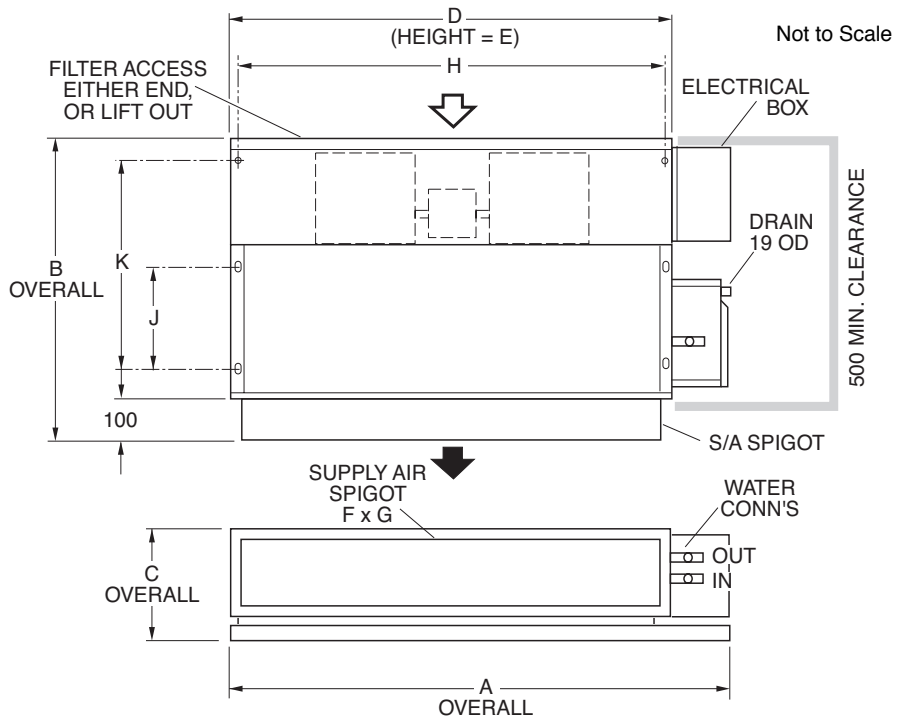
IMDL 40Y, 60Y, 90Y, 130Y (c/w EC motor)

Ducted Fan Coil Units

Installation & Maintenance

Fig. 1 Dimensions (mm)

Right Handed model shown

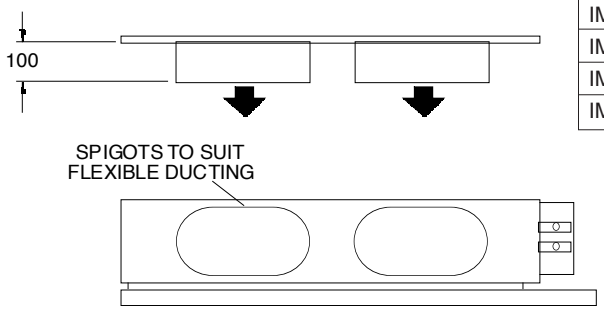


Note:
1. Allow adequate clearance for the filter (if fitted) to be removed.
2. IMDL 130 has two half length filters, 2 motors and 3 fans.
3. Left handed models have drain exit nearer supply air side.

											WATER CONN'S BSP MALE	
MODEL	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**COLD**	**HOT**
IMDL 40Y	685	715	255	550	245	512	170	526	225	470	20	13
IMDL 60Y	940	715	255	795	245	762	170	775	225	470	20	13
IMDL 90Y	1195	750	265	1050	255	1012	179	1026	265	510	25	13
IMDL 130Y	1595	750	265	1455	255	1412	179	1427	265	510	25	13

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

Fig. 2 Optional Supply Air Spigots



MODEL	SPIGOTS
IMDL 40	200 dia (x2)
IMDL 60	250 dia (x2)
IMDL 90	250 dia (x3)
IMDL 130	250 dia (x4)

GENERAL
The IMDL-Y ducted fan coil units must be installed in accordance with all national and local safety codes.

Optional

1. Supply air spigots adaptors (refer Fig.2).
2. Flexible hoses:
   - 13 BSP (1/2") part no. 060-000-270
   - 20 BSP (3/4") part no. 060-000-271
   - 25 BSP (1") part no. 060-000-272.
3. Electric heater elements (factory fitted).

INSTALLATION
Positioning & Mounting
Provide 500 mm minimum clearance to the electrical box end of the unit.

Allow adequate clearance for the filter to be withdrawn to its full length from either end of the unit. Alternatively the filter may be lifted out of its track.

Left handed models have drain exit on supply air side of the drain tray.

Install the unit suspended on threaded rods or bolts and locking nuts (not supplied). Alternatively mount each unit on vibration isolators on a suitable platform.

The unit must be installed level. Use the adjustable support bracket (see figure 3) to lower the drain pipe outlet and provide a slope in the drain tray.

WATER SUPPLY & RETURN
The IMDL unit's IN and OUT water connections are male pipe threaded (refer Fig. 1). **Warning**: overtightening of connections to the main water supply may damage the unit.

