ZoneSwitch V2
Damper Control System

Operation &
Installation Instructions

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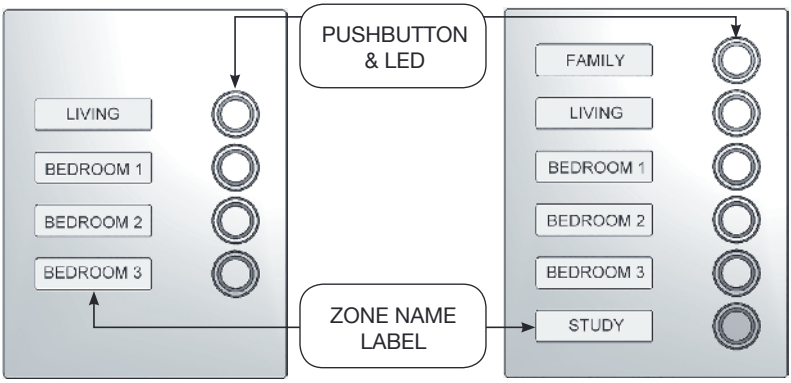
Liability

Please read the instructions carefully before installing the Zonemaster Zone Switch V2 control system.

Polyaire Pty Ltd does not accept any responsibility for loss or damage that may occur as a result of the incorrect installation of the Zone Switch V2 control system.

OPERATION INSTRUCTIONS

1) **Wall Controller Layout (Touchpad)**



2) **Turn Zone ON/OFF**

a) Press the pushbutton once to turn the zone ON. The LED will light up indicating the zone is On (Zone Opened). The LED will stay on until the zone is turned OFF.

b) Press the pushbutton again to turn the zone OFF. The LED will turn OFF indicating the zone is OFF (Zone Closed).

Note: If power fails, zones will automatically resume their original position once power is back.

3) **Turn Touchpad Off**

Pressing and holding the buttons of zone 3 and zone 4 (The two buttons in the vertical centre of the touchpad) together for more than two seconds will turn off all touchpad LEDs, but all zones will maintain their current position. Pressing any zone button will activate the touchpad. The zone being pressed will turn on and all other zones will remain unchanged.

In the seasons when the air conditioning system is not in use, owners may turn off all zones. But if the spill function is enabled, there will be always one zone open and its LED on the touchpad will flash to indicate the active spill function. This may be annoying if AC is not in use. Turning off the touchpad completely will have all LEDs on the touchpad off. All zones will maintain their status.

INSTALLATION INSTRUCTIONS

1) Application

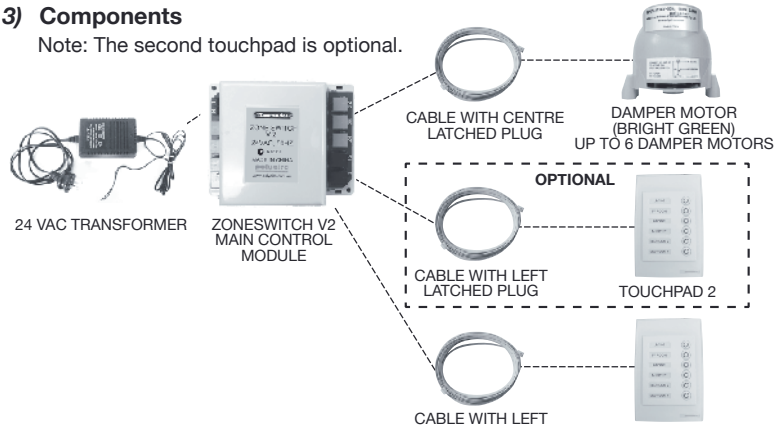
The Zonemaster Zone Switch V2 control system is a simple On/Off control system engineered to manage the air flow from the Air Conditioning (AC) unit to different outlets. This system is well suited to all ducted reverse cycle and ducted heating systems in light commercial, residential and apartment applications.

