



CHILLED WATER LOW STATIC DUCTED UNIT



INSTALLATION & OPERATION MANUAL

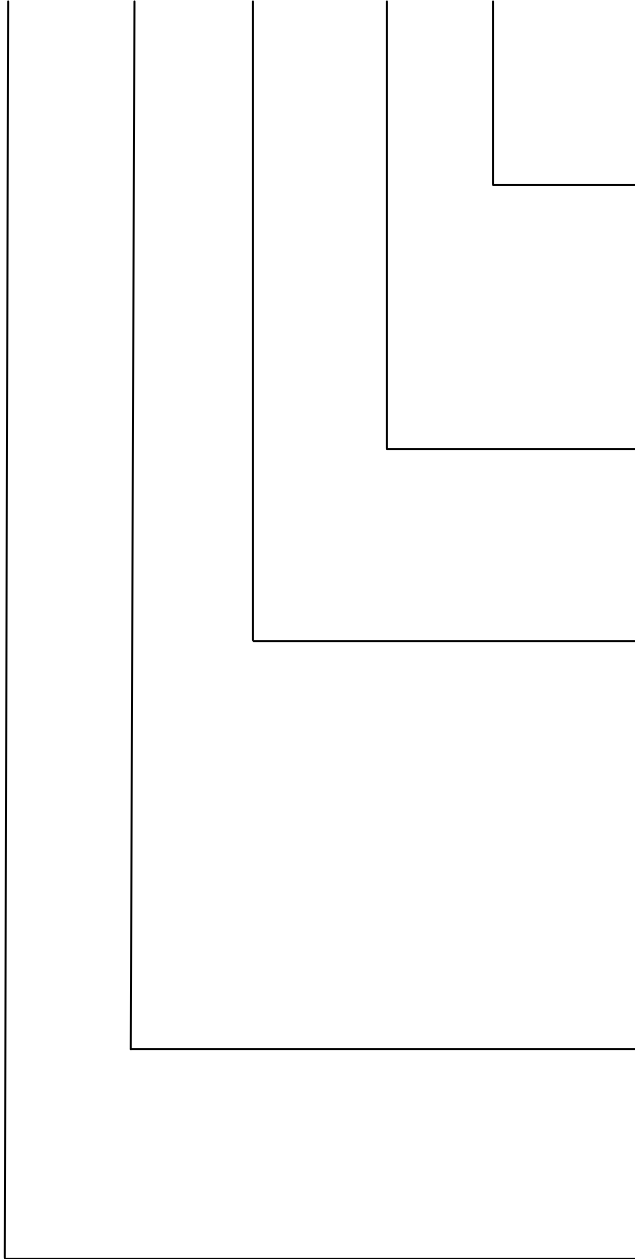
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FCU SERIES CHILLED WATER FAN COIL DUCTED

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NOMENCLATURE

FCU – 30 – AW – 3 – LH



PIPE CONNECTION	
LH	LEFT-HAND DIRECTION
RH	RIGHT-HAND DIRECTION

FACING AIR SUPPLY

ROW OF TUBES	
3	3 ROW (3-ROW 2PIPE)
4	4 ROW (4-ROW 2PIPE)
4	4 ROW (3-ROW+ 1-ROW 4PIPE)

SERIES	
AW	DUCTED CONCEALED

NOMINAL AIR FLOW	
30	NOMINAL 300 CFM
45	NOMINAL 450 CFM
50	NOMINAL 500 CFM
60	NOMINAL 600 CFM
80	NOMINAL 800 CFM
100	NOMINAL 1000 CFM
120	NOMINAL 1200 CFM
130	NOMINAL 1300 CFM
140	NOMINAL 1400 CFM

FCU	LOW STATIC FAN COIL
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GENERAL DESCRIPTION

UNIT FEATURES

Casing, Frame & Coil

The Low Static Ducted unit's casing and frame is fabricated from a tough, heavy gage galvanized steel and contains a standard corrosion resistant coated 3-row coil (with the option of a 4-row coil).

The coil is made from mechanically expanded quality copper tubes, shutter-type, hyperbolic or hydrophilic fins, specially designed for air conditioners with a large heat transfer surface utilizing the latest in fin profile technology.

All coils are subject to leakage-free, 3.3 MPa pressure test and are strictly inspected before they leave the factory ensuring high performance and reliability.

Additionally the unit also comes equipped with a Air Vent Valve, Water Purge Screw, return air plenum with a washable Sahara Net filter and a extended, positive slope drain pan that is removable and is coated with an epoxy finish for easy cleaning to help prevent microbial growth and to fight corrosion. The drain pan is insulated with a form fitted closed cell insulation to prevent condensation build up on the outside of the drain pan.

Units can be ordered with left hand or right hand piping connections (left or right hand is determined by facing the air stream).

Fan & Motor

The Low Static Ducted contains a low noise fan which uses a forward-curved, multi-blade centrifugal fan with double suction impellers made from zinc-plated steel blades that provides the optimum in lower rpm airflow-efficiency.

The High Power Capacitor Type Fan motors are two individual direct drive motors to deliver low noise, high air speed and smooth operation for quiet, comfortable cooling in any environment

Unit Application Scope

It is important to know that in cooling, the water inlet temperature should not be less than 5°C to prevent condensate to accumulate on the coil and in heating, the hot water inlet temperature should not be higher than 80°C to prevent corrosion in the copper pipes of the coil.

Recommended ambient temperatures are as follows:

Cooling : 16°C to 36°C

Heating : 10°C to 30°C

Humidity : ≤ 85%

The unit can only be used for common air conditioning purposes and not in special scenarios and make sure that the unit does not get installed in a damp, corrosive, explosive area or outside.