It is recommended you use two **temperzone** 600 mm flexible high pressure water hoses. These have female pipe threaded connections at each end. Maximum water pressure for each hose is 1720 kPa (250 psi). The IMDL unit alone, excluding hoses, will withstand 4480 kPa (650 psi).

Poor quality water supply must be pre-filtered and it is essential that adequate water treatment is maintained, particularly where open cooling towers are used.

Condensate Drain
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. Fit a vent pipe within 500 mm of the unit (see Fig.3). Check the drain by pouring water into the drain tray and ensuring that it clears.

ELECTRICAL WIRING
The electrical supply required is:
1 phase 230 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 circuit breaker size is 5 amp; more if electric elements are installed (refer wiring diagram).

A 24V ac externally sourced power connection is required to control the optional electric heater elements via the solid state relay (SSR); refer wiring diagram (page 4).

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

INDOOR FAN SPEED
The indoor fan speed can be 'Stepped' or 'Continuously Variable'.

The maximum and minimum operating speeds are decided by the setting of dip switches on the PCB found in the electrical box.

DIP switches 1 to 3 select the maximum speed/voltage desired to satisfy the design air flow. Factory setting is 8.7V.

DIP switches 4 & 5 are used to select the speed range. The range is the difference between the maximum/voltage and the minimum/voltage. It can be set fairly wide apart or close together. Factory setting is 4.5V.

The combined affect of the factory settings is a range limited to between 4.2V and 8.7V.

1. *Stepped* (*3 Speed)*
   If using a 3 speed selection switch, the medium speed will always be half way between the maximum (High) and minimum (Low) speeds – as selected using the DIP switch 4 & 5 settings.
2. *Continuously Variable (0-10V Control)*
   If using a variable 0–10V dc signal (from the BMS or sophisticated controller) then the DIP switch 4 & 5 settings will limit the maximum and minimum speeds/voltages.
   The fans will not operate until a signal above 1V is received and will then start at the minimum voltage/speed set using DIP switch 4 & 5. The 10V signal input equates to the maximum volts set on DIP swithes 1,2 & 3. Control voltages between these two limits can be used to achieve any desired speed between 'Min.' and 'Max.' rpm.
   With the Factory Settings (refer above) a signal voltage of between 2V and 10V will be limited to proportion the signal to the motor/s between 4.2V and 8.7V.

Note: Only one control method must be connected at any one time; either Stepped 3 speed control **or** Variable 0-10V dc, **not both**.

If the input signal drops below 0.7V DC, the fan will run on either 40 or 120 seconds, dependant on the DIP switch 6 setting, before stopping. **If electric heat is fitted, ensure that DIP switch 6 is set for 120 seconds.**

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.

ELECTRIC HEAT (Option)
Units installed with electric heat elements include both auto (90°C) and manual (120°C) high temp. safety thermostats. If the manual high temp. safety t/stat requires resetting and the auto high temp. safety t/stat does not reset, then the latter needs to be replaced.

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

MAINTENANCE
Weekly For First Four Weeks
1. Check air filter; vacuum clean as necessary.
2. Check condensate drain for free drainage.

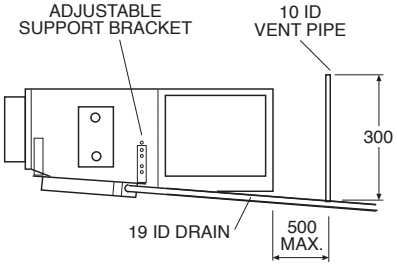
Monthly
Check air filter; vacuum clean as necessary.

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.

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

This pamphlet replaces the previous issue no. 3794 dated 04/16.
Wiring revision E + EH SSR addition.

Fig. 3 Condensate Drain



SIDE VIEW

Standard Unit

ALC DIP Switch Settings

FACTORY SETTING

OFF		OFF	ON	ON
Speed Setting	1	■		Speed Setting
	2	■		
	3		■	
Speed Range	4	■		Speed Range
	5		■	
Without Electric Heat (40s Fan run on)	6	■		With Electric Heat (120s Fan run on)
LEAVE IN THIS POSITION	7	■		DO NOT USE
LEAVE IN THIS POSITION	8	■		DO NOT USE

