



**VAV
(VARIABLE AIR VOLUME)
CLIMATE ZONING SYSTEM**

Technical Manual

&

User Manual

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2008 EDITION

IMPORTANT INSTALLERS NOTE

The Installer MUST be familiar with the features of the VAV and the installation process BEFORE INSTALLATION COMMENCES.

Zonemaster/Polyaire does not take responsibility for poorly designed or installed VAV systems. Neither will we take responsibility for customer complaints due to poor design and installation. We strongly suggest that any installer wishing to install a Zonemaster VAV system should fully acquaint himself with the design features and capabilities of the system before commencing the job, either by reading the installation manual thoroughly or consulting with a Polyaire staff member conversant with this system (Preferably both). Contact Polyaire re VAV installation training.

INSTALLATION TIPS & COMMON PROBLEMS

1. The VAV power transformer(s) are fitted with 3 pin plugs and should be plugged in to their own power point separate from the A/C unit. DO NOT remove the plug and hard wire the VAV to the A/C power supply as the wide fluctuations in the A/C current will damage the VAV unit.
2. Don't get confused between Data and Control Cables. The packages are clearly marked. Data Cable has left latched plugs and Control cable has centre latched plugs
3. Always check cables: Particularly if making up your own cables. Cables and plugs can sometimes get twisted or be faulty, the wires and contacts are very small. To ensure that all cables are ok pre- test with Zonemaster Cable Tester (Available from Polyaire). This will help eliminate faults before (rather than after) installation.
4. Do not tape over the button at the bottom of the damper blade when attaching flexible duct. This is easy to do and will stop the damper turning freely.
5. All zones MUST have their own unique address allocated via the touchpad. IE: If there are 6 zones the system must have 6 addresses.
6. Do not plug 2 touch pads into one 3 way plug.
7. VAV systems should only be fitted to Flexible duct with large enough diameter to easily take the required volume of air. Small duct creates excessive noise and vortex draughts and doesn't allow the system to regulate properly.
8. Return Air Grilles should be positioned in the same space as the designated "Spill" zone to ensure the VAV sensor can operate properly.
9. Substantial differences in zone temperature will only be achieved in separate zones if these are effectively separated from other zones. IE Doors must be closed to prevent cross flow from room to room.
10. The end user should be fully informed on the unit at time of commissioning so that they fully understand the operation of the VAV unit. The end user should be encouraged to read the user manual.

CONTENTS

Features	1
Application	1
Components	2
Configuration	3
Installation	5
Bypass Control	7
Commissioning	8
1. Initiating and Exit Setting Process	8
2. Initialisation of Touchpad Address	9
3. Room Temperature Sensor	9
4. Minimum Ventilation	10
5. Supply Air Safety High & Low Limits - Master Touchpad	10
6. Spill/Bypass Air Setpoint - Master Touchpad	11
7. Naming Zones - Master Touchpad	12
8. Damper on/off Test	12
Installation Information Sheet	13
Trouble Shooting Guide	15
User Manual	16
1. Zone Touchpad	16
2. Master Touchpad	17
3. Programming Mode	18
Appendix A - Technical Specifications	25
Appendix B - Standard Configuration of VAV System	27

Liability

Please read the instructions carefully before installing this Zonemaster VAV Climate 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 this system.

FEATURES

- Manual and time programmable zone temperature control.
- Supports up to 16 zones.
- Address of each zone is set directly from the touchpad.
- Maintains room temperature within $\pm 1^{\circ}\text{C}$ using an onboard sensor.
- LCD indicator for zone status and parameter display.
- User-friendly temperature and program setting.
- Real time clock with battery backup.
- 5-1-1 programmable temperature setting point and start time.
- Personalised zone labelling.
- Auto spill/bypass --- the designated zones/bypass are forced open when all zones are turned off.
- Safety system --- Opens all dampers if the supply air temperature is less than low limit or more than high limit.
- All zones automatically return to their original on/off state once power up.

APPLICATION

The Zonemaster VAV (Variable Air Volume) is a fully featured system designed to accurately manage air flow by zone in Ducted reverse cycle, heating and evaporative air conditioning systems.

It manages airflow from the A/C unit by assessing temperatures in each zone and opening and closing dampers to increase or decrease airflow to achieve and maintain a preset temperature in that zone.

The temperature difference that the Zonemaster can achieve will not be lower (cooling) or higher (heating) than the temperature set by the AC unit.

COMPONENTS



1) Main Controller

The main controller collects and processes all the information.



2) Master Touchpad

6 button touchpad.

