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Distribution: LHA development, Rickard engineering, Rickard support

Topic: Multi-zone Diffuser select

Description: The Multi-zone function enables a Fancoil Controller (FCC) to service the air comfort requirements for multiple diffuser zones. The FCC will respond to the average diffuser room temperature, setpoint and plate position for optimum air temperature and fan speed demand control. This document describes the setup procedure to link multiple fan coil units to an array of diffuser zones.

Requirements:

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

- Mlm Tool – update\_8\_17\_u12
- FCC firmware – V01.33(.zip)
- Fan Coil Wallstat (if applicable) – V08.14
- MCU 2 BW2011-2B firmware rev 6.53K

**Software:** The mlm Tool u12 updater contains a wizard to group the FCC and associated diffusers. It also contains the SDO(89) command to indicate and manually select the diffuser zones to be grouped. Should the mlm Tool updater not be available, the user can load the mlmDataDescriptor.xml file #35 (or later revision) for the SDO command only. See the Configuration Files section in the mlm Tool Help menu.

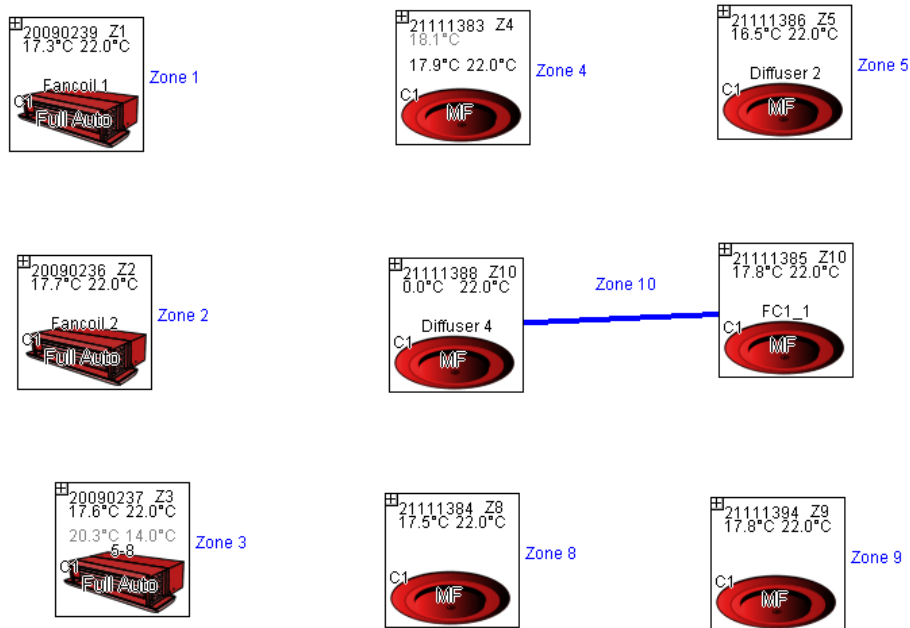
**Hardware:** The multi-zone application allows for a maximum of three FCC units to be networked to twelve diffusers on a single PSU 2 power pack/MCU channel. As such a maximum of 12 FCC and 48 diffusers could be connected per MCU. The PSU 2 port cabling must be split with one port connected to the FCCs and the other to the diffuser network. A maximum of 100m cable length is recommended on the diffuser side port of the PSU and another 60m cable length on the FCC port of the PSU.

This configuration is applicable to any mlm 24 diffuser hardware product, including the use of RF wallstats. A connected Fancoil wallstat will display the average diffuser setpoint and temperatures for monitor purposes only. Note that should a wallstat be connected, the FCC operating mode will be determined by the wallstat settings.

**Diffuser network:** Ensure the mlm network is correctly setup and zoned for normal operation as indicated. It is assumed the user is familiar with setting up the mlm network.