DIP Switch Settings

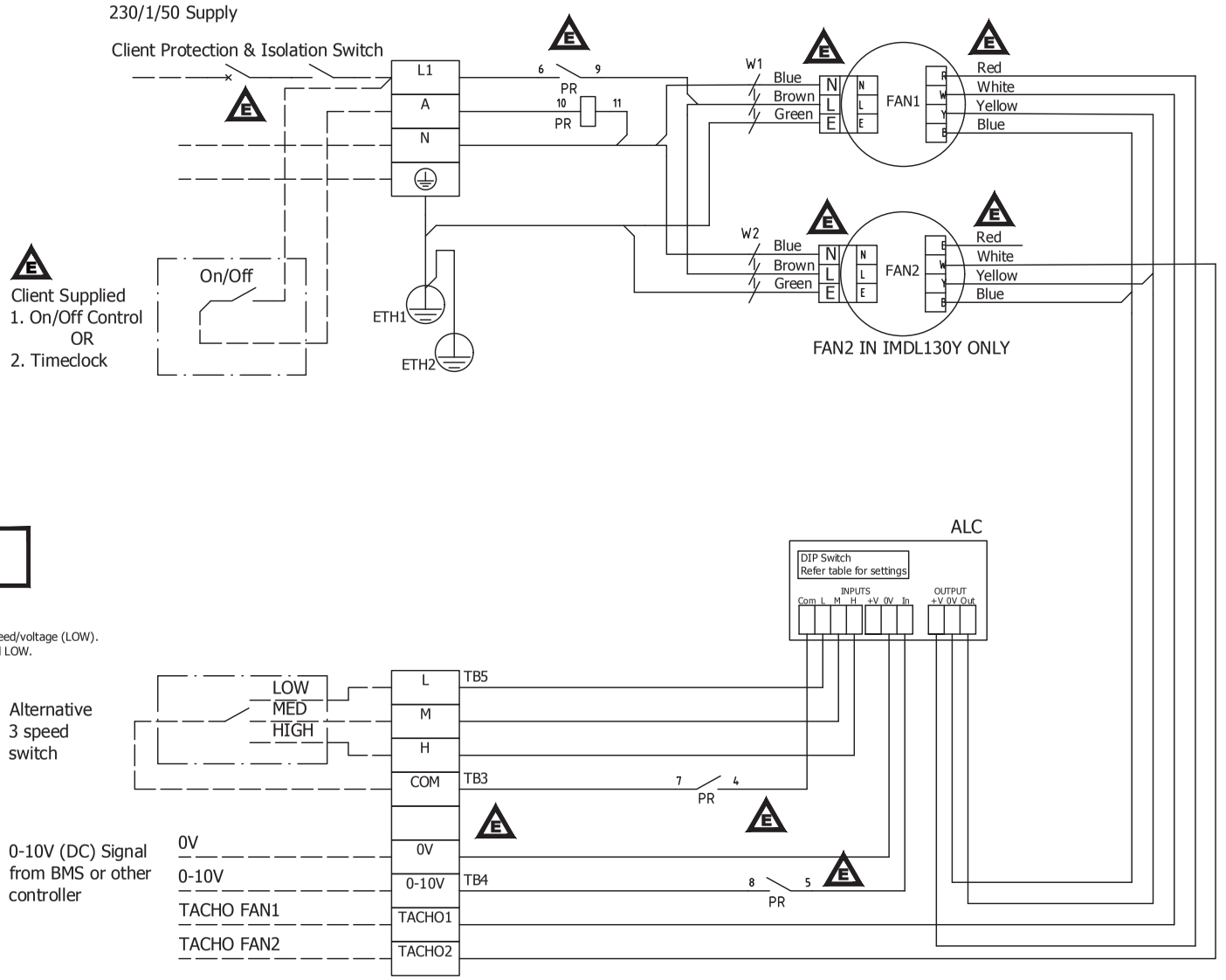
Speed Setting			MAX Vdc	Speed Range		Vdc
1	2	3		4	5	
0	0	0	6.7	0	0	2
1	0	0	7.3	1	0	3
0	1	0	8	0	1	4.5
1	1	0	8.3	1	1	6
0	0	1	8.7			
1	0	1	9			
0	1	1	9.3			
1	1	1	10			

NOTE: Minimum active voltage out limited to 2.2V DC unless off.

Above Speed Setting sets the max. speed/voltage (HIGH).
Above Speed Range sets the difference between the max. speed and the min. speed/voltage (LOW).
With the 3 speed control the medium speed is always halfway between HIGH and LOW.

NOTE: Do NOT connect BOTH 3 speed L/M/H switch and also 0-10V (DC) signal.
Only ONE control method may be connected at a time.
If in doubt ask!

ALC	0-10V Limit Controller
FAN1	Impeller Assembly 146 Diameter
FAN2	Impeller Assembly 146 Diameter
PR	Power Relay



Model	IMDL40Y	IMDL60Y	IMDL90Y	IMDL130Y
Fan full load current (FLA)	1.4A	1.8A	1.8A	3.2A

REV	MODIFICATION	DATE	ECN	APVD
E	Corrected Mains terminal sequence on motors; new control loom (removed terminal joiner); removed 10V DC available	08-09-16	N3897	L.O.L.
E	Removed 10V DC available; Revised note; New relay between Fan and L1, all pin numbers revised	08-09-16	N3897	L.O.L.

temperzone

DO NOT SCALE - ASK

Client Wiring

Drawn: M.A.H. Date: 18/06/2015
Apprvd: SR PCA

Title: IMDL 40Y-130Y Electrical Wiring Schematic

Drawing No: 291-000-896
SHEET 1 OF 1

Rev: E

Standard Unit c/w Electric Heat & SSR