Advanced capabilities

The easy zone 4 board has a number of advanced features to improve performance and energy efficiency of the system while providing better control for the user.

Damper parking

The zone dampers will park in the last position when the equipment shuts down ready for the next thermostat call. Should other zone make a call then the easy zone 4 will permit the dampers to move to the correct position before passing the call onto the equipment.

Reversing valve parking

To prevent the decompression hiss associated with a revising valve closing when under pressure. The Easy Zone 4 board will hold the reversing valve on for 2 hours after the last call or until the opposite mode is required.

Damper delay

The easy zone touch will wait for dampers to move to the correct position before the heating or cooling is started. It will also wait for a purge period before changing equipment modes.

Time slicing

If some zone(s) call for heating while other zone(s) call for cooling, the easy zone touch will automatically alternate dampers and equipment modes every 20 minutes to satisfy the needs of all zones. Equipment purge periods and delays will be used.

Equipment Rules

The easy zone touch will prohibit illegal thermostat calls and flash the "SOS" signal on the status LED when any are detected. A table of possible thermostat calls are provided below. Any thermostat making an illegal call will be rejected by the easy zone 4 and that zone only will be locked out. The status LED will blink the "SOS" code. Other zones will function normally.

Thermostat	Mode	Result
G	Fan only	Permitted
W	Heat Only	Permitted in heat cool mode (Sw2=Off)
		Rejected in Heat Pump mode (Sw2=On)
Y	Cool Only	Rejected
W & G	Heat & Fan	Permitted
Y & G	Cool & Fan	Permitted
Y & W	Heat and cool	Rejected
G, Y & W	Fan, cool & heat	Rejected

Note: A standard HEAT COOL thermostat should be used with the easy zone 4 board.

End of manual

Smart Zone 4

Expandable 4 zone board

Installer Manual

Ver 1.0

Overview

The Smart Temp 4 Zone board is a microprocessor based zone control system that when connected to a standard thermostat (one fitted in each zone) will control a heating cooling or air conditioning system and up to 5 zone dampers. 1 damper output for each for the 4 zones plus a bi-pass or spill damper.

As each zone is controlled by a standard wall thermostat you can select a thermostat type that best suits the users' requirements. In this way, the zoning system can be as simple or as power as the user demands.

There has been NO user manual supplied for this product as there are no user selectable parameters and if installed correctly this boards operation should seem transparent to the user.

Installing

Please Note, the SZ-4 zone board only accepts Heat, Cool, Fan inputs from thermostats only. Heat Pump type thermostats are NOT suitable. (A heat pump thermostat calls a compressor for heating and cooling and the reversing valve to determine heating or cooling mode)

To make the Smart Zone 4 board as simple as possible a standard HEAT / COOL thermostat should be used (Y terminal ONLY for cooling & W terminal only for heating).

If controlling Heat Pump Systems turn DIP switch #2 (Heat Pump mode) on the Smart Zone 4 to ON and the SZ-4 will manage the HP logic internally – See DIP table below.

Wiring the Easy Zone 4 is a very simple matter. If you can wire a standard thermostat to a standard heating and cooling system you have the necessary skills to wire the easy zone 4 board.

The table below gives a brief indication of the thermostat wiring between the thermostat and the zone board.

