

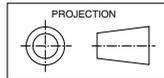
# IMD 420Y, 550Y (c/w EC motor)

## Ducted Fan Coil Units

## Installation & Maintenance

### Dimensions (mm)

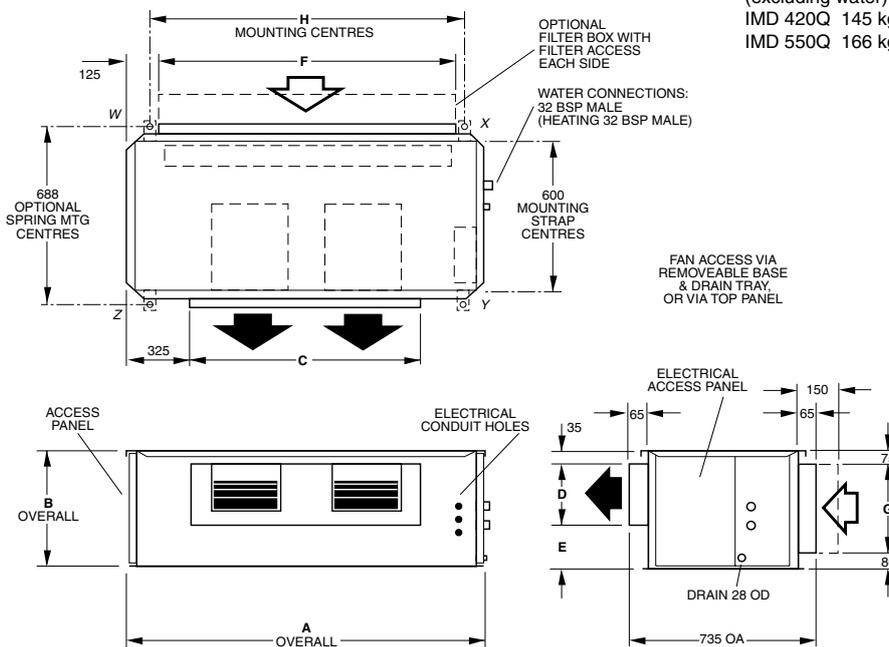
Not to Scale



MODEL	CORNER LOADS (kg)			
	W	X	Y	Z
IMD 420Y	35	42	38	30
IMD 550Y	42	47	37	40

**Net Weight**  
(excluding water)  
IMD 420Q 145 kg  
IMD 550Q 166 kg

Fig. 1



MODEL	A	B	C	D	E	F	G	H
IMD 420	1625	575	975	300	240	1375	425	1518
IMD 550	1680	700	1030	310	355	1430	555	1573

**Note:** The manufacturer reserves the right to change specifications at any time without notice or obligation. Certified dimensions available on request.

### GENERAL

The IMD ducted fan coil units must be installed in accordance with all national and local safety codes.

### Options

1. Filter Box
2. Spring Mounting Kit

### FILTER BOX (Option)

The Filter Box is installed by unscrewing the return air spigot and replacing it with the Filter Box's filter-integrated spigot. The filter may be accessed from either side of this spigot. This new spigot has a depth of 150 mm, instead of 65 mm.

### INSTALLATION

#### Positioning & Mounting

Provide 500 mm minimum clearance to both ends of the unit. If the filter box option is to be used, allow adequate clearance for the filter to be withdrawn to its full length.

If low noise is a critical factor in the installation, refer to Figure 5 for noise isolation recommendations.

It is recommended that the unit be mounted using the spring mounting system, supplied as an optional extra (Fig.2). This system minimises transfer of vibration into the building structure.

If a more rigid installation can be tolerated, then suspend the unit using the four straps supplied, as shown in Figure 3.

Alternatively, holes are supplied in the mounting flange for the use of threaded mounting rods (not supplied).

The unit has a built-in sloping drain tray, therefore mount it level.

### Condensate Drain

The condensate drain should be trapped outside the unit cabinet. The trap should have a vertical height of at least 50 mm. The drain should have a slope of at least 1 in 50 and must not be piped to a level above the unit drain tray. (Refer Fig.4).

For long condensate pipe runs, fit a vent pipe near the drain trap. The top of the vent pipe must be at least 100 mm above the IMD unit's drain tray.

It is essential that the drainage system is checked by pouring water in the drain tray and seeing that it discharges at the end of the drain and does not overflow the drain tray.

