



UNIPOINT RF DAMPER CONTROL SYSTEM
Owner's Manual & Setup Guide



Liability

Please read the instructions before installing this Zonemaster Zoning Control System. Polyaire Pty Ltd does not accept any responsibility for loss or damage that may occur as a result of the installation of this Zoning Control System.

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OWNERS MANUAL

1) Remote handset layout

The remote handset has a LCD screen with nine buttons as shown in Figure 1. The LCD screen will normally display clock time, Zonemaster RF logo and the battery status.

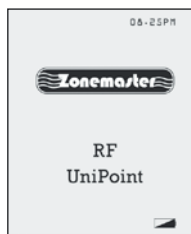


FIGURE 1

2) Manual on/off control mode

In sleep mode, as shown on the right figure, there are two ways to enter into zoning mode. The first way is to press or button; the other one is to press **OK** button to get into the function selection mode, and then press **OK** button again after selecting zoning by using or button.

- 1) In Zoning mode, the handset displays zone name and the on/off status of up to six zones as shown on the right figure.
- 2) Use the or button to select a zone to be controlled. The on/off status of the zone will be highlighted.
- 3) Press **ON/OFF** button to turn the zone on or off. The zone will be changed from ON to OFF or vice versa.



Zoning	
Zone-1	ON
Zone-2	ON
Zone-3	ON
Zone-4	ON
Zone-5	ON
Zone-6	ON

- 4) NOTE: The action will not happen immediately. The RF signal will be sent to the main control module by pressing **OK** button, and the damper of the selected zone will then change its status.
- 5) Repeat step 2) to 4) to select another zone to turn it on or off.
- 6) Pressing **EXIT** button will exit the zoning mode. Alternatively, it will return to the sleep mode itself in 15 seconds with no key being pressed.

Zoning	
Zone-1	OFF
Zone-2	ON
Zone-3	ON
Zone-4	ON
Zone-5	ON
Zone-6	ON

Zoning	
Zone-1	OFF
Zone-2	ON
Zone-3	ON
Zone-4	ON
Zone-5	ON
Zone-6	ON

3) Programming mode - On/off time control

Programmable on/off time control for each zone is an important feature of the Zonemaster UniPoint RF system. This system has a 5-1-1 program capability that means the system has an individual program for weekdays (Monday to Friday), Saturdays and Sundays respectively.

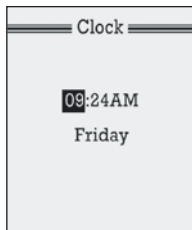
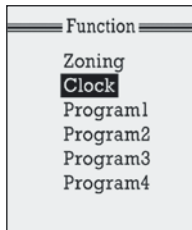
The system allows you to create 4 separate programs and then allocate any one of these to each of the (up to 8) zones.

Each of the 4 main programmes has 4 sub-programmable events per day: On time 1, Off time 1, On time 2 and Off time 2. Each program event can be enabled/disabled and their times can be adjusted as desired. All 4 sets of sub-programs are disabled in the factory default with identical settings as listed in the following table.

	On time 1	Off time 1	On time 2	Off time 2
Monday to Friday	6.30AM	8.00AM	5.30PM	10.00PM
Saturday	7.30AM	12.30PM	6.00PM	11.30PM
Sunday	7.30AM	12.30PM	6.00PM	11.30PM

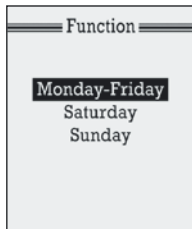
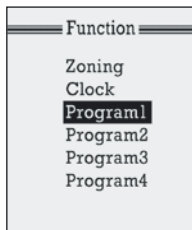
3a) Set time and day

- 1) Press the **OK** button once to enter into the 'Function' Screen.
- 2) Use the **▲** or **▼** button to select the 'Clock', and then press **OK** button to enter into the sub menu of the clock setting.
- 3) Use **←** and **→** button to select hours, minutes and weekdays. Press **+** and **-** button to change hours, minutes and weekdays.
- 4) Pressing **EXIT** button can exit the clock and week setting mode. Alternatively, it will return to the sleep mode itself in 15 seconds with no key being pressed.