To program and control all the zones in the system.



3) Zone Touchpad

3 button touchpad.



4) Bypass Damper and Controller (optional) Green

Damper controller receives bypass control signal from the main controller to open or close the bypass damper.



5) Supply Air Sensor

Supply air sensor measures the temperature of the supply air.



6) Power Supply

The 24VAC transformer provides power to the first 8 touchpads - dampers and main controller.



7) Battery

3.6 V rechargeable battery for main controller.



8) Left Latched Double Adaptor & Cable Kit

Double adaptor connects the main controller/touchpads via the data bus.



9) Centre Latched Triple Adaptor & Cable Kit

Triple adaptor connects the 24VAC power supply via the control bus.



10) Mounting Bracket

For the touchpads.

CONFIGURATION

Main controller collects and processes all the information. The connections to the main controller are shown in Figure 1.

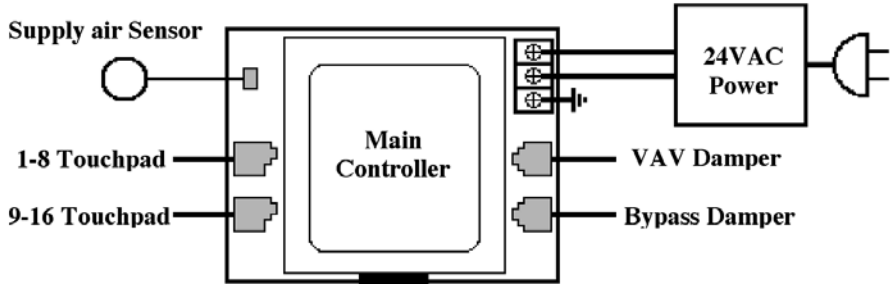


Figure 1. Main Controller Connection Diagram

Zonemaster VAV is a serial bus based system which has a Control bus and Data bus. **The Control bus** provides 24VAC power for up to 8 Dampers via the main controller as shown in Fig 2.

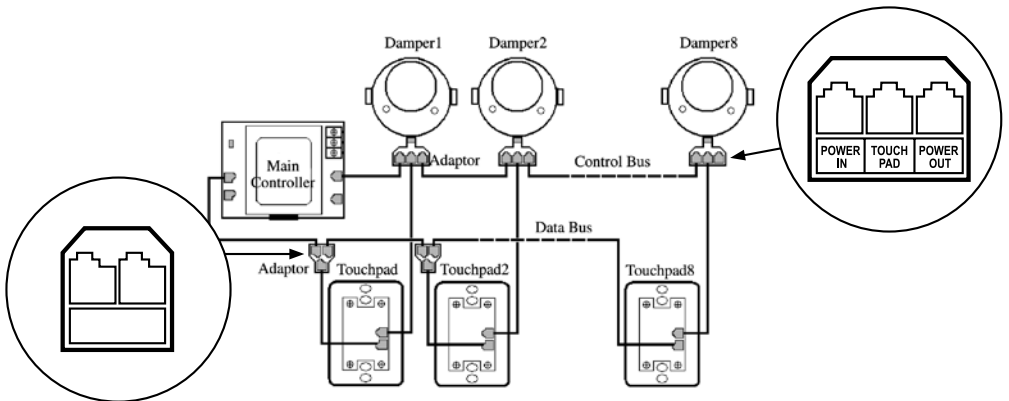


Figure 2. Wiring diagram of Zone 1 to Zone 8

The Data bus provides communication between the main controller and the touchpads.

NOTE: The Main Controller provides power for up to 8 Touchpads and damper motors. If more than 8 touchpads and dampers are installed auxiliary power must be provided via separate 24VAC and 9VDC power supplies as shown in figure 3.

