RICKARD

INTELLIGENT COMFORT CONTROL

# MULTI-ZONE BACKOFF

# USER MANUAL





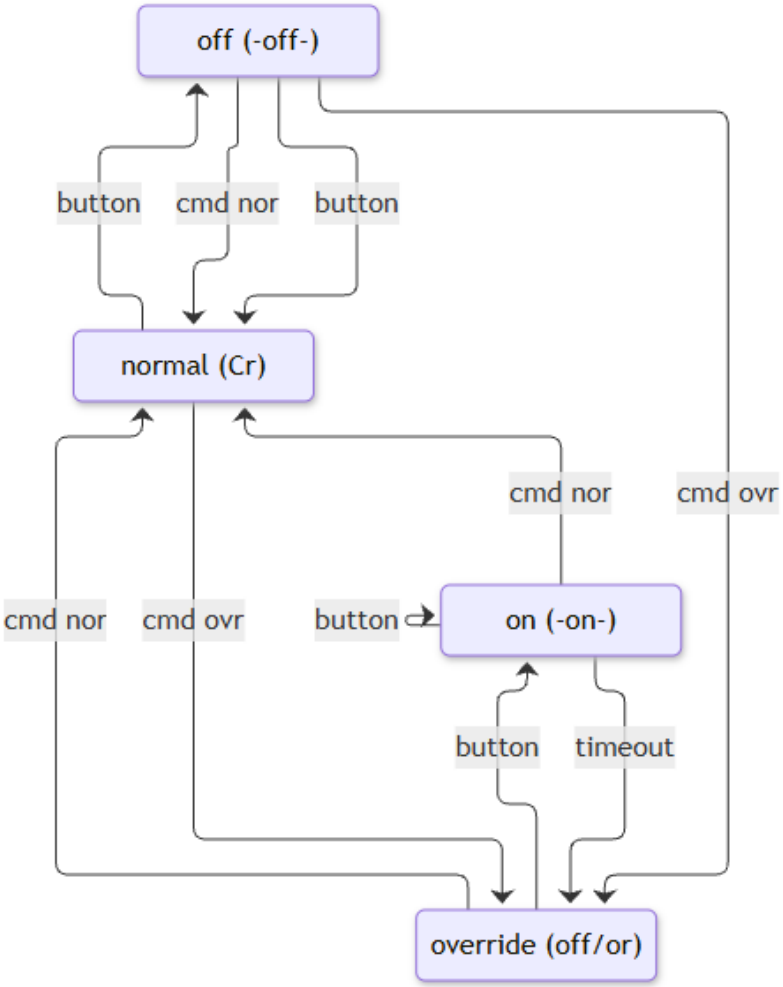

**Description:**

The multi-zone function enables a Fan-Coil Controller (fancoil) to service the air comfort requirements for multiple diffuser zones. The fancoil will respond to the average diffuser room temperature, setpoint and plate position for optimum air temperature and fan speed demand control. This document describes how to set and operate such a multi-zone for backoff operation using a diffuser wallstat button press. Although the focus of this document is on the diffuser zone backoff operation in a BMS/fancoil implementation, it is just as applicable to a BMS/AHU implementation.

Requirements: The following software & firmware or later revisions must be used:

- Mlm Tool – 09.1 update_1
- fancoil firmware – V01.39(.zip)
- Diffuser Wallstat – V04.45(.zip)
- MCU 2 BW2011-2B firmware rev 6.53K

**Operation:** The functional operation can be described at the hand of a State Diagram. A long press on the bottom left wallstat button (Enter button) prompts this operation. The digits indicated in brackets are shown top left on the LCD display, with -xxx- indicating a flashing diplay.



The diffuser zone operates in normal control (Control remote or Cr) mode.

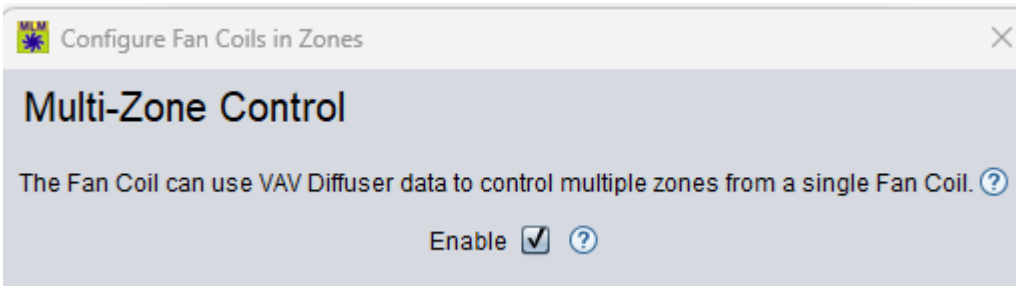
Scenario 1: An Enter button press puts the zone into the '-off-' state (diffuser close). When all the zones serviced by the fancoil are in this '-off-'/'off' state, i.e. each zone wallstat button pressed or an override command received from the BMS, the fancoil will switch off (fan and heating off). An Enter press or a control normal (nor) BMS command will revert the zone(s) and the fancoil to normal operation again.

