## AD150 — In-Wall Dimmer Module

General Introduction

FCC ID: FU5AD150

The In-Wall Dimmer Module is designed to wirelessly control on/off and dimming of light bulbs. This device is tiny enough to be installed inside an electrical box behind a wall switch. It also can be connected to the wall switch to allow ordinary manual on/off control. At 220-240V voltage, this module can support up to 300W resistive/ incandescent load, or 200W fluorescent load.

It supports U-Net two-way wireless technology and is fully compatible with any U-Net enabled devices. The U-net protocol allows end devices such as AD150 to pair with a U-Net gateway as central control making it suitable for smart home cloud based platforms such as HomeSys.

Product Overview

Switch Contact
LED indicator
Link Key/ Control button
Wiring Terminals
L LS N
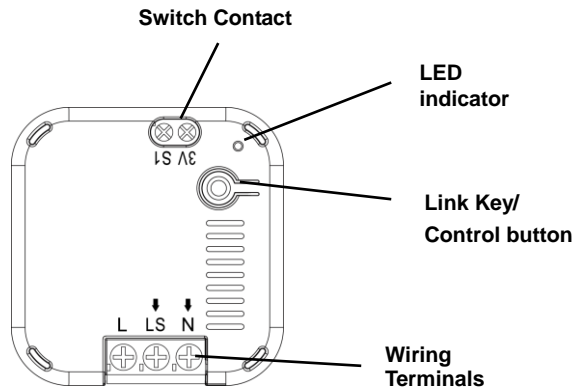
## Safety Precautions before Installation

- Be sure to isolate or switch off mains power before installing or maintenance.
- Avoid installing the unit in stormy or raining weather.
- Do ensure that the power supply circuit is protected by a 16 amp circuit breaker or suitable equivalent fuse.

IMPORTANT
Installation must be performed by skilled technicians who are informed about the standards and technical requirements of the appliance and its proper installation. Note that the In-Wall Dimmer Module is designed to be installed in a wall switch box to operate. Check your local codes as they apply to your situation. If the house wiring is of aluminum, consult with an electrician about proper wiring methods. Before proceeding with the installation, TURN OFF THE POWER TO THE LIGHTING CIRCUIT AT THE CIRCUIT BREAKER OR FUSE BOX TO AVOID ELECTRICAL SHOCK.

Installation

1. Switch off or isolate the AC mains power before installing.
2. The In-Wall Dimmer Module supports both 3-wire (with neutral wire) and 2-wire (without neutral wire) connections. The in-wall module should be connected to AC mains and the load (L1) according to one of the following wiring diagram.

| 3-wire Wiring Diagram	2-wire Wiring Diagram
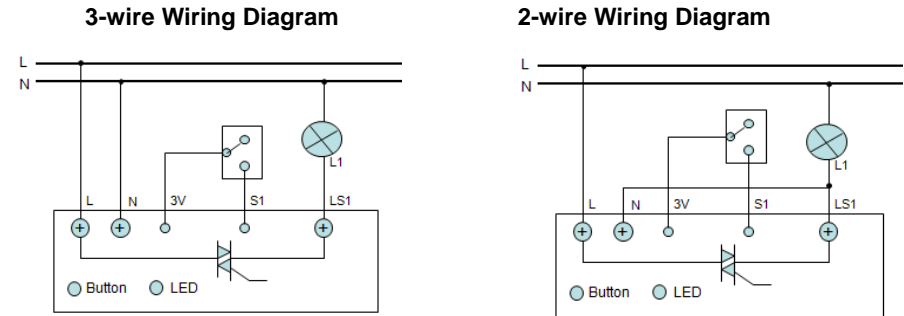
Note: By default switch contact S1 supports Single-Pole-Double-Throw (SPDT) type of binary switch. However, through the setting of Gateway or using the On/Off button, S1 can be configured to support Tact/Push-button switches as well. Refer to the Operation section.
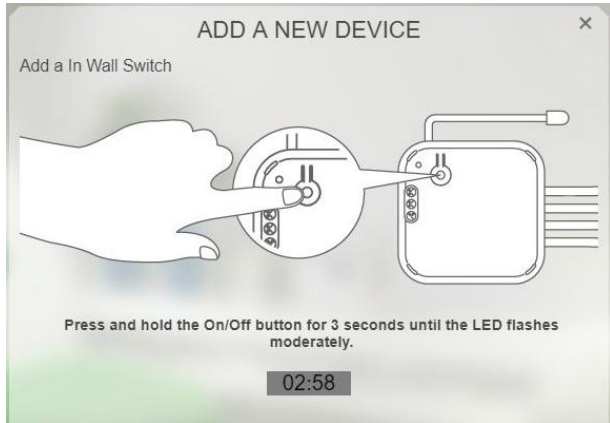
3. Switch the AC mains power back on to power up the unit.

