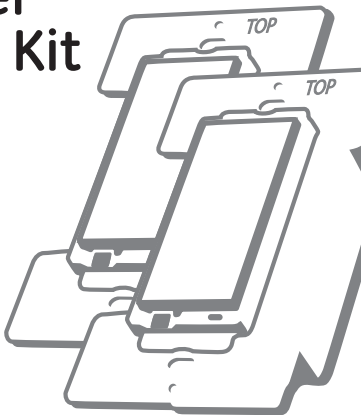




45613

Wireless Lighting Control

# 3-way Dimmer Switch Kit

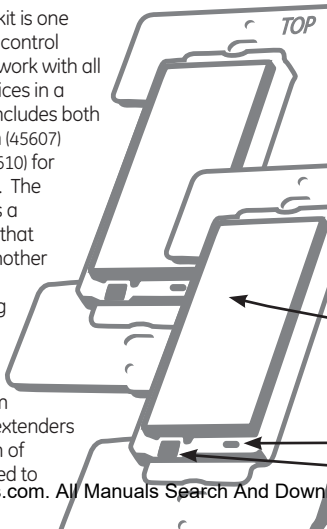


Z-Wave® Certified

## Introduction:

Thank you for your purchase of a GE Z-Wave® enabled control device. Z-Wave technology is designed to automate lighting/home control and provide easy remote operation of all your Z-wave enabled devices. The GE Z-Wave product family includes a variety of devices to control lighting in your home. Control one room or your entire house, and you can do it all now or start with one room and add more over time.

The 3-way dimmer switch kit is one component of a Z-Wave® control system and is designed to work with all other Z-Wave enabled devices in a home control network. It includes both the primary dimmer switch (45607) and an auxiliary switch (45610) for the second switch location. The primary switch also acts as a wireless repeater to insure that commands intended for another device in the network are received, thereby extending the range of the wireless controller. Z-Wave devices of other types and brands can be added to the system and will also act as range extenders if they support this function of repeating the signal received to other nodes in the system.



The auxiliary switch is not Z-Wave enabled and does not directly control electrical loads. It must be used with a compatible Z-Wave enabled, 3-wire switch in three-way installations where a light is controlled from 2 locations such as the top and bottom of a staircase. This switch communicates with the Z-Wave enabled switch, providing manual On/Off/Dim control of the connected lighting (through the Z-Wave enabled switch) and synchronization of the lighting status (On/Off/Dim level) between the two switches.

### **⚠ CAUTION**

This device is intended for installation in accordance with the National Electric Code and local regulations in the United States, or the Canadian Electrical Code and local regulations in Canada. If you are unsure or uncomfortable about performing this installation consult a qualified electrician.

This dimmer is designed for use only with permanently installed incandescent lighting fixtures. Do not use it to control fluorescent lighting, transformer supplied lighting/appliances, motorized appliances or receptacles. The incandescent lighting controlled by this dimmer must not exceed a total of 500 watts.

**There are no user serviceable parts in this unit.**

Dimmer switch

LED light

Air gap switch

# WARNING

**RISK OF FIRE**

**RISK OF ELECTRICAL SHOCK**

**RISK OF BURNS**

## **Controlling Appliances:**

Exercise extreme caution when using Z-Wave devices to control appliances. Operation of the Z-Wave device may be in a different room than the controlled appliance, also an unintentional activation may occur if the wrong button on the remote is pressed. Z-Wave devices may automatically be powered on due to timed event programming. Depending upon the appliance, these unattended or unintentional operations could possibly result in a hazardous condition. For these reasons, we recommend the following:

1. Assign Z-Wave controlled appliances to device numbers 10 – 18 on the GE Z-Wave remote. The likelihood of unintentionally turning on the appliance will be reduced significantly because the "Shift" button will need to be pressed before pressing device numbers 10-18.
2. Z-Wave devices controlling appliances should be removed from "All" control setting. Instructions on how to do this are included in the manual for your GE Z-Wave remote.
3. Do Not include Z-Wave devices in Groups or Scenes if they control appliances.
4. Do Not use Z-Wave devices to control electric heaters or any other appliances which may present a hazardous condition due to unattended or unintentional or automatic power on control.
5. Double check programs for accuracy before using them.