PERFORMANCE CALCULATIONS

For all your performance calculations, Fan Curves and other technical info please refer to The Eco Aire Selection Program

SPECIFICATIONS

CHILLED WATER DUCTED LOW STATIC FAN COIL (< 50 Pa) NOMINAL

FCU 2-Pipe - 3 & 4 Row Coil

DUCTED - CHILLED WATER FAN COIL UNIT- FCU < 50Pa											
2 PIPE - 3 & 4 ROW											
SPECIFICATIONS											
Model No. Indoor			FCU 30 AW	FCU 50 AW	FCU 60 AW	FCU 80 AW	FCU 100 AW	FCU 120 AW	FCU 140 AW		
Power supply			220V / 1PH / 50Hz								
Performance											
3 ROW	Capacity	Cooling	W	3030	5030	6000	7910	9420	11500	13600	
		Heating	W	2150	3720	4500	5950	7000	8650	10300	
	Noise Level (H / M / L)	Indoor	dB(A)	42 / 40 / 38	47 / 44 / 42	49 / 46 / 44	50 / 47 / 45	52 / 49 / 47	53 / 50 / 48	56 / 53 / 51	
	External Static Pressure (H / M / L)		Pa	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	
	Air Flow Volume (H / M / L)	Cooling	l/s	145 / 111 / 89.6	240 / 180 / 144	287 / 216 / 173	383 / 287 / 230	480 / 372 / 301	575 / 432 / 346	669 / 503 / 402	
		Heating	l/s	113 / 84.7 / 104	199 / 147 / 153	244 / 180 / 179	319 / 238 / 235	394 / 302 / 298	482 / 357 / 346	574 / 425 / 400	
	Water Flow Rate (H / M / L)	Cooling	l/s	144 / 117 / 100	240 / 191 / 160	286 / 228 / 191	377 / 300 / 250	449 / 368 / 311	551 / 439 / 368	649 / 516 / 432	
		Heating	l/s	0.0516 / 0.0407 / 0.0482	0.089 / 0.0969 / 0.0718	108 / 0.0843 / 0.0837	142 / 112 / 111	167 / 135 / 134	207 / 162 / 158	247 / 194 / 184	
	Water Pressure Drop (High)	Cooling	KPa	9.98	29.7	43.7	38.8	19.5	32.1	47.8	
		Heating	KPa	1.41	4.47	6.72	13.2	2.96	4.92	7.47	
4 ROW	Capacity	Cooling	W	3260	5550	6530	8590	10500	12600	14900	
		Heating	W	2220	3950	4760	6190	7390	9130	11000	
	Noise Level (H / M / L)	Indoor	dB(A)	42 / 40 / 38	47 / 44 / 42	49 / 46 / 44	50 / 47 / 45	52 / 49 / 47	53 / 50 / 48	56 / 53 / 51	
	External Static Pressure (H / M / L)		Pa	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	
	Air Flow Volume (H / M / L)	Cooling	l/s	128 / 130 / 117	219 / 196 / 169	265 / 229 / 195	349 / 304 / 258	424 / 376 / 320	527 / 448 / 380	620 / 518 / 436	
		Heating	l/s	97.2 / 100 / 89.3	177 / 158 / 135	219 / 188 / 159	285 / 247 / 209	399 / 300 / 253	431 / 365 / 307	518 / 430 / 359	
	Water Flow Rate (H / M / L)	Cooling	l/s	156 / 159 / 145	265 / 241 / 213	311 / 276 / 241	410 / 365 / 318	500 / 452 / 395	599 / 524 / 457	712 / 614 / 531	
		Heating	l/s	0.0531 / 0.0546 / 0.0494	0.0945 / 0.0858 / 0.075	114 / 100 / 0.0869	148 / 131 / 114	177 / 159 / 138	219 / 190 / 164	263 / 225 / 193	
	Water Pressure Drop (High)	Cooling	KPa	15.2	47.3	30.8	32.5	51.7	22.6	34.1	
		Heating	KPa	1.99	6.62	4.51	4.66	7.13	3.3	5.09	
	Fan Motor	Power	W	30	60	70	45 x 2 (90)	60 x 2 (120)	70 x 2 (140)	80 x 2 (160)	
		Running Current	A	0.38	0.56	0.65	0.48 x 2 (0.96)	0.6 x 2 (1.2)	0.68 x 2 (1.36)	0.78 x 2 (1.56)	
		Motor	Qty	1	1	1	2	2	2	2	
		Scroll	Qty	2	2	2	4	4	4	4	
	Water Coil	Type	Cross Banding Radiating Pipe Aluminium Fin								
		Test Pressure	MPa	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
OD		mm	9.52								
Rows		QTY	3 & 4								
Air Filter Type			Washable Sahara Net Filter								
Pipe Connections		Water In	3/4"								
		Water Out									
		Drain									
Dimensions			W x H x D	877 x 265 x 545	1102 x 265 x 545	1197 x 265 x 545	1482 x 265 x 545	1672 x 265 x 545	1937 x 265 x 545	2172 x 265 x 545	
Weight - Nett			kg	22	23	25	38.9	42.5	48.5	56	