2) Features

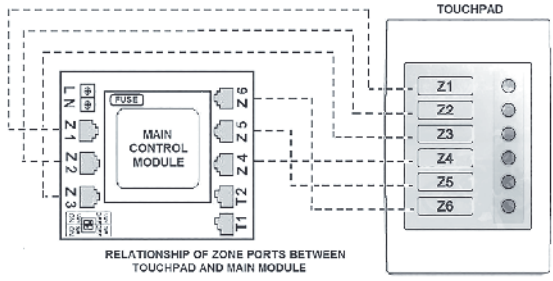
- Control up to 6 individual zones.
- Have up to two touchpads in one system
- Selectable spill function and spill zone
- All dampers are directly connected to the main control module in a "star" architecture.
- LED indicators to show the ON/OFF status of the zones.
- Touchpad can be turned off while not in use
- Back LED light to show port numbers on the mainboard in dark for easy connection
- Personalised zone labelling using stickers.
- All zones automatically resume their original on/off state once power up after power outage.
- 24 volts for easy and safe installation and maintenance.

3) Components

Note: The second touchpad is optional.



4) Wiring Schematic

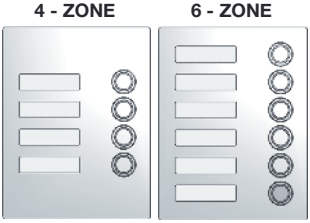


RELATIONSHIP OF ZONE PORTS BETWEEN TOUCHPAD AND MAIN MODULE

NOTE: The zones on the touchpad are marked as Z1, Z2, Z3, Z4, Z5 and Z6 from the top of the touchpad.

5) Zoning areas and selecting 4-zone or 6-zone label

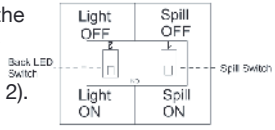
Air conditioned areas can be zoned according to their functions and daily usage such as Family room, Lounge, Library, etc. These zone names are chosen as desired along with a 4-zone or 6-zone label. For 1 to 4 zones it is recommended to use the 4-zone label and for 5-6 zones it is recommended to use the 6-zone label. The 4-zone and 6-zone labels (provided) are shown in the picture.



6) Main Module Preparation

Mount the main control module by screwing the box to a roof frame or Polyaire Diffusion Fitting (PDF). It is recommended to mount the main control module equidistant from all the damper motors.

There is a LED on the mainboard to illuminate the zone port numbers on the board in dark and to indicate power supply when the power is on. The LED is controlled by the light switch (switch 2). Turning it to ON position will turn the LED on. Tuning it to OFF position will turn off the led.



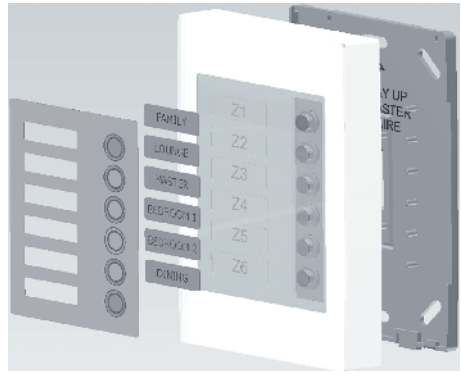
Back LED & Spill switch on the main module

The system has a Spill Function which can be enabled by a dip switch (switch 1) on the main control module. Please turn the switch to ON position if the Spill Function is to be used. The factory default setting for this switch is OFF, which means there is no spill function in the system and a permanent open zone is required to prevent pressure build up when all motorised zones are closed from the touchpad while the AC unit is running. See section 9) for details of setting spill function.

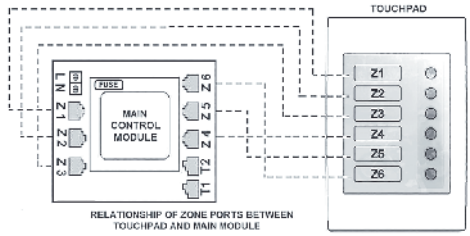
7) Touchpad Preparation

a) *Exploded Diagram*

The picture to the right shows an exploded view of the touchpad assembly.



b) *Pushbutton (on Touchpad) and Zone output ports (on Main module)*



Pushbutton Z1 on the touchpad controls zone output Z1 on the main control module and the LED light for the button on the touchpad indicates the zone status. The picture shows the relevant pushbutton and zone output port on the touchpad and the main control module respectively.