Binding with HomeSys

4. If the Gateway was powered off, wait until the Gateway is fully powered on and ready for binding.
5. Log into the HomeSys account from a web browser.
6. Select "System".
7. Select "Add a New Device", then "In Wall Switch".
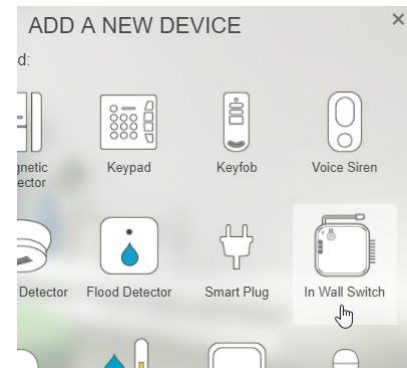
8. The following screen will appear. This means the gateway is entering binding mode.

ADD A NEW DEVICE ×

Add a In Wall Switch

Press and hold the On/Off button for 3 seconds until the LED flashes moderately.

02:58

9. Make sure the LED on the unit is turned off. If it is on, press the Link Key once to turn it off.
10. Press and hold the Link button on the in-wall module for 3 seconds until its LED turn on then release. The LED will start to flash.
11. The screen below will appear in 10 seconds if the process is successful and the LED indicator will stop flashing.

ADD A NEW DEVICE ×

Add a In Wall Switch

Your new device was added successfully.
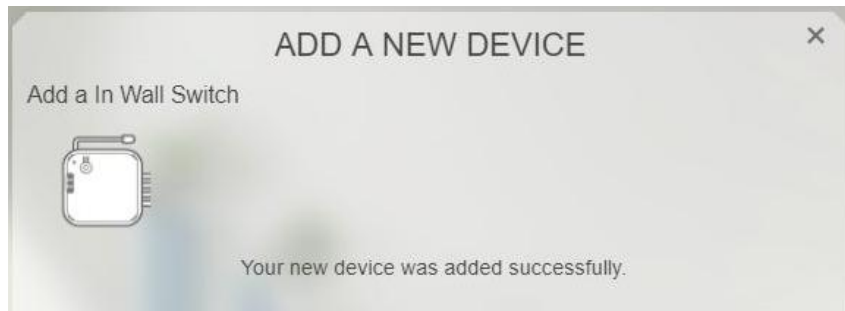
Note: If the LED flashes rapidly 3 times after 30 seconds, this indicates the binding was unsuccessful. Please refer to the Troubleshooting section.

Operation

The In-Wall module can be operated either remotely through the gateway, manually using a connected wall switch, or manually through its own Control Button.

Using the gateway:

User can turn on/off and dim* the light bulb. The LED indicator on the module will also turn on or off accordingly.

Using the external wall switch

For Binary switch :
- User can only turn on/off the light bulb. Diming function is not supported. A message will be sent to the Gateway each time when the module is manually turned on or off.

For Tact/Push button switch :
- User can turn on/off and dim* the light bulb. A message will be sent to the Gateway each time the button is pressed. Refer to the Control Button table below to configure the In-Wall module for this type of switch.

Note: External dimmer type switch is not supported.

Using the Control Button

Refer to the table below:

Action/Status	Description	LED indicator
On/off	Quick press on the Control button to turn on and turn off the light bulb	LED on = Light is on LED off =Light is off
Dimming*	When the light is ON, press and hold the Control button. The light bulb will dim up and dim down repeatedly until the button is released.	LED remains on.
Change switch input from "binary switch mode" to "tact switch mode" or vice versa.	When device is OFF, press "link key" for over 5 seconds but no more than 8 seconds.	LED will flash the first time after 3 seconds and flash again after 5 seconds. If pressed longer than 8 seconds the LED will flash 3 times indicating the change did not take effect.

*Note:
- This applies to dimmable type LED bulb only. Attempt to dim a non-dimmable LED bulb will have unpredictable results and may cause damage to the LED bulb.
-The maximum brightness in 2-wire configuration shall be about 75% of the bulb's rated power.