CHILLED WATER DUCTED LOW STATIC FAN COIL (< 50 Pa) NOMINAL

FCU 4-Pipe 3 + 1 Row Coil

DUCTED - CHILLED WATER FAN COIL UNIT - FCU < 50Pa									
4 PIPE - 3 + 1 ROW									
SPECIFICATIONS									
Model No. Indoor			FCU 30 AW	FCU 50 AW	FCU 60 AW	FCU 80 AW	FCU 100 AW	FCU 120 AW	FCU 140 AW
Power supply			220V / 1PH / 50Hz						
Performance									
Capacity	Cooling	W	2500	4350	5280	6840	8090	10100	12100
	Heating	W	1030	1740	2090	2770	3220	3980	4730
Noise Level (H / M / L)	Indoor	dB(A)	42 / 40 / 38	47 / 44 / 42	49 / 46 / 44	50 / 47 / 45	52 / 49 / 47	53 / 50 / 48	56 / 53 / 51
External Static Pressure (H / M / L)		Pa	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40	50 / 50 / 40
Air Flow Volume (H / M / L)	Cooling	l/s	114 / 85.4 / 105	200 / 148 / 154	244 / 181 / 180	319 / 240 / 236	395 / 303 / 299	483 / 359 / 384	575 / 427 / 402
	Heating	l/s	114 / 85.4 / 105	200 / 148 / 154	244 / 181 / 180	319 / 240 / 236	395 / 303 / 299	483 / 359 / 384	575 / 427 / 402
Water Flow Rate (H / M / L)	Cooling	l/s	0.119 / 0.0944 / 0.111	0.207 / 0.163 / 0.168	0.252 / 0.198 / 0.196	0.326 / 0.259 / 0.256	0.386 / 0.313 / 0.309	0.48 / 0.378 / 0.369	0.575 / 0.453 / 0.432
	Heating	l/s	0.0246 / 0.020 / 0.0232	0.0417 / 0.0336 / 0.0345	0.05 / 0.0404 / 0.0401	0.0663 / 0.0537 / 0.0532	0.077 / 0.0637 / 0.0631	0.0951 / 0.0768 / 0.0751	0.113 / 0.0914 / 0.0875
Water Pressure Drop	Cooling	KPa	7.18	23.1	35	30.2	15	25.3	38.8
	Heating	KPa	2.53	7.83	11.7	23.1	5.06	8.46	12.8
Fan Motor	Power	W	30	60	70	45 x 2 (90)	60 x 2 (120)	70 x 2 (140)	80 x 2 (160)
	Running Current	A	0.38	0.56	0.65	0.48 x 2 (0.96)	0.6 x 2 (1.2)	0.68 x 2 (1.36)	0.78 x 2 (1.56)
	Motor	Qty	1	1	1	2	2	2	2
	Scroll	Qty	2	2	2	4	4	4	4
Water Coil	Type		Cross Banding Radiating Pipe Aluminium Fin						
	Test Pressure	MPa	2	2	2	2	2	2	2
	OD	mm	9.52						
	Rows	QTY	3 + 1						
Air Filter Type			Washable Sahara Net Filter						
Pipe Connections	Water In		3/4"						
	Water Out								
	Drain								
Dimensions	W x H x D		877 x 265 x 545	1102 x 265 x 545	1197 x 265 x 545	1482 x 265 x 545	1672 x 265 x 545	1937 x 265 x 545	2170 x 265 x 545
Weight - Nett	kg		22	23	25	38.9	42.5	48.5	56

COOLING CAPACITY BASED ON ENTERING AIR TEMPERATURE AT 27°C DB/19°C WB AND

ENTERING WATER TEMPERATURE 7°C LEAVING WATER TEMP 12°C

HEATING CAPACITY BASED ON ENTERING AIR TEMPERATURE AT 20°C DB AND

ENTERING WATER TEMP. 60°C WITH THE SAME AMOUNT OF WATER FLOW AS COOLING

AIR FLOW: UNDER DRY COIL CONDITIONS, HIGH FAN SPEED, STATIC PRESSURE AIR FLOW EXCLUDES FILTER

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

COIL DATA

CHILLED WATER DUCTED LOW STATIC FAN COIL (< 50 Pa) NOMINAL

FCU 2-Pipe - 3 Row Coil

Model	Fin height (mm)	Fin Length (mm)	Fins per Inch	No. of Rows	No. of Circuits	Tube Ø (mm)
FCU-30	203	585	11	3	3	9.52
FCU-50	203	810	11	3	3	9.52
FCU-60	203	905	11	3	3	9.52
FCU-80	203	1,165	11	3	4	9.52
FCU-100	203	1,355	11	3	6	9.52
FCU-120	203	1,620	11	3	6	9.52
FCU-140	203	1,855	11	3	6	9.52

FCU 2-Pipe - 4 Row Coil

Model	Fin height (mm)	Fin Length (mm)	Fins per Inch	No. of Rows	No. of Circuits	Tube Ø (mm)
FCU-30	203	585	11	4	3	9.52
FCU-50	203	810	11	4	3	9.52
FCU-60	203	905	11	4	3	9.52
FCU-80	203	1,165	11	4	4	9.52
FCU-100	203	1,355	11	4	6	9.52
FCU-120	203	1,620	11	4	6	9.52
FCU-140	203	1,855	11	4	6	9.52

FCU 4-Pipe - 3 + 1 Row Coil

Model	Fin height (mm)	Fin Length (mm)	Fins per Inch	No. of Rows	No. of Circuits	Tube Ø (mm)
FCU-30	203	585	11	3 + 1	3 + 1	9.52
FCU-50	203	810	11	3 + 1	3 + 1	9.52
FCU-60	203	905	11	3 + 1	3 + 1	9.52
FCU-80	203	1,165	11	3 + 1	4 + 1	9.52
FCU-100	203	1,355	11	3 + 1	6 + 2	9.52
FCU-120	203	1,620	11	3 + 1	6 + 2	9.52
FCU-140	203	1,855	11	3 + 1	6 + 2	9.52

MOTOR ELECTRICAL CHARACTERISTICS (220V-240V / 1 PH / 50HZ)

CHILLED WATER DUCTED LOW STATIC FAN COIL (< 50 Pa) NOMINAL

MODEL	FCU-30	FCU-50	FCU-60	FCU-80	FCU-100	FCU-120	FCU-140
Rated Power Input (W)	30	60	70	45 x 2 (90)	60 x 2 (120)	70 x 2 (140)	80 x 2 (160)
Running Current (A)	0.38	0.56	0.65	0.48 x 2 (0.96)	0.60 x 2 (1.2)	0.68 x 2 (1.36)	0.78 x 2 (1.56)