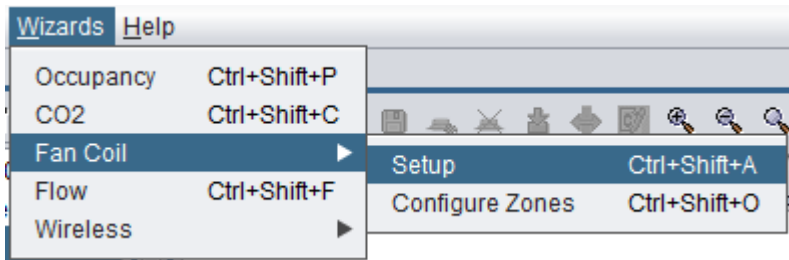
As an example we indicate three FCCs to service five diffuser zones, with each FCC/diffuser section grouped in a single row.

The units are set up as zones 1 through 10, which indicate they are connected to channel 1 on the MCU. If connected to channel 2 the zoning will be from zone 16 to zone 30 etc.

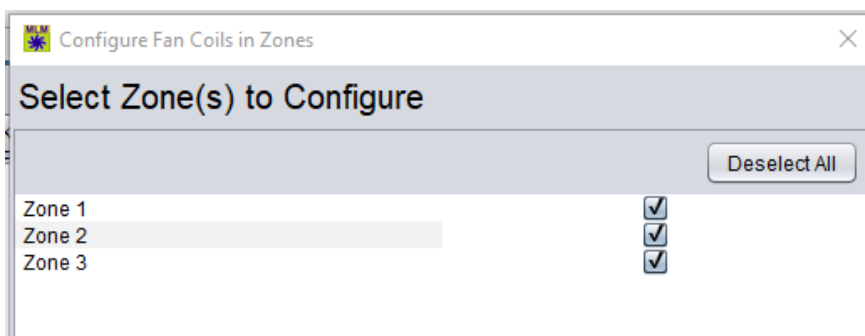


**Multi-zone setup:**

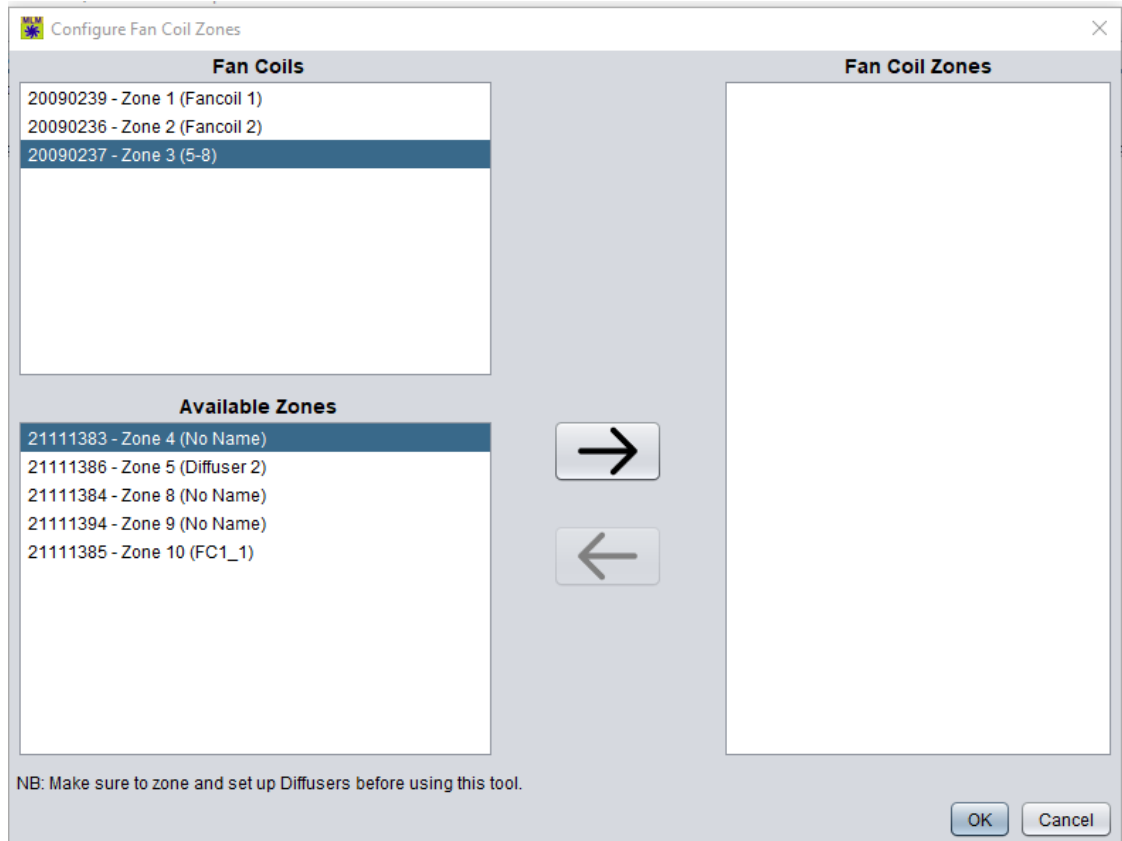
Select the Fan Coil setup wizard:



Select 'Enable' for multi-zone setup and on the next page select the 3 FCC zones to configure.



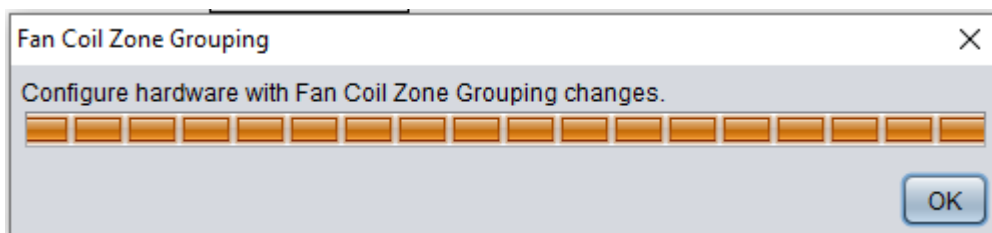
Step through the normal FCC setup pages and press apply. Once the FCCs has been set-up the grouping wizard will open showing the FCCs and available diffuser zones.



First select a FCC and then below that highlight and use the right arrow to group the applicable diffuser zones with that FCC. The left arrow can be used to ungroup. Step through the FCCs.

In our example we will group zone 1 (FCC) with zone 4 & 5, zone 2 with zone 10 and zone 3 with zones 8 & 9.

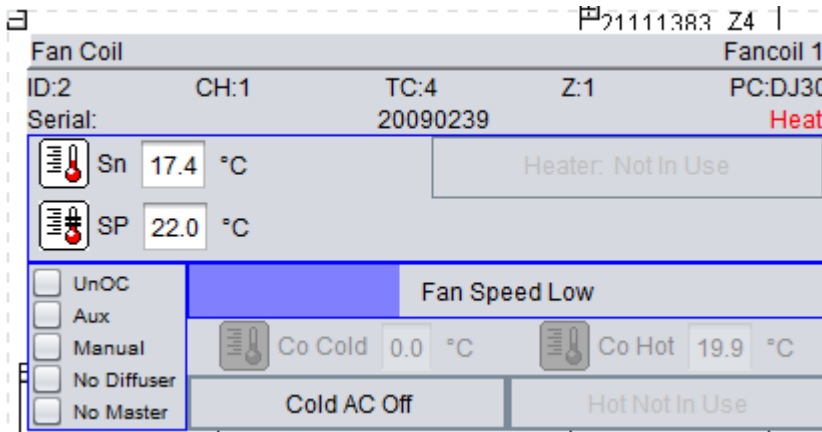
Press OK when done.



The FCCs are now configured for multi-zone operation.



The FCC will now calculate heating and cooling demand from the average zoned diffuser parameters, i.e. room temperature, setpoint and disk position.



To confirm selected zones, go to Setup/Multi-zone Diffuser Select (89) in the FCC node panel. In this instance zone (loop) 4 & 5 are grouped with FCC zone 1. Note the other zones (loops) indicated as selected are not populated, so won't have any influence on the operation. So in effect the function actually shows which zones are excluded for that particular FCC.