c) *Applying Zone Names to Zones*

It is essential to apply correct names against the zones to make sure the end user is fully aware of the location of each zone. The zone names are printed on a sticker which is to be peeled off as desired and applied in the relevant zone name recess on the touchpad first. There are 31 preset names which can be used or personal names can be written on the 2 blank stickers provided. **After applying the zone name label on the touchpad, peel off the transparent protective covering film from the top of the label.**

BEDROOMS	FAMILY	OFFICE
BEDROOM 1	GAME	PLAYROOM
BEDROOM 2	GIRL'S	RUMPUS
BEDROOM 3	GUEST RM	STUDY
BEDROOM 4	KID'S	TV ROOM
BOY'S	KITCHEN	UPSTAIRS
COMPUTER	BEDROOM 5	THEATRE
DAY	LIVING	ACTIVITY
DINING	LOUNGE	GARAGE
DNSTAIRS	MASTER	
ENSUITE	NIGHT	

IMPORTANT NOTE: If a 4-zone system is used, the zone names are to be stuck on Z2, Z3, Z4 and Z5 recess respectively. For a 6 zone system, the zone names are to be stuck on the Z1, Z2, Z3, Z4, Z5 and Z6 recess respectively. For a system with less than 4 or 6 zones, the blank stickers can be stuck on the relevant zone recesses that are not being used.

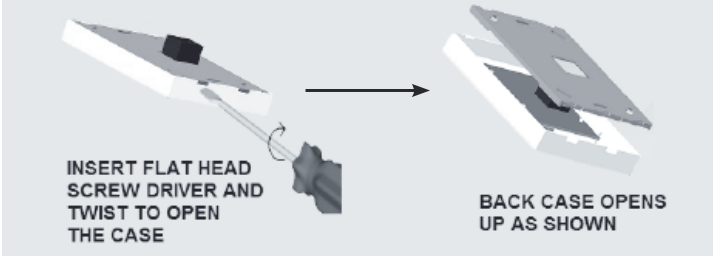
d) Applying 4-Zone or 6-Zone Label

The 4-zone or 6-zone label is applied after the zone names have been applied on the touchpad. The 4-zone or 6-zone label is peeled off from the sticker and then applied on to the touchpad. Ensure the label has been applied within the recess provided. After the label is applied on the touchpad, peel off the transparent protective covering film from the top of the label.

NOTE: For a 4 zone system, use Z2, Z3, Z4 and Z5 on the touchpad and connect the damper motors to the relevant ports Z2, Z3, Z4 and Z5 on the main module.

8) Installing the Touchpad

a) Insert a flat head screw driver into the two gaps at the bottom of the casing and turn the screwdriver blade just enough to open the cover as shown in the figure below and then remove the back cover by sliding it out.



b) Position the back cover on the wall (about 1.5m high from the floor) and mark the positions for screws and the cut-out hole for the socket. Cut the hole and retrieve the touchpad cable (from the main module) and plug it into the touchpad. Mount the back cover to the wall on the marked place.

c) Attach the front cover to the back cover. Two touchpads can be installed in one system and connected to the touchpad ports T1 and T2 on the mainboard respectively. The two touchpad ports are equal and the touchpads can be connected to any of them.

9) Setting Spill Function

This is a function designed to automatically open a damper if someone attempts to shut down all dampers thus preventing pressure build up in the duct. Any zone in the system can be set to Spill zone. However, DO NOT use bedrooms as the spill zone. During sleep time if the air conditioner is on and the spill zone is automatically forced to open, the spill zone will be very cold or hot. This may cause discomfort if bedrooms are used as spill zones. It is recommended to use the zones close to the return air grille as the spill zone.

When the spill function is set by turning on the spill function switch on the mainboard, the default spill zone is zone 2. If zone 1 or another zone is chosen as the spill zone, pressing and holding the on/off button for that zone for 5 seconds will set this zone as the spill zone. The LED of all zones will flash quickly to indicate the spill setting is successful. Releasing the button will bring the LEDs back to normal and the spill function of the zone will remain till next change. If all zones are closed, the spill zone will automatically open to spill excess air and its LED will flash slowly to indicate the spill function is activated. Turning on any zone from the touchpad will deactivate spilling and the flashing will stop. This function is disabled in factory default setting.