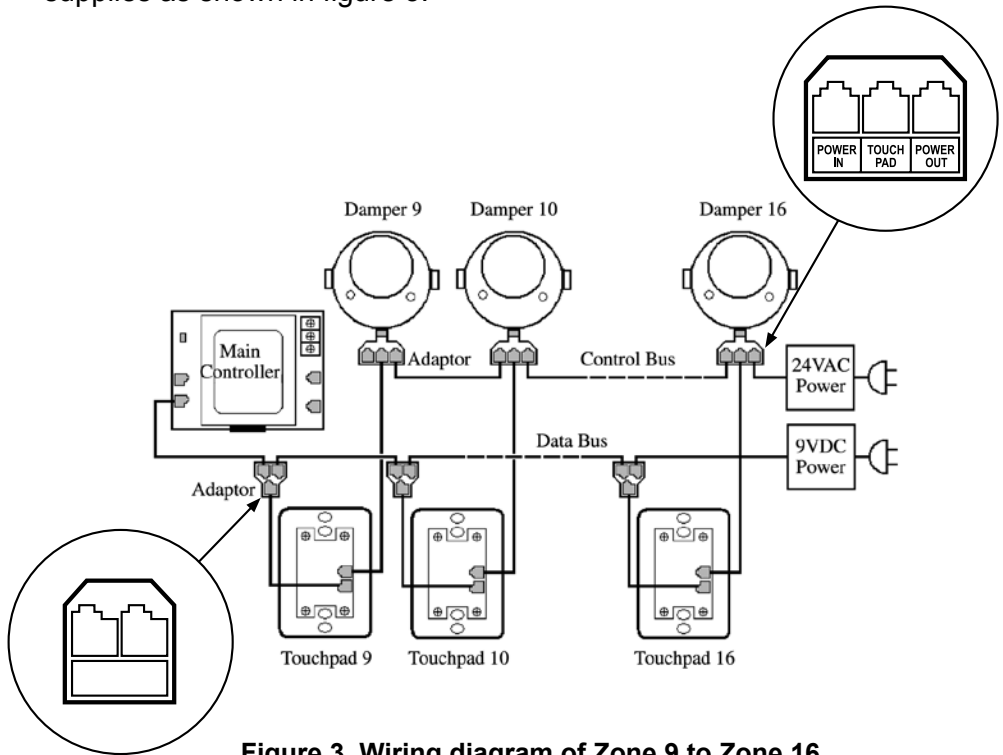
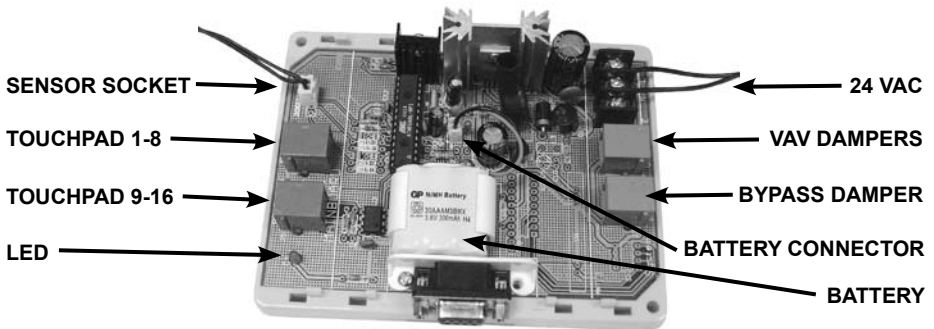


Figure 3. Wiring diagram of Zone 9 to Zone 16

INSTALLATION

- 1) Remove the 3 covers from the main control board.
- 2) Position the main controller on top of the fan coil unit or on the supply air duct and secure.
- 3) Connect the 24VAC power supply to the terminals N + L on the main controller board. When turning on the power, the red LED will illuminate to show that the main controller is ready.



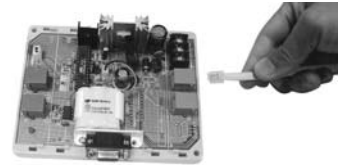
- 3) Mount the supply air sensor in the supply air duct upstream from the motorised dampers. Plug the sensor into the socket on the main controller board.
- 4) Connect the battery by plugging into the socket on the main controller board.
- 5) Use two pre-tested data cables to connect the main controller (touchpad 1-8 socket) and a touchpad via a double left latched adaptor, as shown in Figure 2. The LCD on the touchpad should show the clock after setting a unique address to the touchpad. (Refer to the commissioning section) Otherwise, check the connection and the cables.



6) Repeat step 5) to connect all the touchpads according to Figure 2 and 3. Make sure every touchpad is working correctly by checking the clock and the temperature displayed on the touchpad.



7) Plug a control cable into the 'VAV' socket on the main board and the other end into the '24Vac IN' port on a triple adaptor. Plug the triple adaptor into the motorised damper closest to the main board.



Warning - Only yellow Polyaire™ Dampers are compatible with the system.

8) Use another control cable to plug into '24Vac OUT' port on the triple adaptor and the other end of the cable to '24Vac IN' port on the other adaptor for the next motorised damper.



9) Follow Step 8) to connect all motorised dampers in series as shown in Figure 2.

10) Plug one end of a control cable into the 'touchpad' socket on the triple adaptor and the other end into the socket on the back of the touchpad.