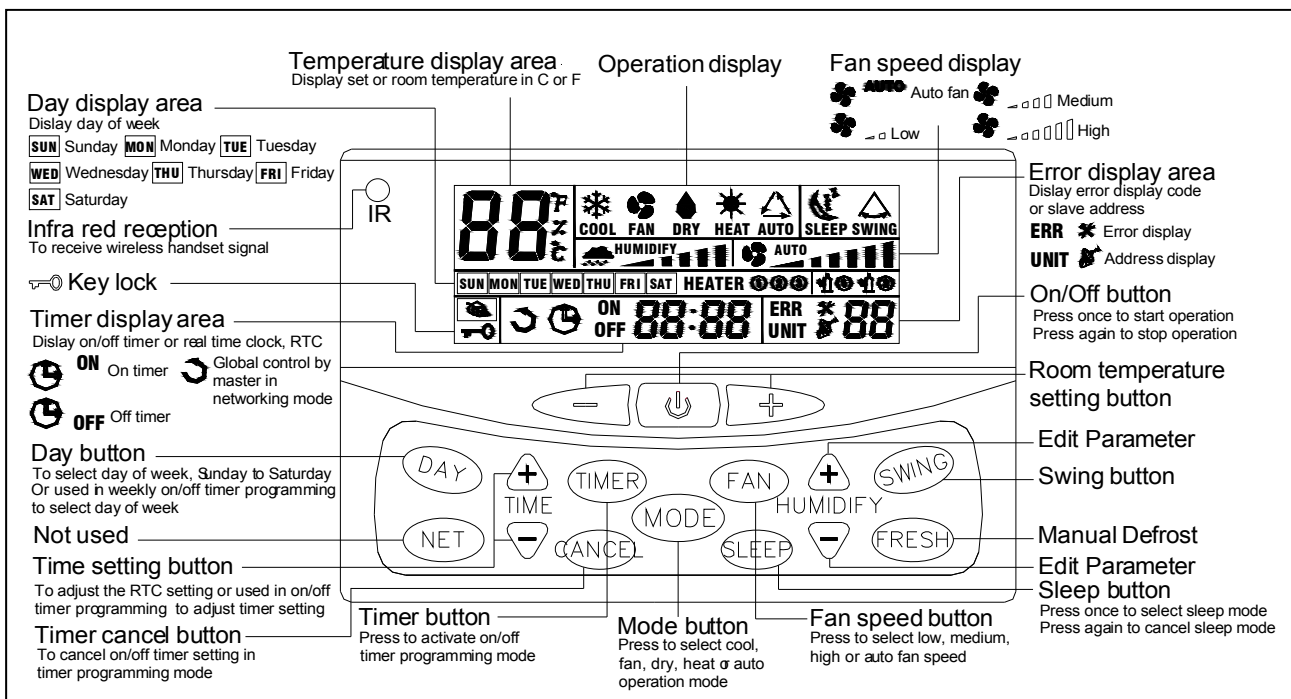
WALL PAD MICRO PROCESSOR THERMOSTAT

The 3 speed fan motor is controlled with a wall mounted controller to modulate cooling output and to maximize the percentage of latent heat removal, and to further reduce the sound level when cooling performance is required.

Main features:

- ~ Large LCD, Luxurious appearance
- ~ Microprocessor based
- ~ Reliable separate power unit
- ~ Dual display of room temperature and set temperature
- ~ Time display
- ~ Heating / cooling / ventilating modes adjustable
- ~ Adjustable High/medium/low fan speed and dynamic fan speed display
- ~ Backlight

Button Description



LCD Wall Pad Operation Guide

1) Real Time Clock [RTC]

The system has an in built RTC for clock display and On/Off timer control. Normally the RTC display section shows the system RTC. This setting can be changed by pressing < Time+/- > button.

2) Day

The system has day display function [Monday-Sunday] used for day of week display and On/Off timer control. Press < Day > button to change the day setting.

3) On/Off Timer

System has 7 sets of on/off timer setting [1 on and 1 off per day]. It can be used to program the weekly on/off timer setting.

- a) Press < Timer > button once, Timer and On symbol flash indicating that it is now in on timer programming mode. Day display section shows the day of week to be programmed. If RTC display section shows -- : --, Means that the on timer for this day is not activated yet. Press < Time+/- > button to adjust the on timer setting and at the same time activates the on timer for this day. Press < Cancel > button will cancel the timer being programmed and RTC shows -- : --. Press < Day > button to select different day of week to be programmed.
- b) Press < Timer > button once more, Timer and Off symbol flash indicating that it is now in off timer programming mode. Repeat step a) for the desire off timer setting.
- c) Press < Timer > button once more will exit from on/off timer programming mode. System will now show the RTC setting.
- d) Whenever there is any on/off timer being activated, Timer symbol will light up. Should there be any unexecuted On/Off timer for the current day, its corresponding On or Off symbol will light up as well.

4) Key Lock

In order to prevent mischief by unauthorized personnel, system has built in key lock function. Hold down < Temp Up > and < Temp Down > button for 3 seconds will activate the key lock function and its corresponding symbol will light up. Repeat the same steps to cancel the key lock function. Only 《On/Off》 button is valid.

5) Temperature

Normally the temperature display section will show the room air temperature. Press < Temp Up > or < Temp Down > button to change the temperature setting. Temperature display section flashes showing the current temperature setting. Press < Temp Up > or < Temp Down > button once more to adjust the setting.

6) Mode

Press < Mode > button to change the mode setting.

7) Fan

Press 〈 Fan 〉 button to change the fan speed setting. [Only low speed is available in Dry mode]

8) On/Off

Press 〈 On/Off 〉 button to turn on or off the system.

9) Manual Defrost

Hold down 〈 Fresh 〉 button for 3 sec will enable the system go into defrost provided the defrost conditions are satisfied.

10) Parameter Browsing

Hold down 〈 Cancel 〉 and 〈 Fan 〉 buttons to enter into parameter browsing mode. Press 〈 Humidify+ 〉 or 〈 Humidify- 〉 button to browse the following parameters:-

Error display section	RTC section	Remarks
C0	Outdoor air temp	
C1	Room temp	
C2	System 1 indoor coil temp	
C3	System 1 outdoor coil temp	
C4	System 1 discharge temp	
C5	System 1 running ampere	
C6	Comp 1 cumulated run time	
C7	System 2 indoor coil temp	Invalid in single stage
C8	System 2 outdoor coil temp	Invalid in single stage
C9	System 2 discharge temp	Invalid in single stage
CA	System 2 running ampere	Invalid in single stage
Cb	Comp 2 cumulated run time	Invalid in single stage

Press 〈 Cancel 〉 button to exit.