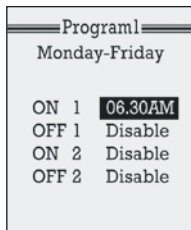
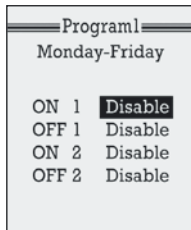


3b) Adjust program time

- 1) Press the **OK** button once to enter into the 'Function' Screen.
- 2) Use the **▲** or **▼** button to select the program to be modified, and then press **OK** button to enter into its sub menu.
- 3) Use the **▲** or **▼** button to select Monday-Friday, Saturday or Sunday program. Then press **OK** button to enter into its sub menu.
- 4) Press **ON/OFF** button to enable the setting for ON/OFF times. The LCD will show the start time of the first turning on event of the program.
- 5) Press **+** and **-** button to change its ON1 settings.
- 6) Press the **▲** or **▼** button to select other ON/OFF settings. Follow steps 4) to 5) to set the off time or disable the event.



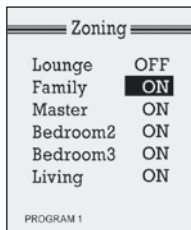
- 7) Press the **EXIT** button to go back to program setting menu.
- 8) Follow steps 3) to 6) to set the off time or disable the event for other times in the program.
- 9) Repeat steps 2) to 8) to set all the time for the other programs.
- 10) Pressing **EXIT** button can exit the clock and programming mode. Alternatively, it will return to the sleep mode itself in 15 seconds with no key being pressed.



3c) Select a program for a particular zone

The various zones should have been given names by your installer that correspond with the particular rooms in your house. If this has not happened call your installer to get this rectified.

- 1) Make sure that at least one of the four programs is enabled by setting up all the parameters in the program.
- 2) Press the **↓** button to get into zoning screen, and then press **↑** or **↓** button to select the zone.
- 3) Use **←** and **→** button to select the enabled program. The program will be shown at the bottom of the screen.
- 4) Repeat steps 2) and 3) to choose programs for other zones.
- 5) Pressing **EXIT** button can exit the zone operation mode. Alternatively, it will return to the sleep mode itself in 15 seconds with no key being pressed.



4) Safety/spill system

The RF UniPoint has a built in safety system to protect against all the dampers being shut off together (Causing duct blow off due to high air pressure or more serious problems).

Your installer will set this for you. Usually it will be set so 20-30% of the dampers will remain open. These will usually be low numbered zones close to the return air duct (Zones 1 or 2) that open into frequently used space.

5) Turbo feature

The RF UniPoint allows one zone to be selected as the 'Turbo' zone. This will usually be a zone which might require heavy airflow at certain times (due to a rapid influx of people). The family/dining/games room are examples.

'Turbo-ing' a zone will give the zone a full opening while all the other zones opening positions are reduced by 50%. This will bring extra air into the zone.

6) Information sheet

Use the following tables to record your settings

PROGRAM 1	On time 1	Off time 1	On time 2	Off time 2
Monday to Friday				
Saturday				
Sunday				

PROGRAM 2	On time 1	Off time 1	On time 2	Off time 2
Monday to Friday				
Saturday				
Sunday				

PROGRAM 3	On time 1	Off time 1	On time 2	Off time 2
Monday to Friday				
Saturday				
Sunday				

PROGRAM 4	On time 1	Off time 1	On time 2	Off time 2
Monday to Friday				
Saturday				
Sunday				

SETUP GUIDE

1) Features

- Supports up to 8 zones.
- All dampers are directly connected to the main controller.
- RF remote control handset.
- Manual and time programmable zone on/off control.
- LCD indicator on the handset for zone status and parameter display.
- Personalised zone labelling.
- 5-1-1 programmable on/off time programs.
- Automatic zone balancing --- each zone's opening position can be programmed for balancing purpose.
- One selectable turbo zone.
- 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 their original on/off state once power up.

2) Application

Zonemaster UniPoint RF control system is a fully featured and engineered system that is well suited to all ducted, reverse cycle, heating and evaporative air conditioning system for light commercial, residential or apartment applications.

3) Components

1) **Remote Control Handset**

User can input control commands from the handset to turn a zone on or off. The LCD on the handset displays clock and zone status.



2) **Main Control Board**

Main control board controls the position of motorized damper of each zone.



3) **Motorized Damper (Bright Green)**

Motorized damper drives the blade of the damper to turn on/off the air from ducting to a zone.