11) Follow step 10) to connect all the dampers and touchpads together as shown in Figure 2.

- 12) Turn off the power and disconnect the touchpad.
- 13) Position the touchpad at the right place. Ideally, its position should be approximately 1.6 metres off the floor on the wall. Fit the data cable and the control cable through the wall cavity and connect to the touchpad again. Mount the touchpad onto the bracket in the wall cavity.



Please note that the touchpad should not be exposed to direct sunlight and other heat sources.

0 : 0 Am
Initiate

- 13) Apply the power again to the transformer. The LCD should show clock time and temperature where the touchpad is located after showing 'initiate' on the second line for about 15 seconds.

0 : 0 Am
25.0°C

BYPASS CONTROL

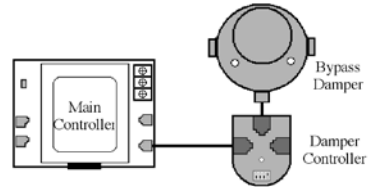
- 1) If bypass control is chosen for the system, mount the green damper controller on the top of a green motorised damper and plug the bridge cable in.



- 2) Take off the small cover on the top of the damper controller and set a special address for the bypass damper controller.



- 3) Use a pre-tested control cable to connect the bypass damper controller to the 'point' socket on the main controller board. Make sure the red light on the damper controller is on. Otherwise, check the cable and the connection.



COMMISSIONING

The Zonemaster VAV system has several parameters that must be set in the commissioning stage.

Zone touchpad (3 button) can only set three zone parameters:



- 1) Touchpad Address
- 2) Temperature Sensor
- 3) Minimum Ventilation



Master touchpad (6 button) can set the above parameters and three system parameters listed below:



- 1) Supply Air Safety High & Low Limits
- 2) Spill Bypass/Air Setpoint
- 3) Naming Zones



1. Initiating and Exit Setting Process



- 1) Hold down both  and  buttons for about 5 seconds until the LCD displays 'Setting' on the top line of the LCD screen.

10:30 Am

25.0°C





- 2) For zone touchpads, pressing  button after the setting of all three parameters will return to the normal operation mode.
- 3) For the master touchpad, pressing  button will return to the normal operation mode.

2. Initialisation of Touchpad Address

Address
No addr

Each touchpad (zone) must have a unique address from 1 to 16 to be identified by the main controller. The touchpad has a factory default of 'No addr' that cannot be identified by the main controller.

Address
Zone 1

The touchpad needs to be initiated by allocating a unique address. The allocation can be carried out by pressing  or  button, and then pushing  (zone touchpad) or  (master touchpad) button.



Please note that each touchpad (zone) must have a unique address. The same address for any of two touchpads will cause communications problem between the main controller and touchpads, and the touchpad LCD shows 'Check Address'





3. Room Temperature Sensor

Each touchpad has an onboard sensor to measure the temperature of the room for temperature control. The sensor can be calibrated to provide more accurate temperature control.

- 1) Using an accurate probe to measure the temperature of the area user wants to calibrate and record the value.

Sensor





24.5°C

- 2) At the setting mode, press  (zone touchpad) or  (master touchpad) button until the LCD displays the 'Sensor' screen
- 3) Press  or  button to adjust the displayed value to the recorded value.

4. Minimum Ventilation

Customers may prefer minimum ventilation during the climate control. This ventilation allows a minimum airflow into the zone that is switched on. The amount of ventilation can be set from 0 to 30% open with a default of 0%.

Min Vent
0%




- 1) At the setting mode, press  (zone touchpad) or  (master touchpad) button until the LCD displays the 'Min Vent' screen.
- 2) Press  or  button to adjust the percent value of the minimum ventilation as desired.

5. Supply Air Safety High & Low Limits - Master Touchpad




10:30 Am
Safety

H_limit
60.0°C

For safety reasons, the system monitors the supply air temperature closely. If the temperature moves outside of the limits, all dampers in the system are forced open and the LCD displays 'Safety' on screen. The factory defaults of supply air safety high & low limits are 60°C and 5°C respectively and the safety control is disabled.


- 1) At the setting mode, press  button until the LCD displays the 'H_limit' screen.
- 2) Press  or  button to change the high limit to the desired value. The adjustable range of the high limit is from 45°C to 75°C

L_limit
5.0°C

- 3) Press  button once again, the LCD screen will display the 'L_Limit'.
- 4) Press  or  button to change the low limit to the desired value. The adjustable range of the low limit is from 0°C to 15°C.

H_limit
disable



If the customer does not want the safety function, the safety H-limit and L-limit MUST be disabled by pressing  button during the setup.