**Note:** The built-in drain tray can be removed for cleaning (or fan access) by first removing the unit's base.

Fig. 2 Spring Mounting

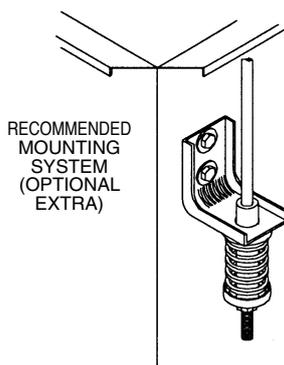
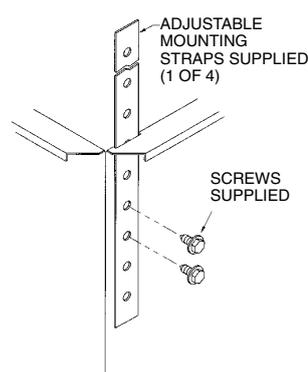


Fig. 3 Strap Mounting



## ELECTRICAL WIRING

The electrical supply required (including voltage fluctuation limits) is:  
1 phase 200-252 V a.c. 50 Hz with neutral and earth. The supply to have an isolation switch adjacent to the unit but not attached to the unit. Recommended external fuse size is 16 amp H.R.C.

Electrical work must be carried out by a qualified electrician in accordance with local supply authority regulations and the wiring diagram.

## FAN SPEED

The indoor fan speed can be 'Stepped' or 'Continuously Variable'. The choice is made using Switch 1 of 'DIP1' on the EC Motor Controller. Switches 1 to 5 on 'DIP2' determine the minimum and maximum fan speeds.

The same 'Minimum rpm' and 'Maximum rpm' settings apply to 'Stepped' and 'Continuously Variable'.

The default settings for DIP1 and DIP2 are highlighted on the Wiring Schematic.

### 1. Stepped (3 Speed)

(DIP1 switch 1 = OFF)

Connecting the 12V power terminal to one (and only one at a time) of the 'L' (Low), 'M' (Med.) or 'H' (High) speed terminals sets a single fan speed.

Connecting the 12V power terminal through a 3 speed switch (not supplied) will allow manual speed selection.

'L' will select the minimum rpm, 'H' will select the maximum rpm, 'M' will select mid-way between the two speeds. The speeds depend on the setting of DIP2. The transitions between speeds are smooth.

### 2. Continuously Variable (0-10V Control)

(DIP1 switch 1=ON)

When using this method a temperzone Analog Signal Isolator (No. 201-000-129) must be fitted and connected as shown in the wiring schematic. 24V AC or DC power from the external (BMS) controller should be provided to the '24V' and '0V' input terminals of the Signal Isolator board.

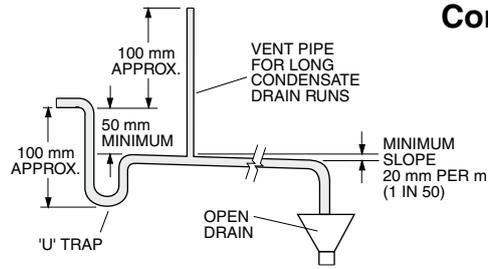
A voltage below 2V DC applied across the '0V' and the '0-10V' input terminals (labelled 'From BMS Controller' in the wiring schematic) of the Signal Isolator will stop the indoor fan. A control voltage of slightly more than 2V will cause the fan to run at the 'Min. rpm' speed. The 'Min. rpm' depends on the setting of DIP2. A 10V DC signal will run the fan at the 'Max. rpm' speed. Control voltages between these two limits can be used to achieve any desired speed between 'Min.' and 'Max.' rpm.

**Do not use switch combinations marked with 'DO NOT USE' in the Speed Selection table.**

If the air returning to the indoor unit is regularly expected to be above 50%RH, then the coil face velocity should be limited to be 2.5 m/s or less (refer Air Handling graph in Technical Data pamphlet).

High humidity levels can occur in tropical or subtropical conditions, and/or when heavily moisture laden fresh air is introduced. Select a fan speed that avoids water carry-over problems.

Fig. 4



## Condensate Drain

## COMMISSIONING

1. Check that the thermostat is correctly wired and set at the desired temperature.
2. Check that the air filter (if fitted) is clean.
3. Check that the fan runs freely without vibration.
4. Check condensate drain for free drainage.

## NOTE

The manufacturer reserves the right to change specifications at any time without notice or obligation. Certified dimensions available on request.

## MAINTENANCE

### Weekly For First Four Weeks

1. Check air filter (if fitted); vacuum clean as necessary.
2. Check condensate drain for free drainage.

### Monthly

Check air filter (if fitted); vacuum clean as necessary.