4) **Cable**

Cable connects the main control board and the motorized damper together.



5) **Supply Air Sensor**

Supply air sensor measures the temperature of the supply air for safety purposes.



6) **Power Supply**

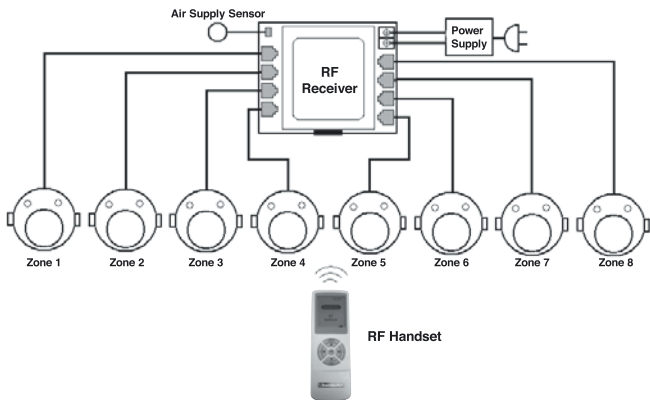
The 24 VAC transformer provides power to the main control board and the motorised dampers.



4) Configuration

Eight motorised dampers can be connected to the Main Control Board. If the bypass mode in which a damper is used to return the air directly to the return air duct, is selected in the system, there will be only 7 zones in the system, and the 8th zone becomes the bypass.

Otherwise, there are independent 8 zones in a spill system in which lower addressed zones in the system will be automatically forced to open to prevent pressure from building up and duct damage.



The cabling of the Zonemaster UniPoint RF is straightforward. A cable needs to connect the motorised damper to the relevant output port on the Main Control Board, as shown in the above diagram.

The connect points on the Main Control Board are numbered for easy reference.

NOTE: Test all cables prior to connecting with the Zonemaster Cable Tester.



5) Spill/Bypass Air Setpoint





Spill/Bypass air is primarily used to relieve duct pressure for the safety of the ducting. Such a control is achieved by comparing the system requirement with a setpoint. The factory default is in spill mode and the setpoint is 30% of total zones open, which is equivalent to 30% of the total airflow across the fan coil.

When allocating an address to each zone in spill mode, it is strongly recommended to give lower addresses to those zones that have higher spill privileges. These zones are normally located closer to the return air. The lower the address, the higher the spill privilege the zone has.

When the spill setpoint is reached, the main control board instructs zone 1 to open as spill. If the first spill zone cannot satisfy the spill air control, the zone 2 will be instructed to open to spill excess air. This process will continue until the spill air setpoint is satisfied in the system. Such a spill air control strategy implemented in the Zonemaster UniPoint RF control system requires the installer to allocate the zone 1 near the return air grilles.

Spill mode uses the zones with lowest address in the system as spill zones that will be automatically forced to turn on if the total open zones are less than the setpoint. For example, a 5-zone system without constant zone needs 1 zone to be open as a minimum requirement to prevent pressure building up and duct damage. The spill setpoint can be specified as 20%.

In bypass mode, a bypass damper is used to return the air directly to the duct if the total open zones are less than the setpoint. It should be connected to the 8th zone on the main control board.

- 1) At the setting mode in 'Parameter' screen, press  or  button to select 'Safety Spill'
- 2) Press **ON/OFF** button to select spill or bypass mode.
- 3) Press  and  button to change the spill/bypass setpoint to its desired value.

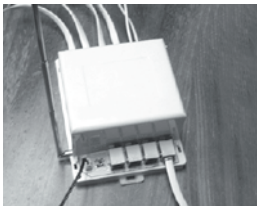
The adjustable range is from 0% to 50%.