11) Edit Parameter

Hold down 〈 Cancel 〉 and 〈 Sleep 〉 buttons, RTC display section shows 0--- asking for password entry. Press 〈 On/Off 〉 button to change the digit to edit. Press 〈 Temp Up 〉 or 〈 Temp Down 〉 to change the number of selected digit. Upon entering of correct password 8699, press 〈 Fresh 〉 button to confirm. RTC shows "rEAd" indicating the wall pad is retrieving the parameters from main board. Press 〈 Cancel 〉 button to exit.

Error display section	RTC section	Remarks
d0	Defrost termination time	
d1	Defrost differential temp	
d2	Low fan activated temp	In heat mode
d3	Defrost termination temp	
d4	Defrost decision temp	

Press 〈 Humidify+ 〉 or 〈 Humidify- 〉 button to select the item to edit.

Press 〈 Temp Up 〉 or 〈 Temp Down 〉 button to change the setting of selected item.

Upon completion of editing, press 〈 Fresh 〉 to exit and save the setting on the main board.

Press 《 Cancel 》 to exit without saving the setting.

12) Error Display

Whenever there is system fault, error display section will show the error code and backlight will change to red colour. If multiple faults happen at the same time, the corresponding error code will be shown one after another.

Error code	Remarks
1	Room sensor
2	Valve
3	Water pump
4	Indoor and outdoor communication
5	Reserved
6	Wall pad and indoor communication
8	
9	System 1 indoor coil sensor
10	System 2 indoor coil sensor
11	System 1 outdoor coil sensor
12	System 2 outdoor coil sensor
13	System 1 discharge sensor
14	System 2 discharge sensor
15	Outdoor air sensor
17	System 1 comp overload
18	System 2 comp overload
19	System 1 4 way valve
20	System 2 4 way valve
21	System 1 filter check
22	System 2 filter check
23	Reserved
24	Reserved
25	System 1 phase loss
26	System 2 phase loss
27	System 1 phase reversal
28	System 2 phase reversal
29	System 1 low pressure
30	System 2 low pressure
31	System 1 high pressure
32	System 2 high pressure
33	System 1 over current
34	System 2 over current
35	System 1 external interlock
36	System 2 external interlock
37	SW1 contact failure

13) Hold down 〈 Humidify+ 〉 and 〈 Humidify- 〉 button for 3 seconds within 1 minute upon power up will enter into hardware test mode. Wall pad will light up all symbols and it can activate the main board hardware test mode. It will exit from this mode 1 minute later.

14) Should there be no key press within 1 minute, the system will exit from any of its current menu to normal display mode.

INSTALLATION OF FAN COIL DUCTED UNIT

1) Location

Before installation and running the unit, please confirm the following:

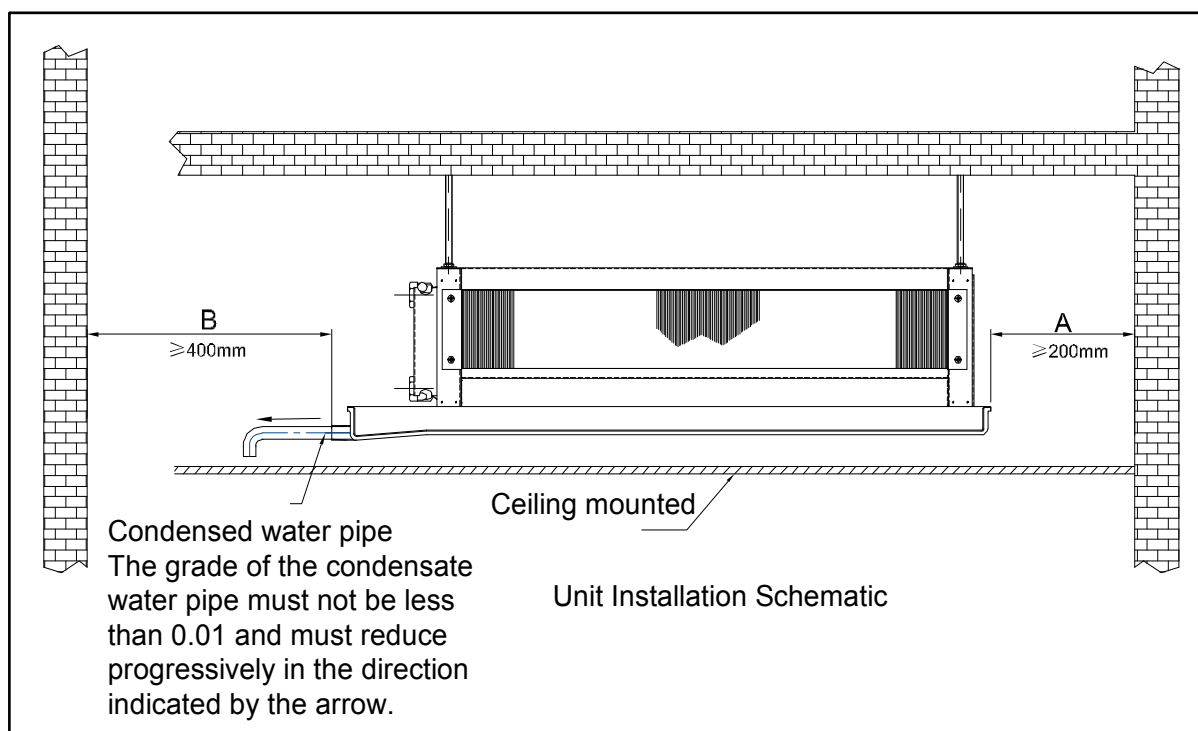
- i. Is there sufficient space for the unit installation, maintenance, piping connection and electrical wiring.
- ii. Please ensure enough space for the hanging rods can support weight of the unit as well as the vibration when the unit is running
- iii. The unit must be installed horizontally to ensure proper operation and condensate draining.
- iv. The external static pressure of the ducting must be within the design static pressure range.
- v. Confirm that the unit has been switched OFF before installing or servicing the unit.