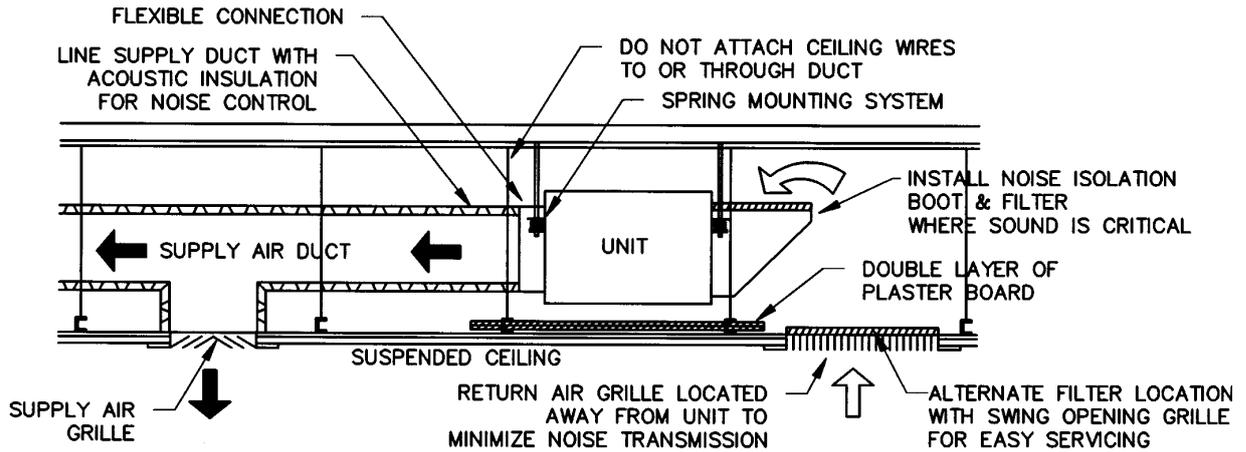
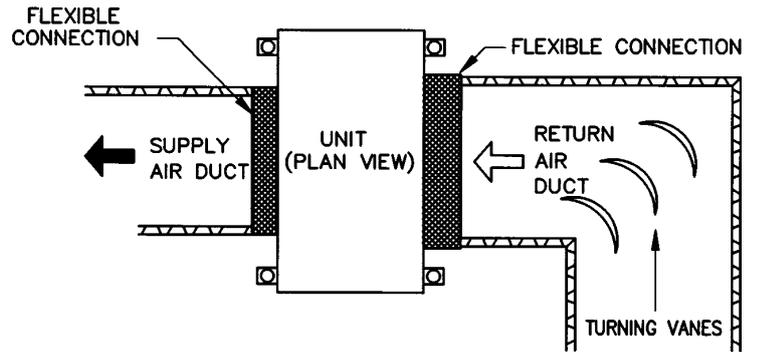
### Six Monthly

1. Check condensate drain for free drainage.
2. Check heat exchanger coil; vacuum or brush clean as necessary.
3. Check the tightness of the fan.
4. Check that fan motor is free running.
5. Check tightness of electrical connections.
6. Check air supply at diffuser outlets.