If the 4-zone membrane is applied on the touchpad, please press and hold pushbuttons for zone 2 and zone 5 at the same time till all LEDs flash. This will disable pushbuttons for zone 1 and zone 6 and close both zones which are not used. Accidental touching on the areas of zone 1 and zone 6 buttons will not turn on zone 1 or zone 6. The spill function (if enabled) will perform accordingly. Pressing and holding push buttons for Zone 1 and Zone 6 at the same time until all LEDs flash will bring back Zone 1 and Zone 6 to normal operation, and they will respond to pressing action accordingly.

In the cases of zones not being used, please make sure the unused zones are closed. Otherwise, the spill function (if enabled) will not perform as it should and pressure may build up in the duct and cause damage.

NOTE: If the spill function is set, please make sure to choose an installed zone as spill zone, which has a motorised damper connected to.

10) Troubleshooting Guide

PROBLEM	SUGGESTED ACTION
No response from the touchpad / The LED does not turn On/Off.	• Check if the cable from the touchpad to the main module is plugged in properly • Check if the cable is faulty with a cable tester. If yes, replace the cable. • Check if the power to the main module is turned ON / check if there is a power failure. • Check if the LED light on the main module is OFF while switch 2 is set to ON position. If yes, the fuse might have to be replaced. • The touchpad or main module might be faulty. Replace the touchpad first and if the problem still exists replace the main module.
Dampers have no response when turned on or off	• Check if the cable from the main module to the damper motor is plugged in properly. • Check if the cable is faulty with a cable tester. If yes, replace the cable. • Check if the damper motor is faulty by connecting the same zone output port to a spare damper motor. If yes, replace the damper motor. • If the problem still exists, the main control module might be faulty. Replace the main control module.
Zones don't open/ close as desired	• Check if the damper motor of that particular zone is connected to the right port on the main control module and corresponds with the touchpad. • Check if Spill is activated
Damper Motor drives the wrong way	• Damper blade might be installed in the wrong position. If yes, reposition the damper blade by removing the damper motor and then re-align the damper blade to the respective position. • Check if the cable connecting the damper motor and the main control module is faulty. If yes, then replace the cable.

APPENDIX A - SPECIFICATIONS

Electrical Requirements

Power supply:	24VAC ± 10%
Line frequency:	50 Hz
Fast Blow Fuse:	1.5A M205

Transformer

Input Voltage:	240VAC, 50 Hz
Output Voltage:	24VAC, 50 Hz
Wattage:	24W

Components Power Consumption

Touchpad:	0.5 VA
Main Control Module:	2VA

Zone Output

Output Voltage:	24VAC, 50Hz
Current:	200mA (1 damper motor)

Environmental Requirements

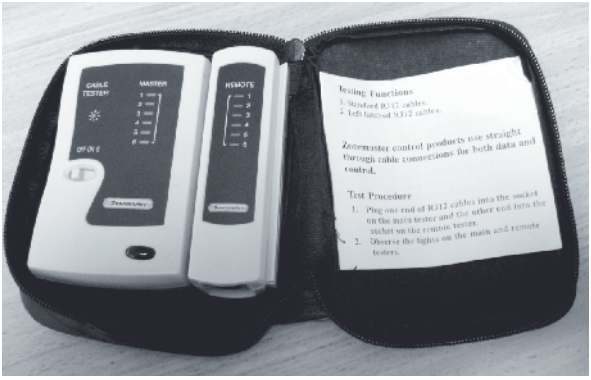
Operating temperature:	0°C to 60°C
Altitude:	0 to 2000 meters
Operating relative humidity:	10% to 80%

Avoid static electricity hazards
Avoid electromagnetic radiation sources
Avoid dust contamination
Avoid highly corrosive environments

Maximum Single Cable Length

Control Cable (Centre Latched):	20 metres
Data Cable (Left Latched):	10 metres

APPENDIX B - ZONEMASTER CABLE TESTER



Cable Tester
(Item Number: 657089)

1) Application of the Cable Tester

Zonemaster cable tester is used to test all RJ12 cables before the start of the installation process thus reducing considerable diagnostic time if the fully installed system is subsequently found to have a problem.

2) Features of the Cable Tester

- Tests Centre Latched and Left Latched RJ12 cables.
- Portable, quick and easy to test cables.
- Bright LED's to indicate a faulty cable in the dark roof spaces.
- 9V battery operated.
- User Instructions provided.

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