compatible with maximum dimmers.

The below wiring diagrams explain the possible combinations that are available.



## Option 1 – Connect to TEC

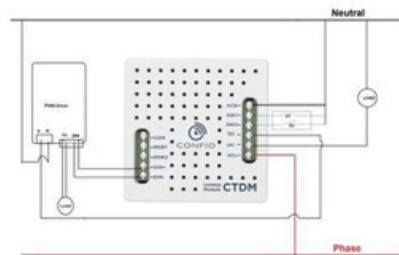
For Connecting TEC output loads you will have to set **Parameter : 15 Range : 0**



## Option 1 – Connect to LEC

For connecting the dimmer load on LEC channel, you will have to set the **Parameter : 15 Range : 1** once it is done connect LED dimmer. Please ensure you use a good quality connector to connect the load as shown below in the diagram.

### Parameter: 15 Range: 1



### NOTES FOR WIRING DIAGRAM

- ACN - Input Neutral terminal
- ACL - Input Phase terminal
- TEC - Trailing Edge dimming channel
- LEC - Leading Edge dimming channel
- SW1,SW2 - Terminal for switches
- DIM+,DIM- - 0 to 10 Signals for analog dimming

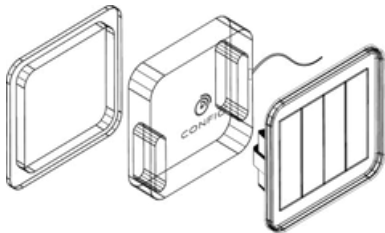


Fig:Installation of dimming module

## Activating the device

### Installing the device

- Make sure that the power supply mains are turned off.
- Connect the device in accordance with the wiring diagram.
- Connect the phase, neutral and the loads on TEC/LEC and PWM.
- Replace existing switches using bell switch, SW1 and SW2.

Complete all the connections and check the pairing before sealing the electrical box.

### Managing the device through Z-Wave network

It is recommended to place the micro module within 3 meters line of sight, as adding mode requires direct communication with the controller.

Move the module near to the primary controller during step, if required.

- This device will support **NWI** (Network wide inclusion) and **NWE** (Network wide Exclusion)
- This device has SMART START feature.

## Inclusion Method

### Method 1:

Press the node ID button (at the back of the module), to start pairing to the gateway.

### Method 2:

Toggle S1 3 times within 4 seconds to start pairing to the gateway. (Sequence: ON-OFF ON-OFF ON-OFF)

### Method 3:

This device supports Smart start, Scan the QR code of the module from the APP to include it to gateway.

## Exclusion Method

### Method 1:

Press the node ID button (at the back of the module), to start exclusion from the gateway.

### Method 2:

Toggle S1 3 times within 4 seconds to start exclusion from the gateway. (Sequence: ON-OFF ON-OFF ON-OFF).

## LED Indication

LED Indication	Status
Red Blinking	Excluded
Green Blinking	Included/Paired
Red and Green	In Pairing Mode

## Resetting the device

For resetting the micro module, press and hold the node ID button behind the module for 5–10 seconds. Then the device will be restored to default.

## Controlling by Position Switches

- SW1 and SW2 are controlled by bell switches and position switches.
- Setting the selected switch to ON position activates the load and vice-versa. If an external controller turns off the load and the switch is ON, turning off the switch have no effect on the load.
- It has no spring that would push the device after releasing manual pressure.
- Setting the selected switch to ON position activates the load and vice - versa.
- If an external controller turns off the load and the switch is ON, turning off the switch have no effect on the load.

## Setting Additional Parameters

- Log on to Z-Wave gateway from app.
- Click **Device Options >> Add Configuration Settings**.
- Enter the parameter number in the Variable box and enter the desired parameter value. For example, to set the device in to LEC mode set parameter [15 1-Byte-Dec 01].
- Click **"SET"**
- Close the dialog box and click Update button.

## Important Instructions

- Wear standard personal protection equipment to give protection to the installer.
- Do not connect non dimmable lights to dimmer module.
- Check the dimming fixture of the light or driver before connecting to the module.
- Do not operate the device in wrong mode.
- Position the antenna far away from metal elements to avoid interference.
- Do not cut or shorten the antenna, as its length is matched to the band in which the system Operates.
- Do not over tighten the terminal block. It can cause serious malfunctioning after installations.