Whenever the module is powered up again, usually after a power-cut, it will send a message to gateway to report its status.

Troubleshooting

Symptom	Cause of Failure	Recommendation
Device not responding and LED not displaying	The device is not wired to the mains power correctly	Check if wiring is correct, or voltage is too high or too low
LED displaying, but cannot control On/Off status of connected load	The connected load has its own on/off switch	Turn the switch of the connected load to On.
Can press button to control, but cannot control by RF	Binding was not successful	Binding again using the manual binding steps in the next section
Cannot dim to the brightest level when in 3-wire configuration	Max dim level in gateway is set to 2-wire instead of 3-wire settings.	Through the gateway's interface set the Max level to 3-wire settings.
Dimmable LED flashes	Wattage of LED lamp is lower than the minimum required load for this unit.	Use LED lamp with higher wattage than minimum required load, see the Specification section
	LED lamp is not compatible	Try adding the capacitor that is shipped with this module. Connect the capacitor between the L and LS terminal as shown below.

Adding the capacitor

3-wire   **2-wire**
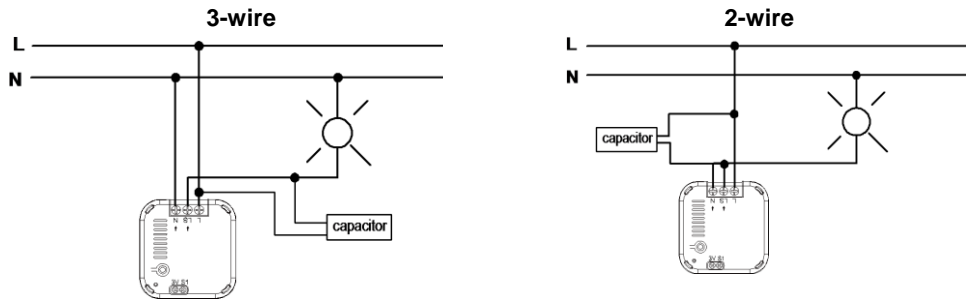
WARNING: To prevent any electrical short circuit, make sure the exposed wires of the capacitor terminals are fully tucked inside the connector of the module.

Reset to Factory Settings

To reset the unit back to factory default state:

1. Make sure the LED on the unit is turned off. If it is on, press the Link Key once to turn it off.
2. Press and hold the Link button on the in-wall module for 3 seconds until its LED turn on then release. The LED will start to flash.
3. Press and hold the Link button again for more than 6 seconds until the LED turns off, then release. The LED will flash every 2 seconds indicating the unit is now reset back to factory default settings.

Initial Power Up and Auto Binding

Once reset back to factory settings and first powered up again, the unit will automatically enter binding mode in an attempt to pair with any U-net compatible Gateway. This is called Auto-binding.

If a gateway is not present and the 30 seconds period expires, the LED indicator on the unit will flash slowly every 2 seconds, implying that the unit has never paired with any device.

Auto-binding can be restarted again by disconnecting and reconnecting power to the unit.

Note: During the Auto-binding period of 30 seconds, the Control button is dedicated for binding use only. Pressing the Control button will not turn on/off the connected light bulb.

Specifications

Model name		AD150-1	AD150-2
Frequency Range		868.30MHz	923.00MHz
Power Input		220-240V,50Hz	120V/60Hz or 230V/50Hz
Working Temperature		0°C - 40°C	
Switch Type supported		Binary switch / Tact (push button) switch	
Lamp type		Incandescent lamp, LED, CCFL (Fluorescent tubes supported)	
Supported Load	Incandescent	3-wire: 6W~300W 2-wire: 8.3W~300W	3-wire: 6W~150W/300W 2-wire: 8.3W~150W/300W
	Dimmable LED	3-wire: 6W~120W 2-wire: 8.3W~120W	3-wire: 6W~120W 2-wire: 8.3W~120W
	Non-Dimmable LED (On/Off function only, Dimming not supported)	3-wire: 6W~120W 2-Wire: Not suggestion, see note below*	3-wire: 6W~120W 2-Wire:Not suggestion, see note below*

*Note:
a. Results vary depending on manufacturer and model with most displaying unstable light output.
b. Adding a bypass component at lamp side will stabilize the operation.

Specifications are subject to change without notice

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EVERSPRING

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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.

Federal Communication Commission Interference Statement

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 installed 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 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 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.
FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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