| Thermostat Terminals	Zone Board Terminals
R – 24V active	R – Provides 24v to power thermostat
C – 24V Common	C – 24V common for thermostat
W – Heating	W – Call for heat from thermostat.
Y – Cooling	Y – Call for cool from thermostat.
G – Fan.	G – Call for fan from thermostat
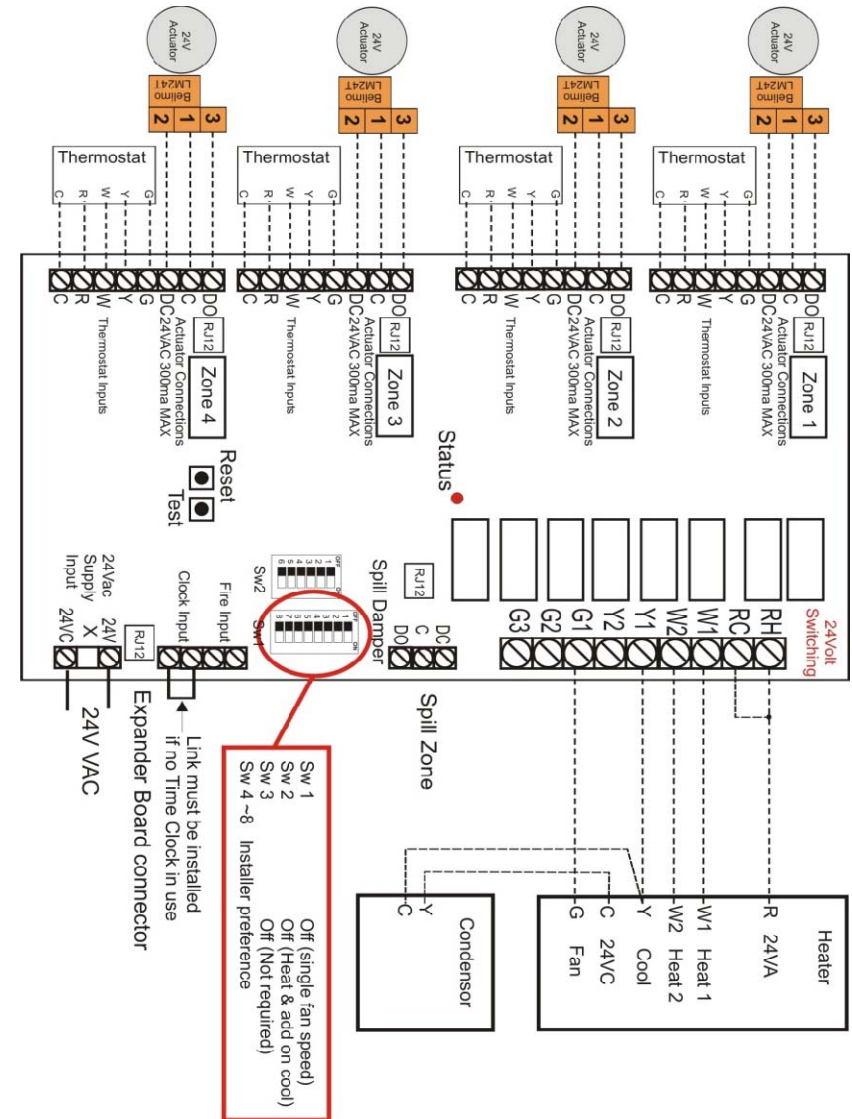
Typical 2 stage gas heating with add on single stage cooling.

This example show a 4 zone system, each zone with one zone damper controlling a 2 stage gas heating system with single stage add on cooling. Note – HEAT COOL thermostats should be used.