2) Unit Installation

- i. The unit is designed to be installed in a concealed ceiling. Installation and maintenance should be performed by qualified persons who are familiar with local codes and regulations, and experienced with this type of appliance.
- ii. The air duct length of the unit must meet the requirements of the rated outlet static pressure of the unit, otherwise the unit will not work properly. The installation of the air duct must met the local laws and regulations.
- iii. If the air duct connector and the air supply outlet does not match, you can install an air duct with variable section areas.
- iv. The air outlet flange of the unit and the air duct must be connected using soft hose and heat prevention measures must be taken to prevent condensate water.
- v. For a unit without an air filter, install an air filter at the air return point to prevent dust from accumulating on the exchanger fins and degrading the heat exchange performance.
- vi. Connect the water inlet and outlet pipes using a flexible hose and seal the connection with adhesive tape. The pip connection torque must not exceed 98Nm (10kgf.m) to avoid copper pipes from leaking due to deformation.
- vii. Install a water filter at the cold water inlet of the water pump and the water inlet of the unit to prevent clogging due to contaminants.
- viii. Valves, inlet / outlet water pipes and condensate water pipes must be strictly protected against heat loss to prevent condensing.
- ix. After the units is installed, clean the unit and ensure that no contaminants exist in the condensate water coil to ensure smooth condensate water discharge. If the site where a unit is installed is being decorated, protect the surface of the unit against scratching and infiltration of contaminants which may cause an operation failure.
- x. Before connecting electric wires, verify that the power supply specifications meet the requirements specified on the nameplate. Disconnect power cables to avoid electric shock. Electric connection must be performed according to the electric wiring diagram. The unit must be well grounded.
- xi. The voltage, frequency and number of phases of the power supply must meet the requirements specified on the nameplate. The voltage fluctuations must not exceed $\pm 10\%$.

UNIT INSTALLATION ILLUSTRATIONS

Illustration 1



Caution:

Make sure the top of the unit is level after installation. The drain pan is designed with a little gradient to facilitate drainage.

Illustration 2

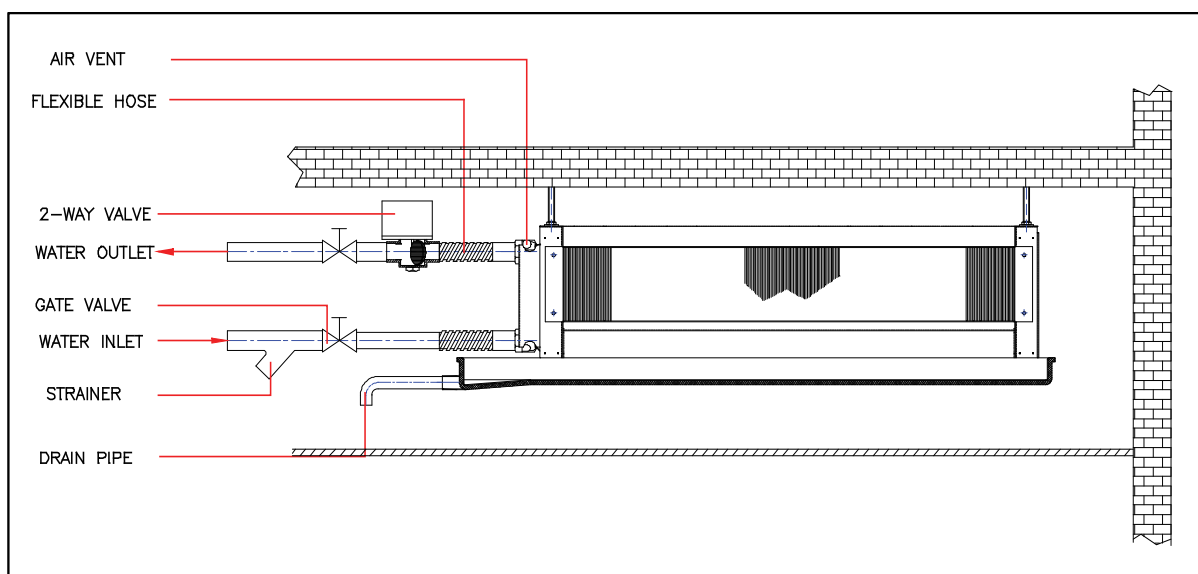
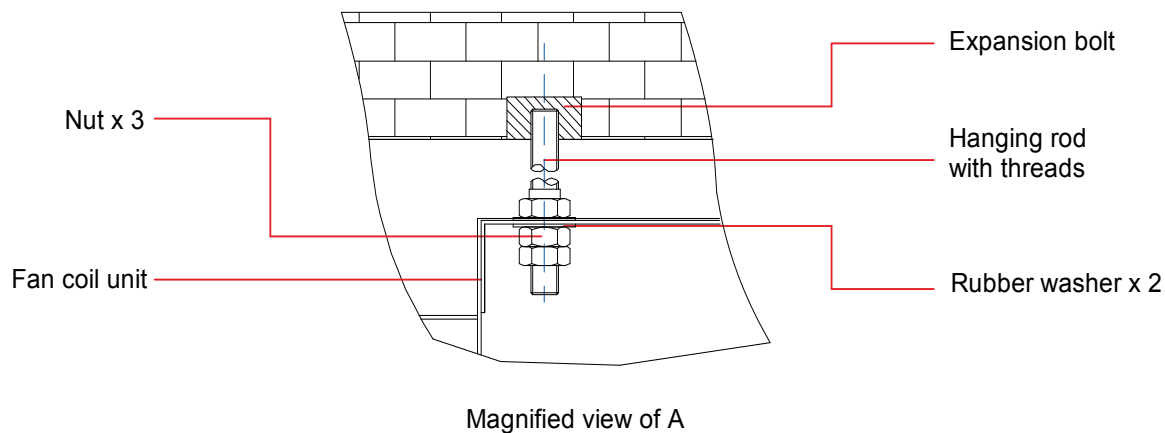
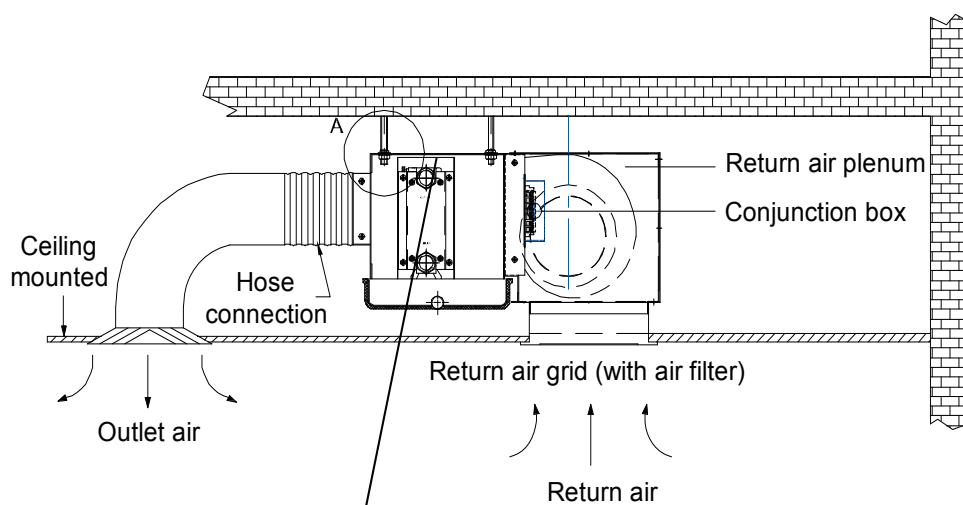
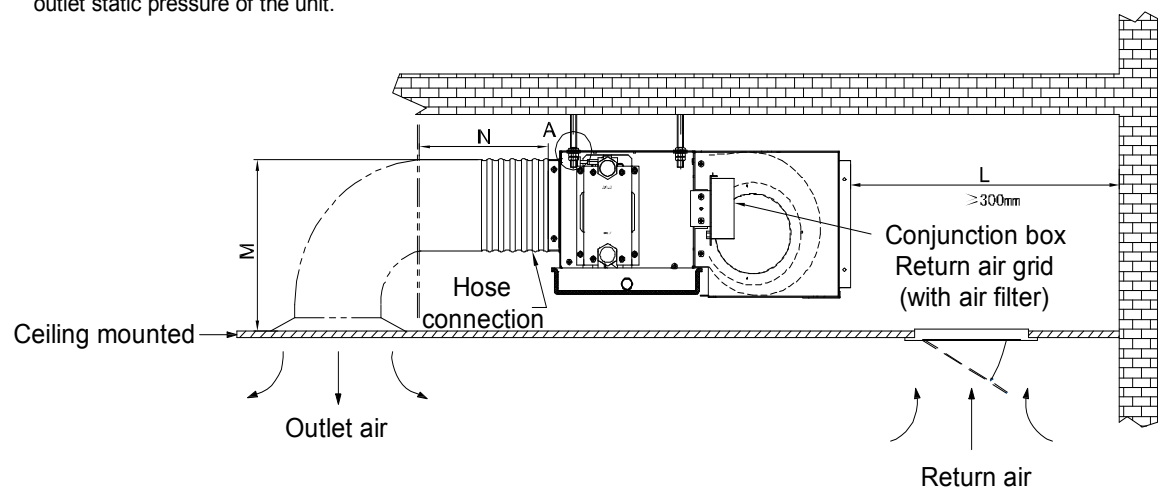