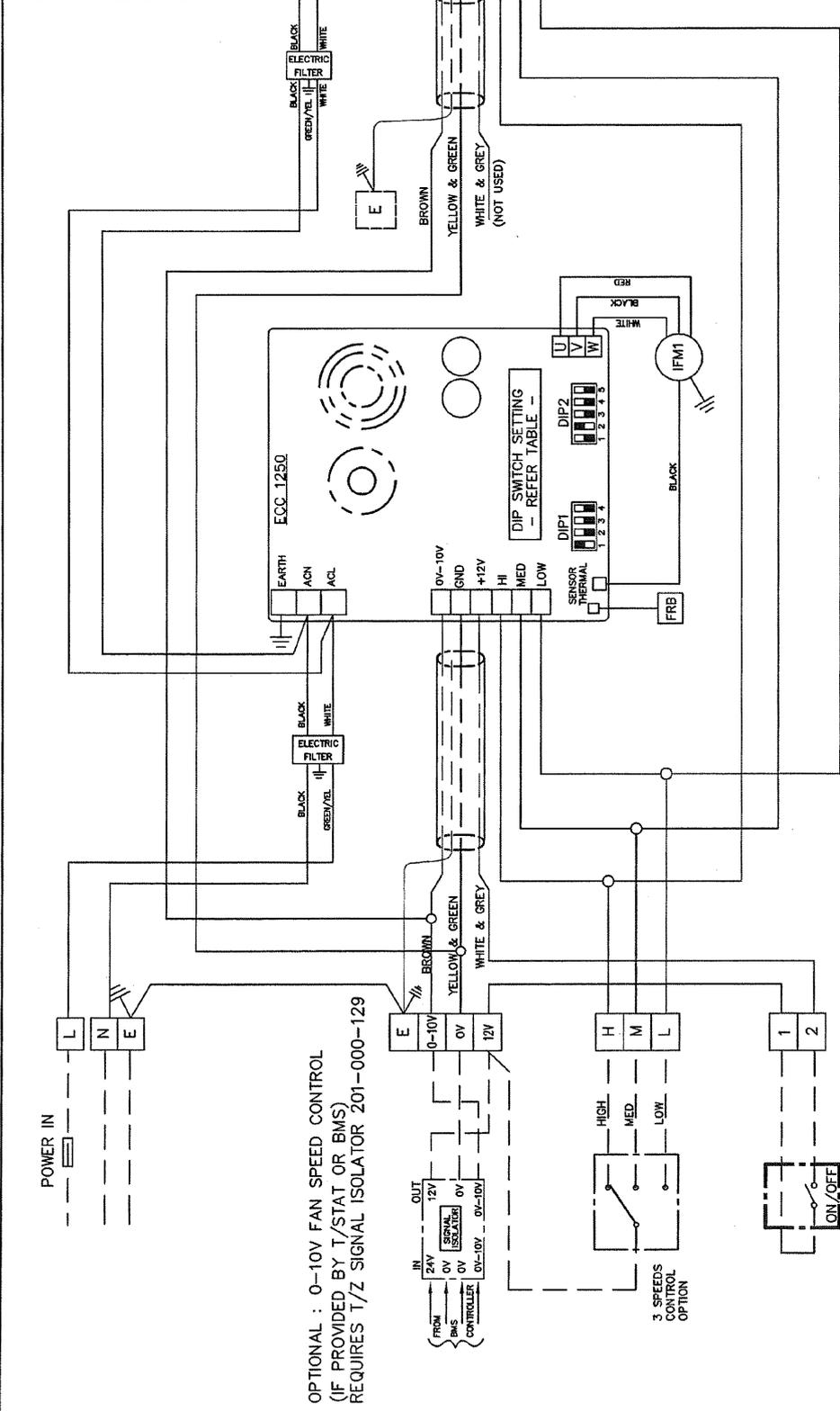
## Fig. 5 Application Considerations

### Recommendations for Noise Isolation - particularly for high static installations:

1. Avoid installing units, with non-ducted return air, directly above spaces where noise is critical.
2. Use flexible connections between unit and rigid ducting.
3. Use generously sized acoustically lined ducts.
4. If generous duct size is not possible, use turning vanes on bends to reduce air turbulence (regenerated noise).
5. Use 90° bends in ducting to significantly assist in noise reduction.



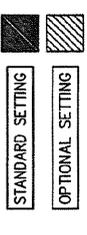
IFM	INDOOR FAN MOTOR
FRB	FAULT RELAY BOARD
MODEL	IMD 420Y, 550Y
VOLTAGE IN	V 230/240
IFM (1.25KW)	AMPS (MAX) 6A/MTR



OPTIONAL : 0-10V FAN SPEED CONTROL  
(IF PROVIDED BY T/STAT OR BMS)  
REQUIRES 1/Z SIGNAL ISOLATOR 201-000-129

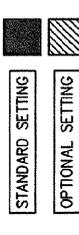
NOTE :  
ON/OFF SWITCH REQUIRED  
FOR BOTH CONTROL OPTIONS.

DIP2 SWITCH SETTINGS



POSITION	OFF	ON
1	RESERVED	RESERVED
2	TURN SWITCH 3 MIN=700 RPM MAX=1200 RPM SPEED RANGE	IFM SPEED MIN=500 RPM MAX=1500 RPM
3	RESERVED	RESERVED
4	RESERVED	RESERVED
5	RESERVED	RESERVED

DIP1 SWITCH SETTINGS



POSITION	OFF	ON
1	3 SPEED FAN HI/Med/Lo	0-10V CONTROL
2	NORMAL FORWARD ACTION	REVERSE ACTION
3	POWER LIMIT 300W	NO POWER LIMIT
4	LEAVE IN THIS POSITION	DO NOT USE

Title: IMD420Y, 550Y  
WIRING SCHEMATIC

Drawn: D.W.H	Date: 23-04-12	Drawing No.: 291-000-103	Revision: A
Scale:	Aprvd:		

ISSUE	MODIFICATION	EDN	DATE	APRVD
A	IMD550Y ADDED TO TITLE			