## **Wireless Range**

This device complies with the Z-Wave standard of open-air, line of sight transmission distances of 65 feet. Actual performance in a home depends on the number of walls between the remote controller and the destination device, the type of construction and the number of Z-Wave enabled devices installed in the control network.

## **GE Z-Wave network**

Every Z-Wave enabled device acts as a signal repeater and multiple devices result in more possible transmission routes which helps eliminate "RF dead-spots".

## **Things to consider regarding RF range:**

- Each wall or obstacle (i.e.: refrigerator, big screen TV, etc.) between the remote or a Z-Wave device and the destination device will reduce the maximum range of 100 feet by approximately 25-30%.
- Brick, tile or concrete walls block more of the RF signal than walls made of wooden studs and plasterboard (drywall).
- Wall mounted Z-Wave devices installed in metal junction boxes will suffer a significant loss of range (approximately 20%) since the metal box blocks a large part of the RF signal.

## Effects of Home Construction on Wireless Range Between Z-Wave Enabled Devices.

**Note:** The distances shown in the table below are typical examples. Actual performance in your home will vary.

**From the Remote (or repeating Z-Wave module) to destination device:**

|                              |     | Type of Construction |               |                         |               |
|------------------------------|-----|----------------------|---------------|-------------------------|---------------|
|                              |     | Wood Frame w/Drywall |               | Brick, Tile or Concrete |               |
|                              |     | Plastic J-Boxes*     | Metal J-Boxes | Plastic J-Boxes*        | Metal J-Boxes |
| Number of Walls or Obstacles | 0** | 100'                 | 80'           | 100'                    | 80'           |
|                              | 1   | 70'                  | 56'           | 60'                     | 48'           |
|                              | 2   | 49'                  | 39'           | 36'                     | 29'           |
|                              | 3   | 34'                  | 27'           | 21'                     | 17'           |

\* For Plug-in Modules or In-Wall Devices Installed in Plastic Junction Boxes

\*\* From [www.Somaterials.com](http://www.Somaterials.com). All Manuals Search And Download

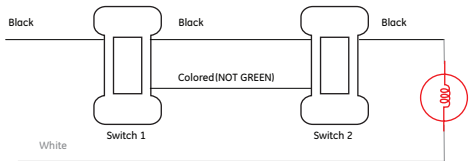
**Please Note:** Z-Wave home control networks are designed to work properly alongside 802.11 wireless computer networks, Bluetooth® and other 2.4GHz or 5.8GHz devices. Some baby cams, wireless video devices and older cordless phones using the 900MHz frequency range may cause interference and limit Z-Wave functionality. Many 900MHz products have a switch to select channel "A" or "B". You may find that one of these channels will cause less interference than the other.

### **IMPORTANT NOTE ABOUT 3-WAY CIRCUITS**

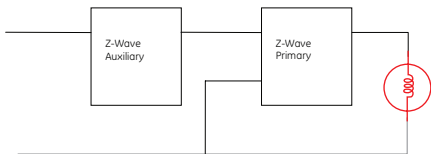
The term "3-way circuit" refers to a circuit with two switches and one load (light) like you find at the top and bottom of a stairway. There are many ways to physically wire a 3-way circuit and it is important to understand how the circuit you wish to upgrade to Z-Wave control is wired. Below is a description of a typical 3-way circuit.

One of the ways to wire a two-switch/one-load circuit is to route the incoming power through the first switch, then to the second switch and then to the load. Although very common and by no means a standard, it is the easiest to convert to Z-Wave control. With this type of circuit, Switch 1 is replaced by the Z-Wave auxiliary switch and Switch 2 is replaced with the primary Z-Wave dimmer switch. The auxiliary switch does not actually control the power; instead, it sends a momentary voltage signal through the traveler wire to the primary switch which in turn, controls the power to the load. In the configuration shown, if the two Z-Wave switches are reversed, Z-Wave Dimmer Switch will not be able to control the load without additional wiring.

