GENERAL

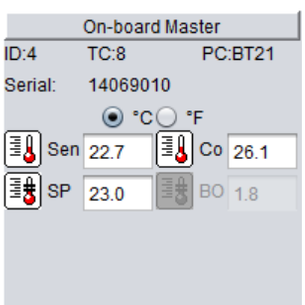
The RICKARD Reversing Changeover facility ensures that the VAV diffuser controls the temperature accurately when the central system is supplying either warm or cold air.

OPERATION

When the system switches from cooling to heating, the changeover sensor detects the increase in supply air temperature and switches the direction in which the actuator operates. This means that when the system is in cooling mode, the diffuser will drive open as the room temperature increases, whereas in the heating mode the diffuser will close as the room temperature increases.

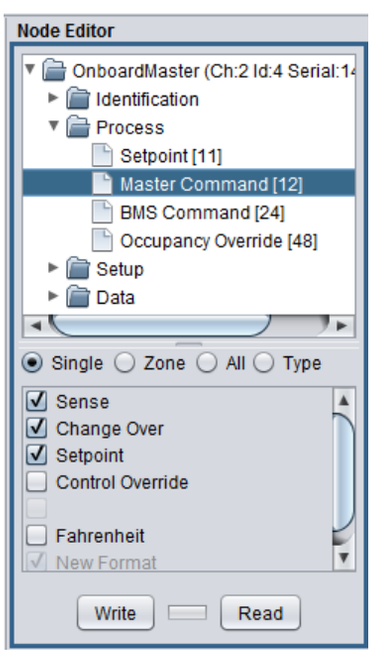
INSTALLATION

Converting a standard RICKARD master diffuser to incorporate changeover functionality is as simple as plugging in the supply air/ changeover temperature sensor and activating it using the software. Every master controller is pre-activated. This temperature sensor must be fitted in such a way that it senses the primary air temperature being supplied to the diffuser.

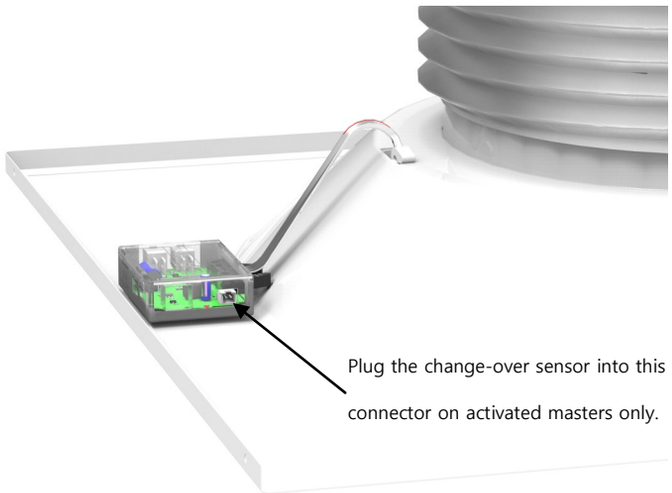


TYPICAL MASTER SETTINGS

Change-over sensing, room sensing and set-point is activated.

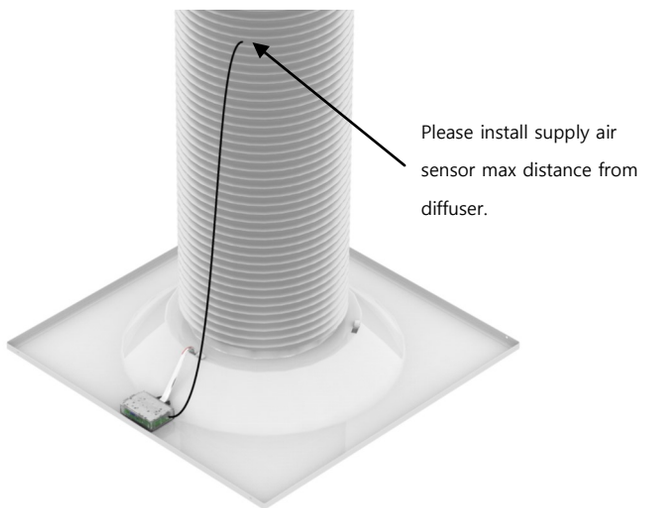


NOTE: Slave diffusers receive a control signal from the master diffuser and therefore do not require nor should they be fitted with a changeover sensor. It is also important that a slaves changeover sensing is turned off on the MLM application. Failure to do so will result in a zone not operating correctly. Only one changeover sensor should be activated per zone i.e. the master.



VCD1 Shown. Use the same connector on other models.

If a re-heater is fitted to the neck of the diffuser, care must be taken to ensure that, the changeover sensor is installed in such a way that it is not affected by radiant heat from the heater. Every changeover sensor is labeled "Please install supply air sensor max distance from diffuser" to ensure this.



VCD1 Shown. Always locate sensor away from heater when fitting to other models.

The controller compares the primary air and room temperature. Whenever the supply air temperature exceeds the room temperature by one degree Celsius, the control action is reversed and switches to heating mode. Cooling mode is re-instated when the primary air temperature falls one degree Celsius below room temperature.

ENERGY EFFICIENCY

Should a VAV air diffusion unit be fitted with a re-heater, the heater will be proportionally energized between 0.5°C and 1.5°C below set-point temperature, regardless of which mode the controller is in. Effectively, a re-heater will only be energized at Minimum Supply Air Status in the cooling mode and at Maximum Supply Air Status when in the heating mode. This control logic is extremely energy efficient from a Green Building perspective.