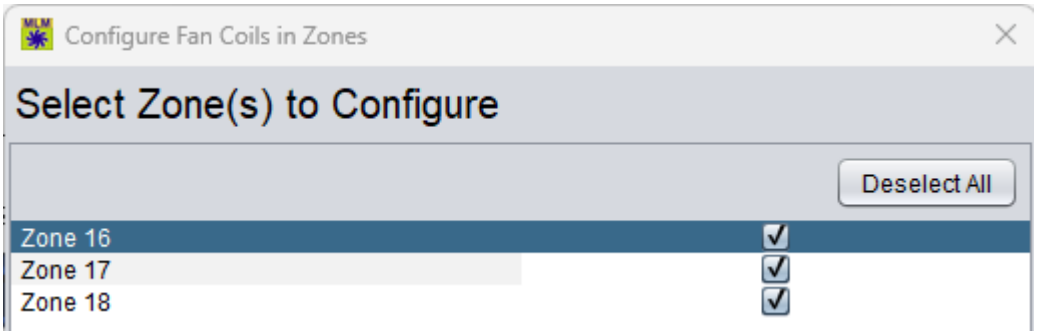
Scenario 2: An 'ovr' (control override) command is received from the BMS. The zone enters the 'off' state. If all zones are in the 'off' state the fancoil will switch off. A button press will put that wallsat zone into the 'on' state and the fancoil (if off) will switch on to service that zone. The preset timer function will now come into effect and once timed out will revert back to the 'off' state. See timer setup function below.

If in any state a control normal command is issued by the BMS to the zone, it will switch that zone and by implication its fancoil on. If in any state a BMS control override command is issued, that zone will revert to the override state. This override state will be displayed as either the 'off' state (diffuser close) or another BMS override command displayed then as 'or'.

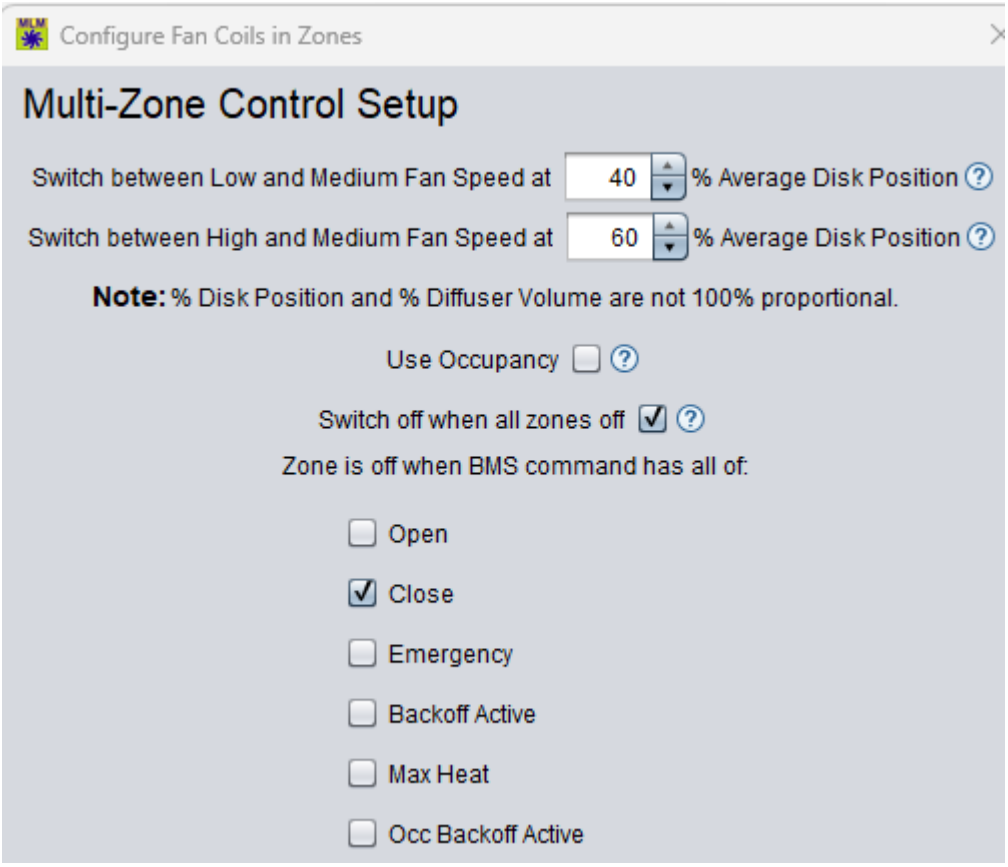
It must be noted that the diffuser zone and fancoil operations are independent. The diffuser zones will react to a BMS command or a button press. The fancoil will respond to the diffuser zone demands, i.e. if one zone is backed off and another still active it will taper back its output to satisfy the single zone. Only when all zones are in backoff will it switch off.