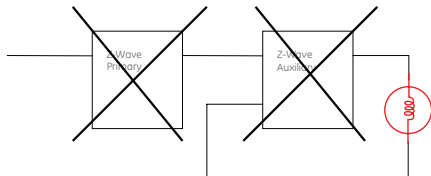
## Typical 3-way circuit



## Correct switch position



## Incorrect switch position



Refer to the wiring diagram for wiring details



## IMPORTANT NOTE ABOUT 3-WAY CIRCUITS CONT.

The yellow wire from the 45607 must only be connected to the yellow wire of the 45610 via the traveler wire. The dimmer switch will fail if the yellow wire is connected to Line (Hot), Neutral or Ground. It must be insulated properly if it is not used.

Please consult an electrician if you have trouble identifying the type of wiring circuit you wish to convert or if you do not feel confident in your ability to convert the circuit to Z-Wave control.

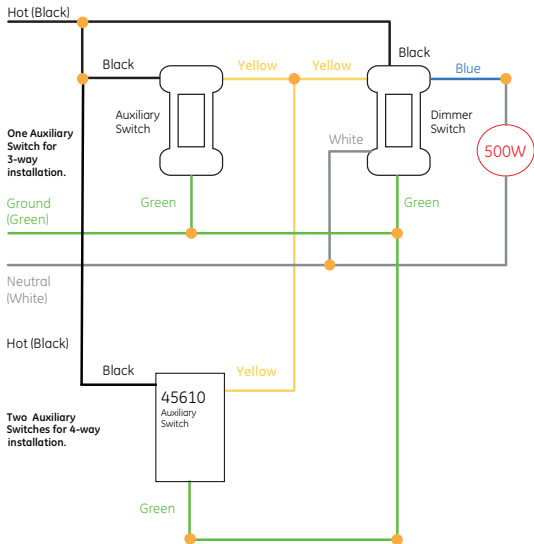
## INSTALLATION

This dimmer switch is designed for use with permanently installed incandescent lighting only and may be used in new installations or to replace an existing wall switch. A wall plate is not included. You may be able to re-use your existing wall plate if you are replacing a standard decorator style switch or dimmer. If this is a new installation or your existing wall plate can not be used, we recommend the use of a mid-sized, decorator style wall plate. These are available at most home centers or hardware stores.

It can be used by itself or in three-way installations where a light is controlled from 2 locations such as the top and bottom of a staircase. It is also compatible with four-way installations (three switches & one light) if a second auxiliary switch is used.

**Please note:** The 45610 Auxiliary Switch must be used with the 45607 Dimmer Switch in three-way installations. Two Auxiliary switches must be used in four-way installations.

## Wiring Diagram



Up to 2 Auxiliary switches may be used to create a 4-way installation

## Single, Dual and Triple Gang Boxes

The metal plate surrounding the switch assembly is a heat sink. The maximum load rating (500W) is provided when installed in a single gang box with the full heat sink. Multiple 45607 Dimmer Switches may be installed in dual or triple gang boxes and, if necessary, one or both sides of the heat sink may be removed by bending it at the score lines. There is a corresponding reduction in the switch's load rating when ganged. DO NOT exceed the following loads:

| Dimmer Rating | Number of Dimmers                  | Heat Sink          |
|---------------|------------------------------------|--------------------|
| 500W          | One Dimmer in a Single Gang Box    | Full               |
| 400W          | Two Dimmers in a Double Gang Box   | One side removed   |
| 300W          | Three Dimmers in a Triple Gang Box | Both sides removed |

White  
(Neutral)

Traveler  
(Colored not green)

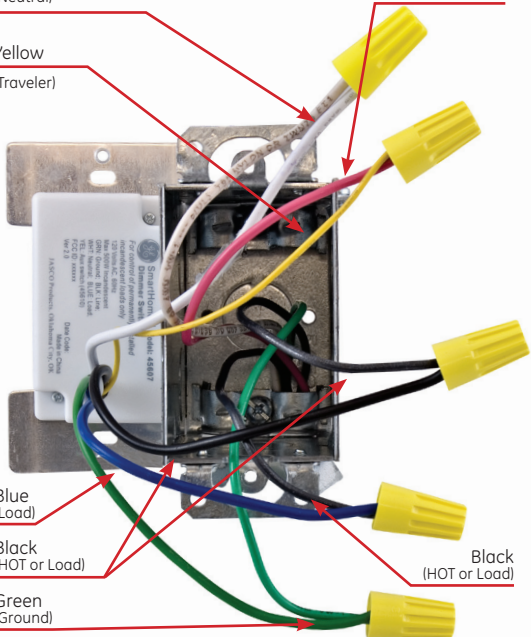
Yellow  
(Traveler)

