



Smart Zone 4

Expander Board

Suplimentary Manual

Ver 1.0

Overview

The Smart Temp 4 Zone expander board adds to the capability of the Smart Zone 4 Main PCB. This expander board adds an additional 4 zones to the system as well as provide additional energy savings by offering the ability to use roof or outside air to assist heating and cooling. The SZ-4/E does this by comparing return air temperature with outside air and roof temperature and opening a damper to draw in the best air for the function called.

The SZ-4/E 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. The SZ-4 (main board controls the equipment. The SZ-4E passes the zone calls to the main board for equipment calls)

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 powerful 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.

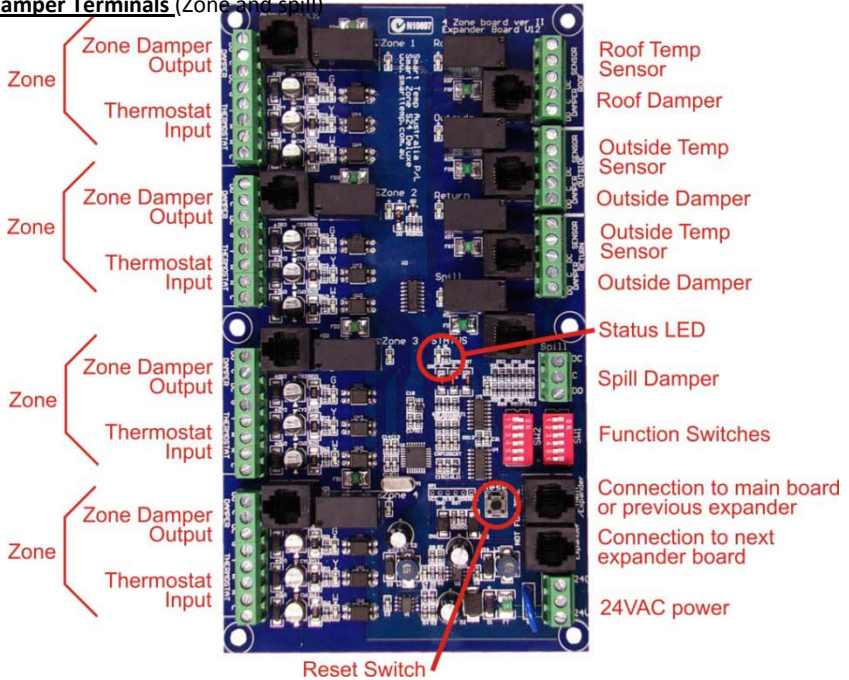
Installing

Please Note, the SZ-4/E 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).

Expander Zone Board wiring.

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.

Expander Ports

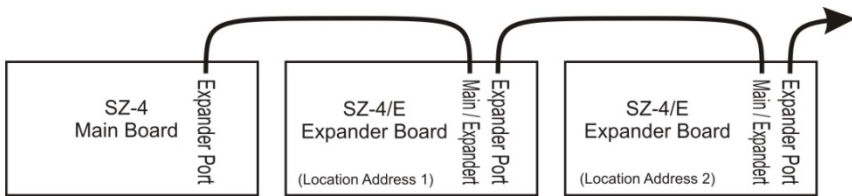
Used to connect the easy zone 4E board to the easy zone 4 main board and editorial expander boards to increase the number of zones to the system. (Maximum number of zones controlled is 24)

Expander port marked “Main / Expander”.

This port is used to connect to the SZ-4 Main board OR to a previous SZ-4E.

Expander Board Marked “Expander”

This port is used to connect to the “next” zone board in the system.



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.
...-...-...- 3 short 3 long 3 short	Zone input fault (see zone logic below).

Additionally, the main board has a status LED that will flash specific codes related to its function that will impact the operation of the expander boards. Fire inhibit for example will suspend all thermostat calls and close all dampers on all boards.

DIP Switches

Switch block 1

Switch	Off	On
1 - 4	Sets when the spill on <u>this</u> board will open based on the total number of zone in the system. It is a binary count. SW1=1, SW2=2, SW3=4, SW4=8. To set the spil to open on this board when 6 or less zone open set 2&4 on.	
5	Outside air function OFF	Outside air function ON
6	Roof heat function OFF	Roof heat function ON

Switch block 2

Switch	Off	On
Sw 1 to Sw5	Used to set the expander board address number. Expander board 1 is address 1 (sw 1=ON), expander board 2 is address 2 (sw2=on) etc	
Sw 6	Reserved - please leave OFF	

Reset Switch

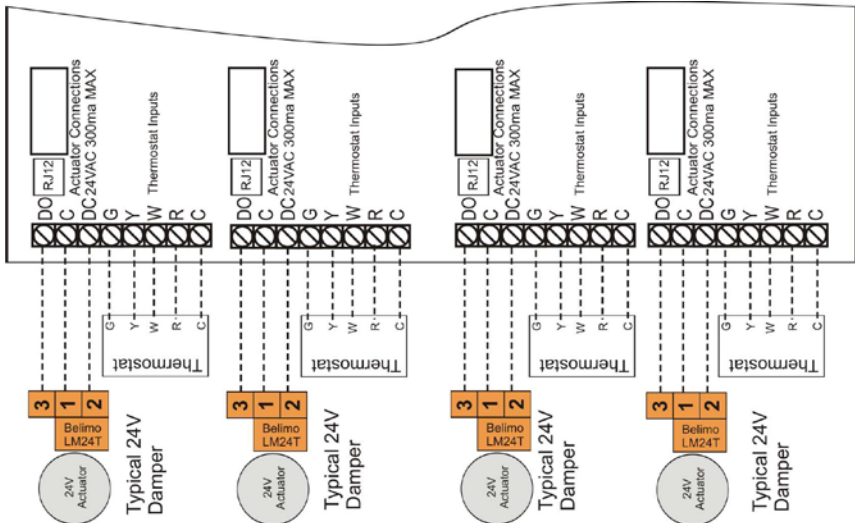
Press this switch to clear any errors or whenever a DIP switch settings has been changed.

Power

If powering multiple boards from a single power supply it is essential that the 24V and 24C polarity is observed on all boards. Swapping these power wires may damage the boards - this damage is not covered under warranty.

Wiring

Please use the SZ4 main manual for instruction on wiring the thermostats and dampers.



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.

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. This delay period is set by the SZ-4 main board.

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 SZ4 and Sz4/E 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 expander board and only that zone making the prohibited call 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 and expander card.

Notes

Great care has been taken in the preparation of this manual. Smart Temp Australia P/L takes no responsibility for errors or omissions contained in this document. It is the responsibility of the user to ensure this thermostat, or the equipment connected to it is operating to their respective specifications and in a safe manner.

Due to ongoing product improvement Smart Temp Australia P/L reserves the right to change the specifications of the SZ4 & SZ-4/E (or its components) without notice.

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