A typical single stage single fan heat pump speed system is shown below

This example show a 4 zone system, each zone with one zone damper controlling a single stage heat pump with single speed fan. HEAT COOL thermostats only should be used.
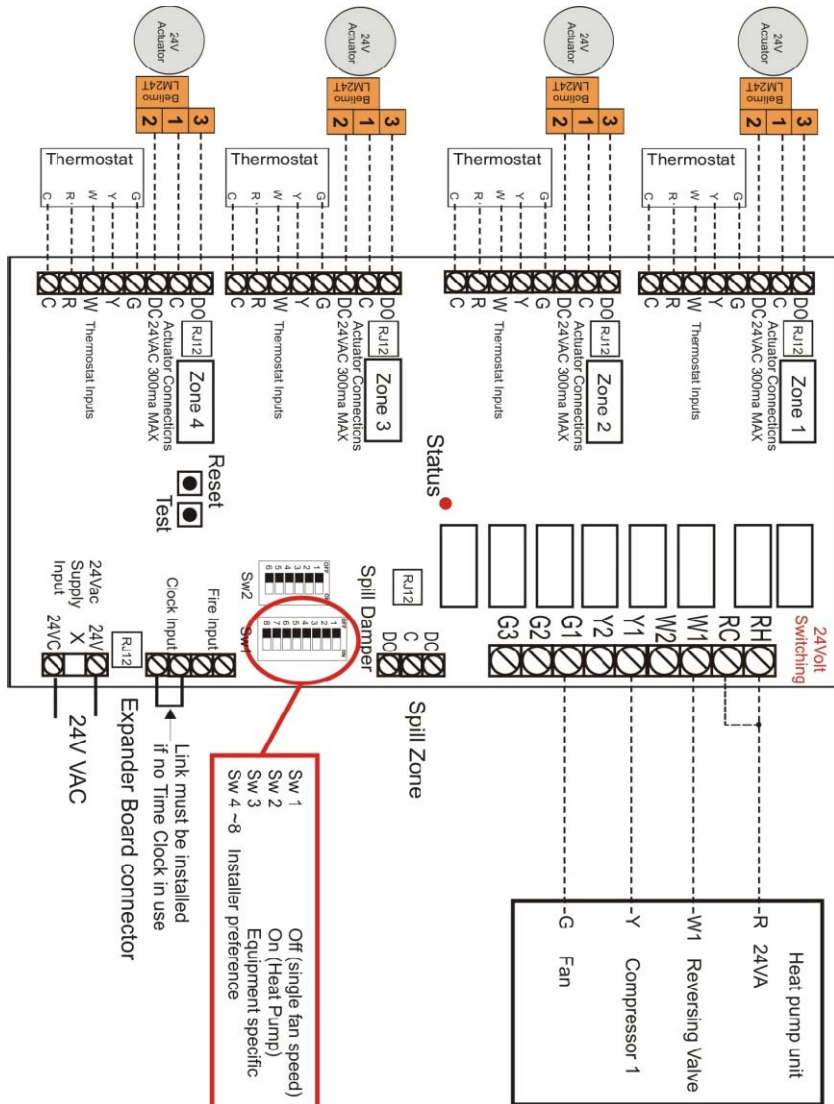
Zone Board wiring.
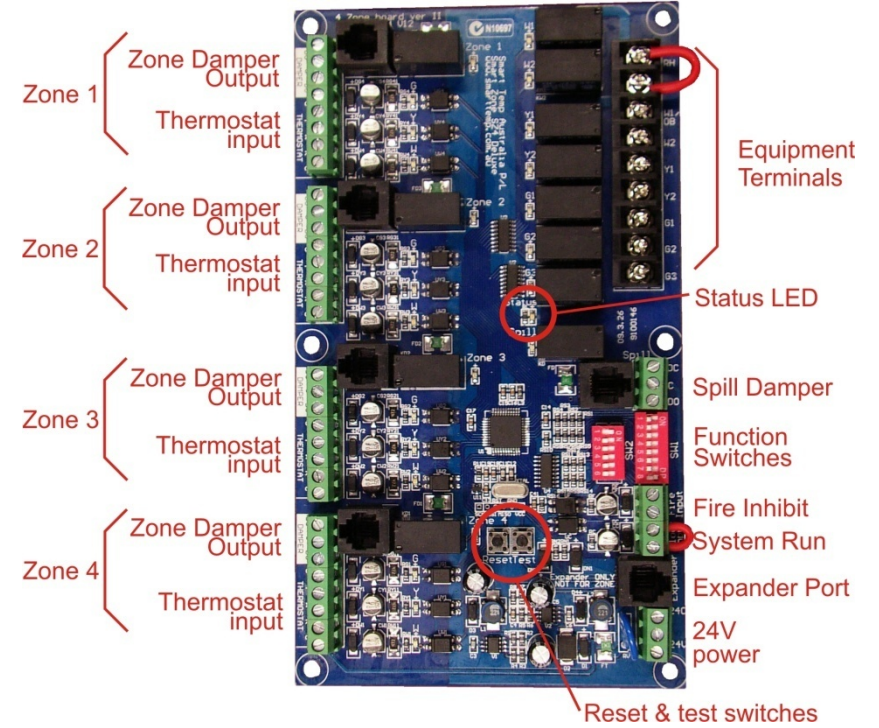
Equipment Terminals.