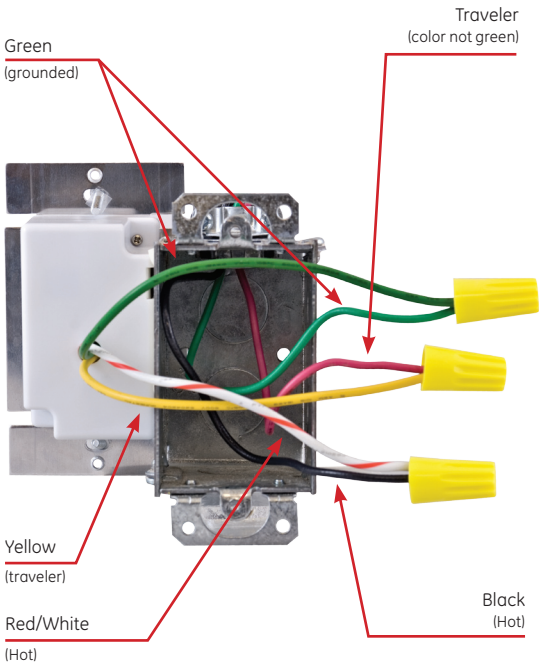
Blue  
(Load)

Black  
(HOT or Load)

Green  
(Ground)

Black  
(HOT or Load)





# WARNING

## **SHOCK HAZARD!**

Turn OFF the power to the branch circuit at the circuit breaker in your electrical service panel. Ensure power is OFF before you install this device. All wiring connections must be made with the POWER OFF to avoid personal injury and/or damage to the switch.

1. Shut off power to the circuit at fuse box or circuit breaker.
2. Remove wall plate. **!Warning: Verify power is OFF to switch before continuing.**
3. Remove the switch mounting screws.
4. Carefully remove the switch from the switch box. DO NOT disconnect the wires.
5. Identify the wiring in the box and decide if this will be the location for the Auxiliary Switch or the Dimmer Switch.
6. Mark the wiring so it can be identified properly later.
7. Disconnect the wiring and remove the switch.
8. Install either the Auxiliary or Dimmer Switch as shown in the wiring diagram.
9. Insert the new switch into the switch box being careful not to pinch or crush wires.
10. Repeat Steps 2 through 9 for the second switch.
11. Reapply power to the circuit at fuse box or circuit breaker and test the system.

## **Observe Important Wiring Information**

Always follow the recommended wire strip lengths and wiring combinations when making wiring connections. **Important:** The wire connectors included with this dimmer are intended to only be used with copper wire. Consult a qualified electrician

## Instructions:

1. Strip insulation 3/8" for 12 or 14 AWG wire. Strip insulation 7/16" for 16 or 18 AWG wire.
2. Hold stripped ends together in parallel and align any frayed strands (do not twist wires).
3. Push wires firmly into connector. Twist connector clockwise with fingers until tight. Pull wires to check for tightness.

## Wire Connector / Combination Chart

One #14 w/one-to-four #16 or #18

One #12 w/one-to-three #14 or #16 or #18

Two #14 w/one-to-three #16 or #18

Two #12 w/one or two #14 or #16 or #18

You should now be able to use the rocker to manually turn On/Off/Brighten the connected lighting.

Use your primary controller to include the dimmer switch in the home control network after the dimmer switch is wired as shown in the above diagram. It can then be added to groups and/or lighting scenes and managed remotely to control the On/Off status and brightness level of the connected incandescent lighting.

