Solution Sheet 3 - Room Sensors

Key elements to take into consideration when thinking about extending or replacing room/return air sensors (TA).

When ducted units are installed within a ceiling void, without a dedicated return air duct, the return air sensor takes it's data from the air entering the unit, this can be "confused" by the mix of actual return air, (Air withdrawn from the conditioned space) and non conditioned air from within the ceiling void, plus any "Fresh Air" which maybe introduced within the ceiling void.

Under these circumstances the return air (TA) is taking a "Sample" from all three spaces, (Room, Ceiling Void, Fresh Air) example: Room Temperature 22°C Ceiling void 29°C fresh air 10°C the average would be 20.3°C, if the set point at the remote controller was set at 22°C then even though the room temperature is at 22°c, the return air average is still asking the unit to heat!

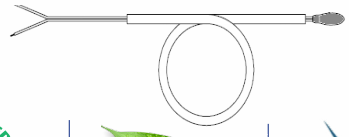
Solutions to the problem;

A) Fit a dedicated return duct with an inlet grille in the conditioned space - Down side "Additional Cost"

B) Change the room sensor location from the unit (Default) to the remote controller, DN Code 32 or on simplified remote, Bit Switch 4 to "ON" - Down side, not suitable if the remote is located outside the conditioned space or the remote is situated in a cupboard or enclosure, or the remote is in direct sun light or an external heat source is in close proximity to the remote.

C) Install a dedicated room sensor Toshiba TCB-TC21LE2, located within the conditioned space away from any external heat sources or in direct sun light - Down side "Additional Cost"

D) Extend the factory fitted return air sensor (TA). Sensors are electrical resistance items, as temperature rises the resistance decreases and visa versa. All electrical cable has an electrical resistance, so adding too long a cable to the sensor will give a combined electrical resistance which in turn will give a false reading to the printed circuit board, the end result is the same as the above, (Room + Ceiling Void + Fresh Air = Average.) - Down side extra cable should be 0.5mm two core up to a maximum length of 10 metres, ideally the maximum length would be up to 5 metres.



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