Spill or Bypass Modes

A 'Spill' or "Bypass" function is designed to relieve pressure in the duct if too many zones have been turned off.

Spill Mode

The VAV system has an inbuilt "Spill" system that will automatically open vents if too many have inadvertently been closed. The preset factory default is 30% of the total number of zones. The Preset Factory default can be varied but we recommend 30% as the lowest safe value to protect the duct. In Spill mode the zones with the lowest addresses in the system are automatically opened if the total number of open zones is less than the assigned spill setpoint. (IE: If the system has 10 zones numbered 1- 10 and all have been closed the VAV will automatically open zones 1,2, 3 to relieve the pressure. The only way to close these "spill" zones is to make sure at least 3 other zones are open.





Bypass Mode

The alternative way to relieve pressure in the duct is to install a duct from the A/C outlet via a motorized damper to the return air duct. This system should only be used where the spill function is considered unsatisfactory. In Bypass mode, a specific damper is used to return the air directly to the return air duct if the total number of zones open is less than the setpoint. The bypass damper is controlled by a specific damper controller with its own unique address.

Note: Ensure that the Air Con Unit Return Air Sensor is positioned in the return air duct between the Bypass duct and the unit so that it can register the air from the bypass duct.

Spill
30%

Bypass
30%

- 1) At the setting mode, press  button until the LCD displays the 'Spill' or 'Bypass' screen.
- 2) Press  button to select spill or bypass mode.
- 3) Press  or  button to change the spill/bypass setpoint to its desired value. The adjustable range is from 0% to 50%.




We recommend a setting of 30% or more to safeguard Duct. If no spill or bypass control is required in the system, the setpoint MUST be set to 0%.


7. Naming Zones - Master Touchpad

The name of a zone is called 'Zone_addr'. For example, zone 1, which has an address of 1, is called 'Zone_1' on its factory default. The names can be customised as follows:


Z1 Name
Zone 1

- 1) At the setting mode, press  button until the LCD displays the first zone name, for example 'Z1 Name' on the top line of the LCD. The second line shows the current name of zone 1.



Z1 Name
Lounge

- 2) Press  or  button to select one of the preset zone names for the zone. There are 26 preset names in the list.


Z1 Name
Lounge

- 3) To make changes to the preset selected name, press  button to move to the character that is flashing.


Z1 Name
ALo nge

- 4) Use  or  button to select the character from the list as desired. There are 26 letters in capital and normal case, 10 numbers and a space in the list.

Z2 Name
Zone 2

- 5) Press  button to select the next zone naming screen and follow steps 2 to 4 to customise the name of the zone.

8. Damper on/off Test

- 1) Switch on the air conditioner.
- 2) Press  button to turn a zone on or off to check if the damper is correctly connected by feeling the air at the outlet. Refer to User's manual for the operation.

INSTALLATION INFORMATION SHEET

The following zone table is designed to assist installation and commissioning.

Address	Default Name	Zone Name	Program
1	Zone_1		
2	Zone_2		
3	Zone_3		
4	Zone_4		
5	Zone_5		
6	Zone_6		
7	Zone_7		
8	Zone_8		

Please note the following:

Zone name is the actual name of the zone, for example; lounge, kitchen, bedroom etc.

Spill zones should be assigned lower addresses, and they should be located near return air grilles.

Parameter	Default	Custom Value							
Address	No addr								
Sensor									
Min Vent	0%								
High limit	Disable/ 60°C								
Low limit	Disable/ 5°C								
Spill	Spill/ 30%								

TROUBLE SHOOTING GUIDE

Problem	Suggested Action
Touchpad has nothing shown on LCD.	<ul style="list-style-type: none"> • Disconnect the data cable from the touchpad immediately. • Check if the cable is crossed over with the Zonemaster Cable Tester. • Check the power supply.
LCD shows the touchpad address.	<ul style="list-style-type: none"> • Check the cables and the connection of the data bus.
LCD shows 'Check Address'.	<ul style="list-style-type: none"> • Check addresses for all touchpads.
Touchpad display is not normal.	<ul style="list-style-type: none"> • Reset the touchpad by disconnecting the data cable and then plugging it in again. • Reset the main controller by turning off power supply and turning on again.
Dampers have no response when turned on or off.	<ul style="list-style-type: none"> • Check the control cable between the touchpad and the damper. • Check the 24V AC power supply.
Temperature is beyond $\pm 1^{\circ}\text{C}$ range.	<ul style="list-style-type: none"> • Air Conditioner does not have enough capacity for the area at the particular moment. • Too much air coming from other areas.