## Air Gap Switch

The 45607 has an air gap switch on the lower left side (see diagram for location) to completely disconnect power to the load. Pull the air gap switch OUT to disconnect the power and push it all the way back in for normal operation. The air gap switch must be all the way in for the dimmer to function and control the lighting.

## Key Features

- Controls one light from two locations
- Remote On/Off/Brightness control via the Z-Wave controller/network
- Manual On/Off/Brightness control with the front panel rocker
- LED indicates primary switch location in a dark room
- Adjustable Dim rates

## BASIC OPERATION

### Remote Control

GE Z-Wave remotes provide control of an Individual device, Groups of devices and Scenes. Other brands of Z-Wave Certified remotes may not offer as much flexibility in how you can set up your lighting control network. Please refer to your remote control's instructions for details on its capabilities and instructions for adding and controlling devices.

### Manual Control

Both switches allow the user to turn **ON/OFF** and control the brightness level of the connected incandescent lighting.

- To turn the connected lighting ON: Tap the top of the rocker.
- To turn the connected lighting OFF: Tap the bottom of the rocker.
- To brighten the connected lighting: Press and hold the top of the rocker; release when desired level is achieved
- To dim the connected lighting: Press and hold the bottom of the rocker; release when desired level is achieved. Please note: pressing and holding the rocker until the light intensity



must still tap (press & release) the bottom of the rocker to turn the power **OFF**.

- When **OFF**, pressing and holding the bottom of the rocker will cause the lighting to go to the minimum dim level.

**Program your light Switch** (The model 45607 primary switch must be used to include or exclude the dimmer switch from the Z-Wave home control network.)

- Refer to the instructions for your primary controller to access the network setup function and include or exclude devices.
- When prompted by your primary controller, tap the top or bottom of the rocker.
- The primary controller should indicate that the action was successful. If the controller indicates the action was unsuccessful, please repeat the procedure.
- Once the dimmer switch is part of the network, the same basic procedure is used to add the dimmer switch to groups & scenes or change advanced functions. Refer to the primary controller's instructions for details.

**Please Note:** After a power failure, the 45607 dimmer switch returns to its last used On/Off/Dim state.

LED Indicator – Primary Switch Only

- The LED will be lit when the connected lighting is **OFF**.
- This is the factory default setting and can be changed if your primary controller supports the node configuration function (see Advanced Operation below).

## ADVANCED OPERATION

The following Advanced Operation parameters require that you have an advanced controller like the 45601 Advanced remote. Advanced remotes from other manufacturers may also be able to change these settings; however, basic remotes do not have this capability.

### All On/All Off

Depending upon your primary controller, the 45607 dimmer switch can be set to respond to **ALL ON** and **ALL OFF** commands in up to four different ways. Some controllers may not be able to change the response from its default setting. Please refer to your controller's instructions for information on whether or not it supports the configuration function and if so, how to change this setting.

### The four possible responses are:

1. It will respond to **ALL ON** and the **ALL OFF** command (default).
2. It will not respond to **ALL ON** or **ALL OFF** commands.
3. It will respond to the **ALL OFF** command but will not respond to the **ALL ON** command.
4. It will respond to the **ALL ON** command but will not respond to the **ALL OFF** command.

### LED Light

When shipped from the factory, the LED on the 45607 is set to turn **ON** when the connected light is turned **OFF**. This allows the LED to indicate the switch's location in a dark room. To make the LED turn ON when the light is turned ON, change parameter 3's value to "1".

- Parameter No: 3
- Length: 1 Byte
- Valid Values = 0 or 1 (default 0)

### **Invert Switch**

If the dimmer switch is accidentally installed upside down with “On” at the bottom and “Off” at the top, the default On/Off rocker settings can be reversed by changing parameter 4’s value to “1”.

- Parameter No: 4
- Length: 1 Byte
- Valid Values = 0 or 1 (default 0)

### **Dim Rate Adjustments**

Both the number of steps (or levels) that the dimmer will change and the timing of the steps can be modified to suit personal preferences. The timing of the steps can be adjusted in 10 millisecond intervals. As an example, the default setting for parameter 8 is “3”. This means that the lighting level will change every 30 milliseconds when the Dim Command is received. A value of 255 would mean that the level would change every 2.55 seconds. Combined, the two parameters allow dim rate adjustments from 10 milliseconds to 4.2 minutes to go from maximum-to-minimum or minimum-to-maximum brightness levels.