Fancoil setup: Open the mlm Tool and follow the Fancoil setup wizard procedure for multi-zone control.



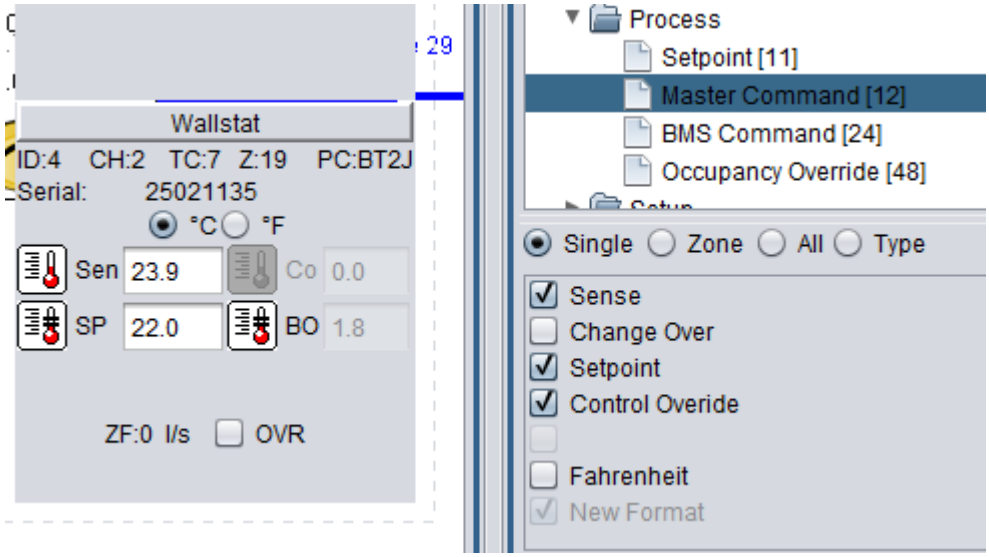
On the Control Setup page select the function ‘Switch off when all zones off’ and tick the ‘Close’ box.




Complete the wizard for the rest of the multi-zone operation.

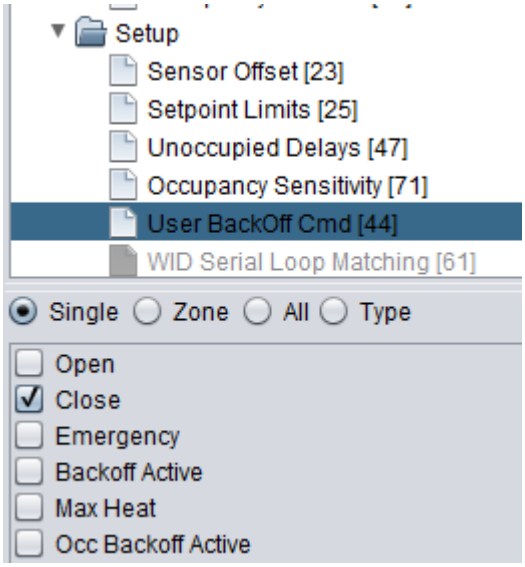
**Diffuser setup:** The following three settings now need to be set on the diffuser (master) wallstat for each zone.

1. Process/Master Command/Control Override



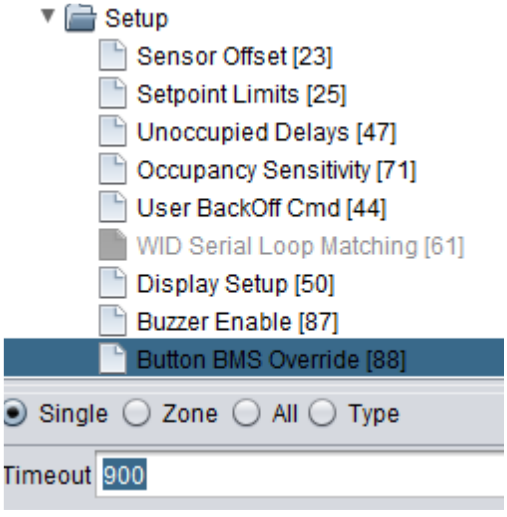
2. Setup User Backoff/ Close

Note the fancoil will only enter the backoff state if the diffuser zones are all set to the same Backoff CMD state as setup in the fancoil wizard. In this instance the fancoil will only listen to and respond to a zone with the same User Backoff CMD setting, i.e. Diffuser Close.




3. Set up Button BMS Override back-on timer.

This function sets the time a zone will stay in back-on before reverting to back-off control. In this example 900 seconds for a 15-minute operation. Note this timer is only in effect when an ‘ovr’ (control override) command was issued by the BMS.




The setup is now complete.