Please contact distributors for any other problems not listed as above.

USER MANUAL

Touchpad Layout

The Master touchpad has a LCD with six buttons, whereas the Zone touchpad has a LCD screen with only three buttons, as shown in Figure 5. In normal display mode, the LCD screens will display clock time and their local zone temperatures.

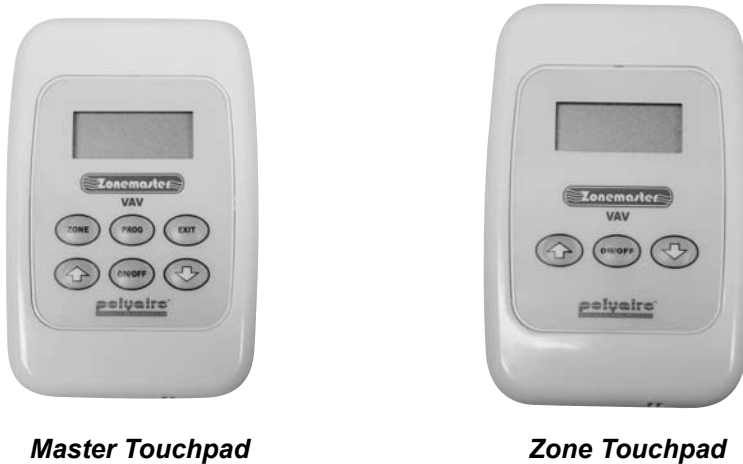
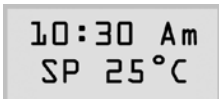
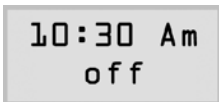
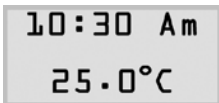




Figure 5. Layout of Master and Zone Touchpads

Zone Touchpad

Zone On/Off Control



- 1) In 'on' status, the LCD of the touchpad displays zone temperature or setpoint. Pressing  button once will turn off the zone and the second line of the screen will display 'off'.
- 2) In 'off' status, pressing  button once will turn on the zone and the second line of the LCD screen will display the setpoint of the zone for 20 seconds, and then will return to the normal display of the zone temperature.





Zone Temperature Setting



10:30 Am
SP 25°C



10:30 Am
SP 24°C

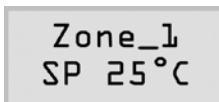
- 1) In 'on' status, press  or  button once to allow the setpoint of the zone to be displayed on the second line of the LCD.
- 2) Press  or  button again to adjust the setpoint to the desired value.
- 3) The screen will return to zone temperature display in 20 seconds with no key being pressed.

Master Touchpad

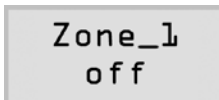
Zone On/Off Control and Temperature Setting

Master touchpad controls the temperature of the zone where it is located besides its function of setting other zones temperatures. Its operation for on/off control and temperature setting are the same as the zone touchpad described in above section.

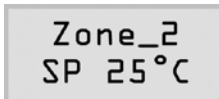
All Zone Browse








Zone_1
SP 25°C




Zone_1
off



Zone_2
SP 25°C

- 1) A master touchpad can browse through all the zones by pressing  button. When a zone has been selected, the zone's name and its setpoint or 'off' status are shown on the LCD screen.
- 2) In browse mode, pressing  button once will turn the selected zone on or off.
- 3) When a selected zone is in 'on' status, press  or  button to adjust the setpoint to the desired value for the zone.
- 4) Press  button again, user can select next zone for temperature setting or on/off control.

- 5) Pressing  button can exit from Zone Browse Mode. Alternatively, it will return to the normal operation mode itself in 20 seconds with no key being pressed.

Programming Mode

Programmable zone temperature control is an important feature of the Zonemaster VAV system. This system has a 5-1-1 program capability which means the system has an individual program for weekdays (Monday to Friday), Saturday and Sunday respectively. Each program has 4 programmable events per day: wake, day, back and sleep. The events can be enabled or disabled. For the enabled event, the user can adjust its start time; turn off the cooling/heating and change cooling/heating temperature setting as desired.

The Zonemaster VAV system provides a battery backup real time clock to support the programming mode. There are up to 4 sets of programs that can be chosen by each zone. All 4 sets of programs are defaulted in the factory with identical settings listed in the following table.