## Additional parameter

<b>Parameter 1</b> <b>Range</b>  <b>Default</b> <b>Description</b>	<b>Power ON status of TEC/LEC load</b> 0: Switch SW1 1: Memory 1: Memory This parameter decides the power ON state (when module is powered ON) of Load connected on TEC or LEC channel. This parameter provides two options either power ON to memory (previous state as it was before power OFF) or present switch position.
<b>Parameter 2</b> <b>Range</b>  <b>Default</b> <b>Description</b>	<b>Power ON status of PMW LED load</b> 0: Switch SW2 1: Memory 1: Memory This parameter decides the power ON state (when module is powered ON) of Load connected on DIM+/- channel. This parameter provides two options either power ON to memory (previous state as it was before power OFF) or present switch position.
<b>Parameter 3</b> <b>Range</b>  <b>Default</b> <b>Description</b>	<b>Device wiring connection</b> 0: Two wires 1: Three wires 1: Three wires This parameter configures wiring connection of the device.
<b>Parameter 4</b> <b>Range</b>  <b>Default</b> <b>Description</b>	<b>Dimming preference for TEC/LEC load</b> 0: Instant 1: Smooth 1: Smooth This parameter switch between the dimming preference smooth dimming or instant dimming for the load connected on TEC/LEC.

<b>Parameter 5</b>	<b>Dimming preference for PMW LEC load</b>
<b>Range</b>	0: Instant 1: Smooth
<b>Default</b>	1: Smooth
<b>Description</b>	This parameter switch between the dimming preference smooth dimming or instant dimming for the load connected on DIM+/- channel.

<b>Parameter 6</b>	<b>Dimming speed for TEC/LEC load</b>
<b>Range</b>	1: Very fast 2: Fast 3: Medium 4: Slow 5: Very slow
<b>Default</b>	3: Medium
<b>Description</b>	This parameter sets the dimming speed of load connected on TEC/LEC channel.

<b>Parameter 7</b>	<b>Dimming speed for PWM load</b>
<b>Range</b>	1: Very fast 2: Fast 3: Medium 4: Slow 5: Very slow
<b>Default</b>	3: Medium
<b>Description</b>	This parameter sets the dimming speed of load connected on PWM channel.

<b>Parameter 8</b>	<b>Potentiometer Status (RSW1 &amp; RSW2)</b>
<b>Range</b>	0: RSW1 & RSW2 Disable 1: RSW1 Enable 2: RSW2 Enable 3: RSW1 & RSW2 Enable
<b>Default</b>	0: RSW1 & RSW2 Disable
<b>Description</b>	This parameter enables or disable potentiometer service for both TEC or LEC and PWM LED loads.

<b>Parameter 9</b>	<b>SW1 Functionality</b>
<b>Range</b>	0: Position switch ON-to-ON and OFF-to-OFF 1: Toggle switch 2: Bell switch
<b>Default</b>	2: Bell switch
<b>Description</b>	This parameter switch between the switch functionality for SW1 i.e. Position switch OR toggle switch or Bell switch for dimming.

<b>Parameter 10</b>	<b>SW2 Functionality</b>
<b>Range</b>	0: Position switch ON-to-ON and OFF-to-OFF 1: Toggle switch 2: Bell switch
<b>Default</b>	2: Bell switch
<b>Description</b>	This parameter switch between the switch functionality for SW2 i.e. Position switch OR toggle switch or Bell switch for dimming.

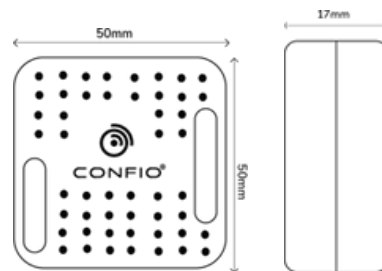
<b>Parameter 11</b>	<b>On board LED enable/disable</b>
<b>Range</b>	0: Disable 1: Enable
<b>Default</b>	1: Enable
<b>Description</b>	This parameter enables or disables on board LEDs.