RC -   Supply for cooling (Y) and fan (G) relay outputs.

RH-   Supply for heat (W) equipment output.

W1 B/O 1st stage heat or reversing valve output.

W2 2nd stage or auxiliary heat output.

Y1 1st stage cooling or compressor 1 output.

Y2 2nd stage cooling or compressor 2 output.

G1   Low fan speed or single fan speed output.

G2   Medium fan speed output.

G3   High fan speed output.

Damper Terminals (Zone and spill)

DO   Drive open – this terminal will provide power to open the damper.

C   Common –this terminal is the damper common.

DC   Drive closed - this terminal will provide power to close the damper.

Thermostat Terminals

R   24V active to power the thermostat.

C   24C power common.

W   Heat call.

Y   Cool call.

G   Fan call.

Fire Inhibit

Closing these two terminals will force the easy zone into fire shutdown. All zones closed and equipment is off – Instantly.

System Run

Turns the easy zone on or off. Dampers are parked in the last position. Open circuit is easy zone off.

Expander Port

Used to connect the easy zone 4 to the easy zone 4 expander boards to increase the number of zones or to add the advanced economy function. See the easy zone 4 expander board manual for information on this capability.

(Maximum number of zones controlled is 24)

LEDS

The easy zone touch has multiple LEDS to indicate various functions.

Each damper has a green LED to indicate when that damper is OPEN.

All thermostat inputs have LEDS to indicate what calls are being made.

Red for heat, green for fan and amber for cooling.

Additionally, the easy zone 4 has a status LED to provide indication on the overall performance of the board. This LED will indicate the following

LED code	Status
Off	NO power / System faulty.
- - - - - - Slow Flash	System OK – Running – Normal.
- - - - - - - - Fast Flash	System Ok – TEST mode.
-- -- -- -- Flash twice then pause	System OK – Time clock inhibit – system off.
---- ---- ---- Flash four times then pause	System OK – Fire input active – system off.
...---...---...--- 3 short 3 long 3 short	Zone input fault (see zone logic below).

DIP Switches

Switch block 1 (8 way switch block)

Sw 1	On – 3 fan Speed	Fan speed set by number of zones calling
		If 1 zone calling Low Speed (G1)
		If 2 zones calling Med Speed (G2)
		If 3+ zone calling High Speed (G3)
	Off – 1 fan speed	Single fan speed only (use G1 output only)
Sw 2	On – Heat Pump Logic	Y1 & Y2 called for heating and cooling
		W1 O/B terminal controls reversing valve
	Off – Heat Cool logic	Y1 & Y2 used for cooling / W1 & W2 used for heating
Sw 3	On – RV in Heat	W1 energise in heat mode
	Off – RV in cool	W1 de-energise in heat mode
Sw 4	On – 6 min cycle	6 min delay once heating cooling stops before restart
	Off – 2 min cycle	2 min delay once heating cooling stops before restart
Sw 5	On – Spill 1 Zone	When only 1 zone or less is on – open spill damper
	Off – Spill 2 Zone	When only 2 zone or less are on – open spill damper
Sw 6	On – 3 + zone	3 or more zones on to activate stage 2
	Off – 2 zone	2 or more zones on to activate stage 2
Sw 7	On – 20 min upstage	Timed zone upstage - 20 mins.
	Off – 10 min upstage	Timed zone upstage - 10 mins.
Sw 8	On – Fast Damper	30 second equipment delay for dampers to open/close.
	Off – Slow Damper	90 second equipment delay for dampers to open/close.

Switch block 2 (6 way switch block)

Sw 1 to Sw5	Used to program number of expander modules connected to the easy zone 4
	See the expander board manual for these switch functions.
	If no expander modules connected – Sw1 to Sw5 MUST BE OFF
Sw 6	On	Zone 1 open disables Spill damper function (large zone)
	Off	Normal spill function

Reset Switch

Press this switch to clear any errors or whenever a DIP switch settings has been changed.

Test Switch

Press and hold this switch until the status LED blinks rapidly. This will speed up all zone board functions by 10, for 15 minutes.