Program 1 to 4		Wake	Day	Back	Sleep
Monday to Friday	Start time	6.30AM	8.00AM	5.30PM	10.00PM
	Set cool	24°C	off	24°C	30°C
	Set heat	21°C	off	21°C	17°C
Saturday	Start time	7.30AM	12.30PM	6.00PM	11.30PM
	Set cool	24°C	24°C	24°C	30°C
	Set heat	21°C	21°C	21°C	17°C
Sunday	Start time	7.30AM	12.30PM	6.00PM	11.30PM
	Set cool	24°C	24°C	24°C	30°C
	Set heat	21°C	21°C	21°C	17°C

The above default settings are explained as follows;

Monday to Friday:

6:30AM Wake, the zone turns on with a setpoint of 24°C for cooling mode and 21°C for heating mode.

8:00AM Day, the zone turns off.

5:30PM Back, the zone turns on again with a setpoint of 24°C for cooling mode, and 21°C for heating mode.

10:00PM Sleep, the zone's temperature setpoint is set to 30°C for cooling mode and 17°C for heating mode.

Saturday:

7:30AM Wake, the zone turns on with a setpoint of 24°C for cooling mode and 21°C for heating mode.

12:30PM Day, the zone's temperature setpoint is set to 24°C for cooling mode and 21°C for heating mode.

6:00PM Back, the zone's temperature setpoint is set to 24°C for cooling mode and 21°C for heating mode.

11.30PM Sleep, the zone's temperature setpoint is set to 30°C for cooling mode and 17°C for heating mode.

Sunday:

The program is the same as Saturday's.

Setting Clock and Week

Clock
10:30Am

Clock
9:30Am

Week
Monday











VAV
Program 1

M-F Wake
6:30Am









M-F Wake
6:30Am

M-F Wake
disable

M-F Wake
Cool 24°

- 1) Press  button once to select the clock and week setting.
- 2) Use  or  button to change the flashing hours to the desired value.
- 3) Press  button once more to select the minutes to be flashing.
- 4) Use  or  button to change the flashing minute to the desired value.
- 5) Press  button again to select week to set.
- 6) Use  or  button to change the weekday to the desired day.
- 7) Pressing  button can exit the clock and week setting mode. Alternatively, it will return to the normal operation mode itself in 20 seconds with no key being pressed.

Adjust Program Data

- 1) Press  button once and then press  button once. The LCD shows VAV program 1.
- 2) Press  button again. The LCD will show the detail of the program 1. At the first screen, it shows the start time of the Wake event of the program 1 for Monday to Friday.
- 3) Use  or  button to change the flashing hours to the desired value.
- 4) Press  button once to select minutes, and repeat step 3) to change the minutes.
- 5) If you do not want the event press  button to disable it.
- 6) Press  button again for the enable event, the LCD will show the temperature setpoint for the cooling mode of the event.

M-F Wake
Cool off

M-F Wake
Heat 21°

M-F Wake
Heat off











M-F Day
8:00Am

M-F Back
5:30pm



M-F Sleep
10:00pm

Sat Wake
7:30Am

Sun Wake
7:30Am

- 7) Use  or  button to change the setpoint in cooling mode to the desired value or press  button to turn off the cooling control at the start time.
- 8) Press  button again, the LCD will show the temperature setpoint for heating mode of the event.
- 9) Use  or  button to change the setpoint in heating mode to the desired value or press  button to turn off the heating control at the start time.
- 10) Press  button again, the LCD will show the start time of the Day event of the program 1 for Monday to Friday.
- 11) Follow steps 2) to 10) to set the start time and cooling/heating setpoint of the Day event or disable the event.
- 12) Press  button again, the LCD will show the start time of the Back event of the program 1 for Monday to Friday.
- 13) Follow steps 2) to 10) to set the start time and cooling/heating setpoint of Back event or disable the event.
- 14) Press  button again, the LCD will show the start time of the Sleep event of the program 1 for Monday to Friday.
- 15) Follow steps 2) to 10) to set the start time and cooling/heating setpoint of Sleep event or disable the event.
- 16) Follow steps 2) to 15) to adjust the program 1 of Saturday.
- 17) Follow steps 2) to 15) to adjust the program 1 of Sunday.

VAV
Program2







- 18) If the user wants more than one set of programs for different zones press  button to select the next program.
- 19) Repeat step 2) to 17) to set all the time and setting for the program 2, 3 and 4.
- 20) Pressing  button can exit the programming mode. Alternatively, it will return to the normal operation mode itself in 20 seconds with no key being pressed.