Parameter	
System	Code 00
Number	Z1--Z8
H-limit	60°C
L-limit	5°C
Safety Spill	30%
Turbo	None



6) Installation

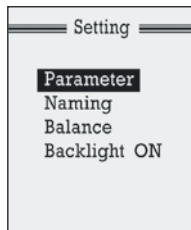
6a) Zone address and allocation

- 1) Allocate addresses from 1 to all zones with consideration of spill privileges for the zones.
- 2) Mount the main control board by screwing the box to a frame or Polyaire Distribution Fitting (PDF). Pull the antenna out to its maximum length. Please mount the control board away from any metal as it affects the reception of the RF signal.
- 3) Remove the two-side covers on the main control module so that all the LEDs and sockets for zones are shown.
- 4) Use a pre-tested cable to connect the 1st output port on the main control board to the motorised damper of the 1st zone in the system.
- 5) Repeat step 4) to connect other zones to its relevant output ports on the main control.
- 6) Mount the supply air sensor in the supply air duct between the fan coil and the first damper.
- 7) Connect supply air temperature sensor to the socket on the main control board.
- 8) Connect the 24VAC transformer to the terminal on the main control board. Apply the power to the transformer by plugging it into the 240VAC power outlet. A power LED on the main board should be on.
- 9) Put the two side covers back on the main control module.



6b) Initiating and exiting the 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.
- 2) At the setting mode, pressing **EXIT** button at any time will return to the normal operation mode.

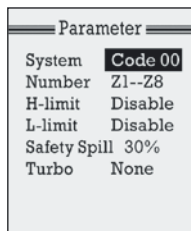


6c) Setting system code

Each system has a default system code of 0 for both the remote handset and the main control module. This code presents a unique identification for the system to avoid possible interference (with neighbours who have installed a similar system) with the effective range. In case of interference, the code needs to be adjusted to a different code. There are 8 codes in total (0,1,2,3,4,5,6,7).

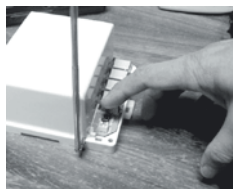
Setting system code on remote handset

- 1) At the setting mode, select 'Parameter' by pressing **OK** button to display its sub-menu.
- 2) Use  or  button to select the System Code (high lightened).
- 3) Use  and  button to increase or decrease the code.



Setting system code on main control module







- 1) Remove the two side covers on the main control board, a push button and 8 sets of LED indicators can be seen.
- 2) Press the push button once and the main control board goes into the setting up mode. The default setting for system code is 0.
- 3) Press the button again, the system code changes to 1, and the green LED for zone 1 lights up as well. This green light gives the confirmation of the system code to be 1.
- 4) Follow step 3) to set the system code to the required code. The required code is confirmed by the number of green LEDs shown on the board.



- 5) The main control board will exit the setting mode after the button not being pressed for 5s. When exiting, all the RED LEDs light up for resetting all the positions.
- 6) Once the setting is finished, all the zone's previous control positions will be resumed.

6d) Number of zones in the system









For the purpose of zone status display and spill/bypass zone calculation, the controller needs to know the total number of zones in the system. Its factory default value is 8.

- 1) At the setting mode, select 'Parameter' by using  or  button. Then press **OK** button until the LCD displays the 'Parameter' screen.
- 2) Use arrows  or  button to scroll down to 'Number' line.
- 3) Press  and  button to adjust zone number to the desired number of the system. The selectable zone number is 1 to 8.

Parameter	
System	Code 00
Number	Z1--Z8
H-limit	Disable
L-limit	Disable
Safety Spill	30%
Turbo	None

6e) Supply air safety high & low limits





For safety reasons, the system monitors the supply air temperature of the system closely. If the temperature moves outside of the limits, all dampers in the system are forced open. The factory default setting is that the safety control is disabled.

- 1) At the setting mode in 'Parameter' screen, press  or  buttons to select 'Hi-limit', and press **ON/OFF** button to enable Hi-limit.
- 2) Once enabled, the Hi-limit shows 60°C as default and it can be changed by pressing the  and  buttons. The adjustable range of the high limit is from 45°C to 75 °C.
- 3) Press  or  button once to select 'Lo-Limit', and press the **ON/OFF** button to enable 'Lo-limit'.
- 4) Once enabled, the Lo-limit shows 5°C as default and it can be changed by pressing the  and  buttons. The adjustable range of the low limit is from 0 °C to 15 °C.
- 5) **NOTE: If customer does not want the safety function, no supply air sensor should be installed. The safety limits must be disabled by pressing the **ON/OFF** button once.**

Parameter	
System	Code 00
Number	Z1--Z8
H-limit	60°C
L-limit	5°C
Safety Spill	30%
Turbo	None

6f) Turbo

Using Turbo on a zone will give the zone a full opening while all the other zones's opening positions are reduced by 50%. This will bring extra air into the zone.