#### **1. When Receiving a Z-Wave Dim Command**

- Parameter 7 (number of steps or levels)
- Parameter 8 (timing of the steps)
- Length: 1 Byte

- Valid Values:

Parameter 7 (default = 1) Valid Values: 1-99

Parameter 8 (default = 3) Valid Values: 1-255

## 2. Manual Control Dimming (pressing the Dimmer's rocker)

- Parameter 9 (number of steps or levels)

- Parameter 10 (timing of the steps)

- Length: 1 Byte

- Valid Values:

Parameter 9 (default = 1) Valid Values: 1-99

Parameter 10 (default = 3) Valid Values: 1-255

## 3. When Receiving an All-On or All-Off Command

- Parameter 11 (number of steps or levels)

- Parameter 12 (timing of the steps)

- Length: 1 Byte

- Valid Values:

Parameter 11 (default = 1) Valid Values: 1-99

Parameter 12 (default = 3) Valid Values: 1-255

## Ignore Start Level When Receiving Dim Commands

Please note: Every "Dim" command includes a start level embedded in it.

The 45607 can be set to ignore the start level that is part of the dim command. Setting parameter 5 to a value of 0 will cause the 45607 to dim or brighten from the start level embedded in the command.

- Parameter No: 5

- Length: 1 Byte

## **Restoring Factory Defaults**

All Configuration Parameters can all be restored to their factory default settings by using your master controller to reset the device.

## **Interoperability with Z-Wave™ Devices**

A Z-Wave™ network can integrate devices of various classes, and these devices can be made by different manufacturers. Although every Z-Wave certified product is designed to work with all other Z-Wave certified products, your controller must include the appropriate device classifications in order to control non-lighting Z-wave devices. As an example, the GE 45600 basic remote is designed only for controlling Z-Wave devices using the lighting control classification. The GE 45601 deluxe remote with LCD readout can control other Z-Wave certified devices like thermostats as well as lighting.

## **WARRANTY**

JASCO Products warrants this product to be free from manufacturing defects for a period of two years from the original date of consumer purchase. This warranty is limited to the repair or replacement of this product only and does not extend to consequential or incidental damage to other products that may be used with this product. This warranty is in lieu of all other warranties, expressed or implied. Some states do not allow limitations on how long an implied warranty lasts or permit the exclusion or limitation of incidental or consequential damage, so the above limitations may not apply to you. This warranty gives you specific rights, and you may also have other rights which vary from state to state. Please contact Customer Service at 800-654-8483 (option 4) between 7:30AM – 5:00PM CST or via our website ([www.jascoproducts.com](http://www.jascoproducts.com)) if the unit should prove defective within the warranty period or visit [easyzwave.com](http://easyzwave.com)

JASCO Products Company  
Building B

## FCC

### U2Z45606-7

The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:

The 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 uses, generates and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. 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

#### **Operation is subject to the following two conditions:**

- This device may not cause interference
- This device must accept any interference, including interference that may cause undesired operation of the device.

**Important Note:** To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

#### **Compliance with IC Rules and Regulations**

IC: 6924A-45606A7

Jasco Products Company

Model: 45607

This Class B digital device complies with Canadian ICES-003.

## **SPECIFICATIONS**

Power: 120 VAC, 60 Hz.

Signal (Frequency): 908.42 MHz.

Minimum Load: 40W, incandescent lamps only.

Maximum Load: 500W, incandescent lamps only.

Range: Up to 65 feet line of sight between the Wireless Controller and the closest Z-Wave receiver module.

Operating Temperature Range: 32-104° F (0-40° C)

For indoor use only.

Specifications subject to change without notice due to continuing product improvement

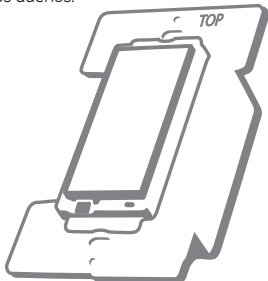
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