Select a Program for a Zone

Zone_1
No Prog

Zone_1
Program1

Zone_2
Program2

- 1) Press  button to select a zone and then press  button once. The LCD will show the program status of the zone. No program is selected as factory default for each zone.
- 2) A program can be selected by pressing  or  button.
- 3) Press  button to select next zone, repeat step 2) to choose programs for the other zones.
- 4) Pressing  button can exit the programming mode. Alternatively, it will return to the normal operation mode itself in 20 seconds with no key being pressed.

Programming Information Sheet

The following program tables are designed to assist the user in programming.

Program 1		Wake	Day	Back	Sleep
Monday to Friday	Start time				
	Set cool				
	Set heat				
Saturday	Start time				
	Set cool				
	Set heat				
Sunday	Start time				
	Set cool				
	Set heat				

Program 2		Wake	Day	Back	Sleep
Monday to Friday	Start time				
	Set cool				
	Set heat				
Saturday	Start time				
	Set cool				
	Set heat				
Sunday	Start time				
	Set cool				
	Set heat				

Program 3		Wake	Day	Back	Sleep
Monday to Friday	Start time				
	Set cool				
	Set heat				
Saturday	Start time				
	Set cool				
	Set heat				
Sunday	Start time				
	Set cool				
	Set heat				

Program 4		Wake	Day	Back	Sleep
Monday to Friday	Start time				
	Set cool				
	Set heat				
Saturday	Start time				
	Set cool				
	Set heat				
Sunday	Start time				
	Set cool				
	Set heat				

APPENDIX A - TECHNICAL SPECIFICATIONS

Electrical Requirements

Power supply	24VAC \pm 10%
Line frequency	50 Hz

Components Power Consumption

Touchpad	0.5 VA
Damper controller	2.5 VA

Environmental Requirements

Operating temperature	0°C to 60°C
Altitude	0 to 2000 metres
Operating relative humidity	10% to 80%
Avoid static electricity hazards	
Avoid electromagnetic radiation sources	
Avoid dust contamination	
Avoid highly corrosive environments	

Touchpad

Power input	9VDC
Dimensions	78mm Wide x 118mm High x 13mm Deep

Main Control Board

Power input	24VAC 50Hz
Dimensions	104mm Wide x 134mm High x 62mm Deep

Damper Controller (for Bypass Damper)

Power input	24VAC 50Hz
Dimensions	60mm Wide x 85mm High x 25mm Deep

Damper Motor

Nominal Rotational Angle	90°
Rotational Runtime at 50Hz	15s
Connection Type	RJ12 plug

Transformer

Input Voltage	240VAC, 50Hz
Output Voltage	24VAC, 50Hz
Wattage	40W

Supply Air Sensor

Type	NTC thermistor
Resistance	10k Ω at 25°C
Range	0 to 100°C

Battery	AAAM rechargeable battery, 3.6V
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Data Bus	100 metres
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APPENDIX B - STANDARD CONFIGURATION OF VAV SYSTEM



Code	Items	Number of Zones							
		1	2	3	4	5	6	7	8
7150	Main Controller	REFER VAV SINGLE ZONE	1	1	1	1	1	1	1
7151	Master Touchpad		1	1	1	1	1	1	1
7152	Zone Touchpad		1	2	3	4	5	6	7
7154	24V Transformer		1	1	1	1	1	1	1
7186	Supply Air Sensor		1	1	1	1	1	1	1
7158	Control Cable Kit		2	3	4	5	6	7	8
7159	Data Cable Kit		2	3	4	5	6	7	8
7093	Damper Controller*		1	1	1	1	1	1	1
7094	Control Cable 3M*		1	1	1	1	1	1	1

Code	Items	Number of Zones							
		9	10	11	12	13	14	15	16
7150	Main Controller	1	1	1	1	1	1	1	1
7151	Master Touchpad	1	1	1	1	1	1	1	1
7152	Zone Touchpad	8	9	10	11	12	13	14	15
7154	24V Transformer	1	1	1	1	1	1	1	1
7186	Supply Air Sensor	1	1	1	1	1	1	1	1
7158	Control Cable Kit	9	10	11	12	13	14	15	16
7159	Data Cable Kit	9	10	11	12	13	14	15	16
7093	Damper Controller*	1	1	1	1	1	1	1	1
7094	Control Cable 3M*	1	1	1	1	1	1	1	1
7155	24V Transformer Plug In	1	1	1	1	1	1	1	1
7157	DC Power Supply	1	1	1	1	1	1	1	1

* Option for bypass control system

System Installed by:

Date Installed:

For services, please contact:

Zonemaster

by

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AIRCONDITIONING PRODUCTS