<b>Parameter 15</b>	<b>Device Mode</b>
<b>Range</b>	0: TEC Mode 1: LEC Mode
<b>Default</b>	1: TEC Mode
<b>Description</b>	This parameter sets the device operating mode, device can be operated either in TEC mode or LEC mode.

## Technical Information

- Controlled by remote control or any other Z-Wave compatible controller.
- Supports scene grouping.
- Executing elements: TRIAC, Leading edge and digital.
- Memory of the last dimming level and ON/OFF.
- Compatible with all existing electrical switch by all manufacturers.
- Controlling the device using Remote Control System.
- The dimmer controller is a multi-channel device.
- Z-Wave remote controllers may not support all the features, check with your device manufacturer for multichannel support.

## Device Dimensions



## Command Class

### Non-Secure

- COMMAND\_CLASS\_ZWAVEPLUS\_INFO\_V2
- COMMAND\_CLASS\_SUPERVISION
- COMMAND\_CLASS\_TRANSPORT\_SERVICE\_V2
- COMMAND\_CLASS\_SECURITY\_2

### Secure

- COMMAND\_CLASS\_SWITCH\_MULTILEVEL
- COMMAND\_CLASS\_ASSOCIATION\_V2
- COMMAND\_CLASS\_MULTI\_CHANNEL\_ASSOCIATION\_V3
- COMMAND\_CLASS\_ASSOCIATION\_GRP\_INFO

- COMMAND\_CLASS\_MULTI\_CHANNEL\_V4
- COMMAND\_CLASS\_MANUFACTURER\_SPECIFIC
- COMMAND\_CLASS\_DEVICE\_RESET\_LOCALLY
- COMMAND\_CLASS\_POWERLEVEL
- COMMAND\_CLASS\_VERSION\_V3
- COMMAND\_CLASS\_CONFIGURATION\_V1
- COMMAND\_CLASS\_FIRMWARE\_UPDATE\_MD\_V4

## Operating the Device

The two loads may be operated using the following options:

- Bell switches connected to SW1 and SW2.
- Z-Wave remote controller with multichannel implementation.
- Bell switches/position switches/toggle switches.
- Any controller compatible with multi-channel implementation.
- Z-Wave compatible Android and IOS apps are available for automation gateway.
- Any controller compatible with multi-channel implementation of Z-Wave.

## Common Issues

**Pairing not working:** Confirm that the remote controller and the dimmer controller are within 3 meter from each other while adding to the gateway. Third party remote controller cannot control all three devices. Most remote controllers do not implement multichannel node support. Hence, they cannot see the dimmer controller as two different loads. Check node ID button is pressed properly, Red and Green LED will appear if the device goes to inclusion/exclusion mode.

## Important Note

For connecting multiple loads on a single circuit, ask the electrician to calculate the total load and confirm that it does not exceed the values as mentioned in the Specifications table.

- Always connect multiple loads to a single circuit via an external terminal block.
- If there are signs of water seeping into the electrical box, turn off the MCB and disconnect the power supply to avoid short circuits.
- Check the space behind the switch for placing the dimmer.
- Turn off the MCB before the installation of dimmer mod ule.
- Use 1 mm<sup>2</sup> lugs for connection to terminals.
- Strictly follow the wiring diagram for connections.
- For any addition or replacement of inoperable switch or electronic device, call Confio authorized Installer only.

## Warranty

Standard warranty of 24 months from the date of supply is applicable for all products.

**The warranty shall not cover:**

- Mechanical damages caused by impact, falling or dropping the device or their object, unauthorized use or not observing the Operation Manual.
- Damages resulting from external causes, for example: flood, storm, fire, lightning, natural disasters.
- Damages resulting from surges in the and/or telecommunication network, improper connection to the grid in a manner inconsistent with the operating manual, or from connecting other devices not recommended by the manufacturer.
- Damages resulting from the use of spurious spare parts or accessories improper for given model, repairing and introducing alterations by unauthorized persons.
- Defects caused by operating inoperable devices or accessories.

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