- 1) At the setting mode in 'Parameter' screen, press the  or  button to select 'Turbo'.
- 2) Press  and  button to select the zone to have a turbo feature.

Parameter	
System	Code 00
Number	Z1--Z8
H-limit	60°C
L-limit	05°C
Safety Spill	30%
Turbo	Zone 2

6g) Naming zones

It is essential to put correct names against the zones to make sure the end user is fully aware of the location of each zone. **NOTE: do not leave the hand control with just 'Zone1 /Zone 2'. This will result in customer confusion and disappointment with the installation.**

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

- 1) In Setting mode, press  or  button to select 'Naming', and press  button to enter the sub menu of the naming screen.
- 2) Press  or  button to select the zone to be named.
- 3) Press  and  button to select one of the preset zone names for the zone.
- 4) If the user wants to make some changes to the preset name selected, press the  button to initialize the change, and then press  and  button to select the character that is highlighted.
- 5) Then use  and  button to change the character as the user prefers. There are 26 letters, 10 numbers and a space to be selected through this process.
- 6) Press **EXIT** button to exit the change process.
- 7) Press  or  button to select the next zone and follow steps 3) to 6) to customize the name of the zone.

Setting	
Parameter	
Naming	
Balance	
Backlight	ON








Naming	
Zone-1	Zone-1
Zone-2	Zone-2
Zone-3	Zone-3
Zone-4	Zone-4
Zone-5	Zone-5
Zone-6	Zone-6

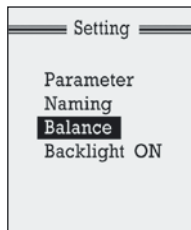
Naming	
Zone-1	Lounge
Zone-2	Family
Zone-3	Zone-3
Zone-4	Zone-4
Zone-5	Zone-5
Zone-6	Zone-6

6h) Balancing zones

The RF UniPoint's Balancing feature offers the flexibility of balancing the amount of airflow to each zone electronically. It works in the same way as a manual metal damper does to balance the airflow for each zone. Once the opening position of the damper is set, the zone will only open to this position. The default setting for each zone is 100% opening position.




The balancing settings can be customized as follows:

- 1) In Setting mode, press  or  button to select the 'Balance', and then the  button to enter the sub menu of the balancing screen.
- 2) Press  or  button to select the zone to be balanced.
- 3) Press  and  button to increase or decrease the percentage of opening positions for the zone.
- 4) Follow step 2) and 3) to adjust the settings for the other zones.



Please note that once the zone is balanced with a percentage opening, it is treated as a complete zone when calculating spilling setpoint. For example, a 5-zone system with a 20% spilling setpoint requires 1 zone open all the time, and these zones in the system could have different balanced positions. This may require a higher % spill level.

6i) Damper on/off test

- 1) Switch on the air conditioner.
- 2) Press  button to enter into zoning screen.
- 3) Press  button to select the zone and use  button to turn the zone on or off to check if the damper is correctly connected by feeling the air at the outlet.

6) Information sheet

The following table is designed to assist installation and commissioning:

ADDRESS	NAME	PARAMETER	VALUE
Zone 1		System Code	
Zone 2		Zone Number	
Zone 3		High Limit	
Zone 4		Low Limit	
Zone 5		Spill/Bypass	
Zone 6		Turbo	
Zone 7			
Zone 8			

7) Troubleshooting guide

PROBLEM	SUGGESTED ACTION
Dampers have no response when turned on or off	<ul style="list-style-type: none">• Check if the LEDs on the main control board light up. If not, check that system codes for handset and main control boards are the same.• Check the cable to the main control board with cable tester.
Some zones cannot be turned off	<ul style="list-style-type: none">• Check if it is spill zone (with lower address)• Check spill setpoint.• Check the battery level of the remote controller
No display on the LCD	<ul style="list-style-type: none">• Check if the battery is flat via indicator icon on screen.• Change to a new set of 3 x AAA battery.

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

8) 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 meters
Operating relative humidity:	10% to 80%
Avoid static electricity hazards	
Avoid electromagnetic radiation sources	
Avoid dust contamination	
Avoid highly corrosive environments	

Zone Output

Output voltage:	24VAC, 50Hz
Current:	500mA (2 damper motors)

Transformer

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

Supply Air Sensor: NTC type, 10 k Ω at 25°C

Battery: 3xAAA 1.5V for remote control



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