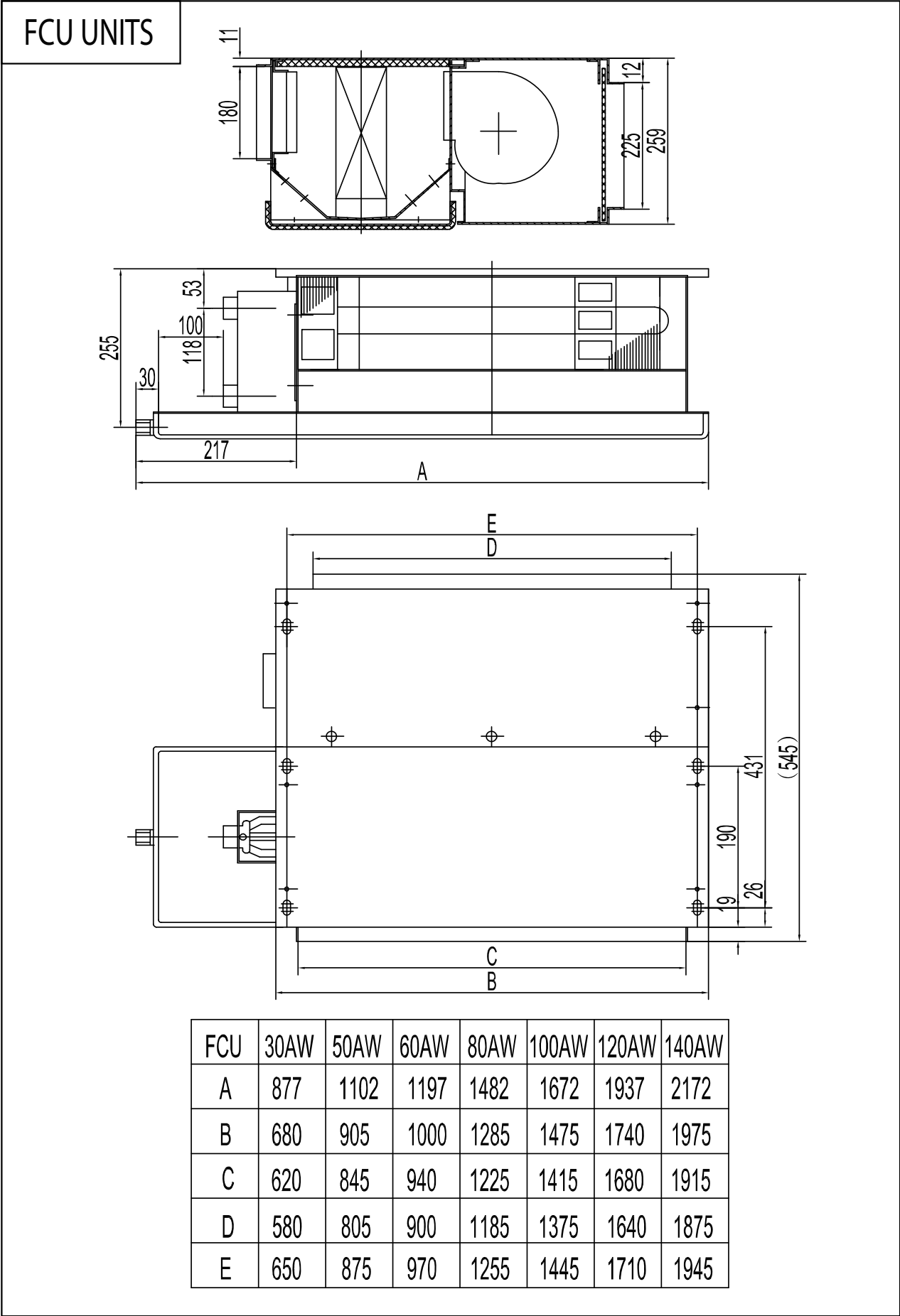
Illustration 3

Note:

1. The air duct must be fireproof regulations for buildings.
2. For horizontal air supply air duct is longer than 1 m, $N \geq 200\text{mm}$.
3. The size of M depends on the air duct installation. The pressure loss of the circulatory air must be consistent with the outlet static pressure of the unit.



DIMENSIONS

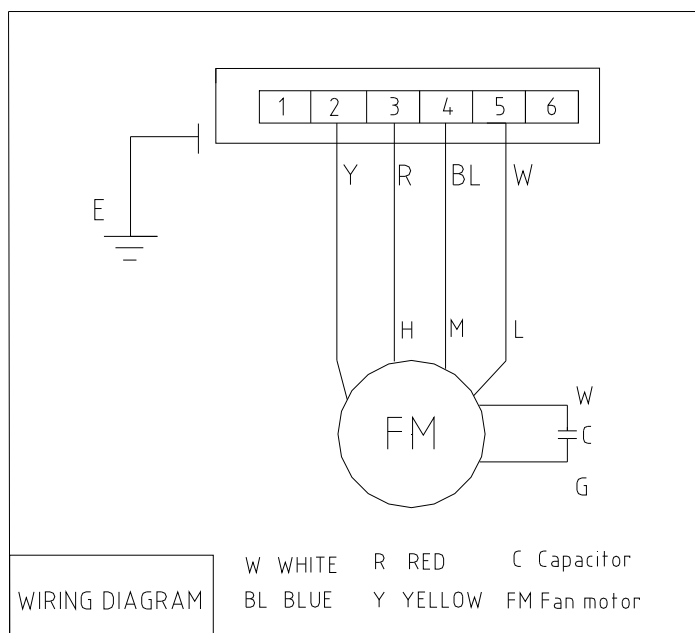


WIRING DIAGRAMS

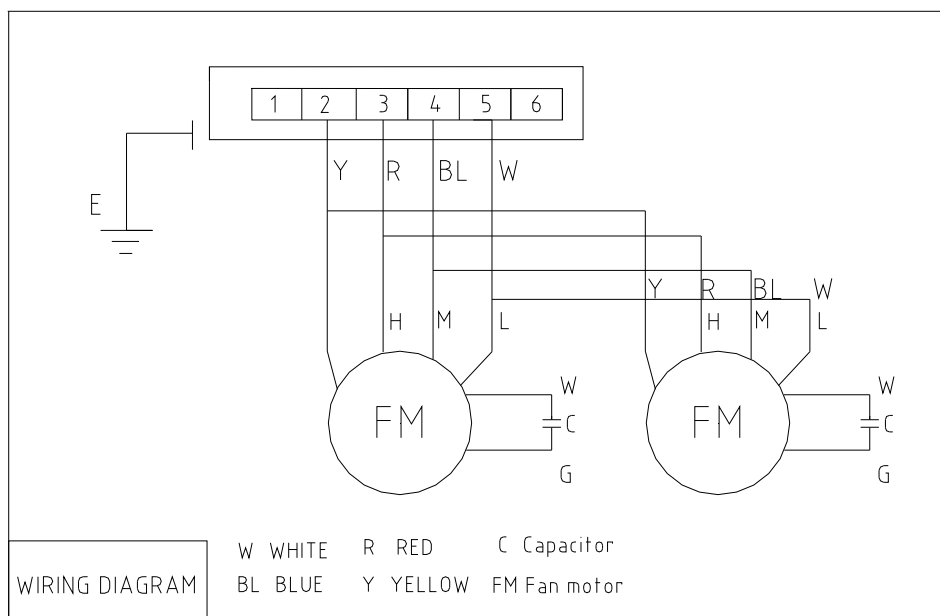
Before doing the electric wiring, Please check that:

- i. Electrical wiring connection must be done according to the wiring diagram on the unit. Refer to diagrams below.
- ii. The unit must be GROUNDED to the earth system of the building.
- iii. All field wiring must be installed in accordance with the national wiring regulations.

FOR MODEL: FCU 30 AW to FCU 60 AW



FOR MODEL: FCU 80 AW to FCU 140 AW



Warning:

- Switch shall be connected to the supply terminals and shall have a contact separation of at least 3 mm in each pole. Confirm that the unit has been switched OFF before installing or servicing the unit.

MAINTENANCE

General

- A. Installation and maintenance should be performed by qualified persons who are familiar with local codes and regulations, and experienced with this type of appliance.
- B. Confirm that the unit has been switched OFF before installing or servicing the unit.
- C. A good general maintenance plan will avoid losses and unexpected shutting down of the equipment.
- D. Dirty filters reduce air flow as well as unit performance. Thus changing or cleaning the filters is very important. Check the cleanliness of filter and replace or clean as required monthly.
- E. Coils should be cleaned from dust, dirt or lint with compressed air or water. They can be brushed with a soft brush and vacuum cleaner.
- F. Water coil not used during winter season should be drained, or anti-freezing solution should be added to the water circuit to avoid freezing.
- G. Monthly:
 - i. Inspect and clean condensate drain pan to avoiding clogging of drainage by dirt, dust, etc. Inspect drainage piping to ensure the proper condensate flow.
 - ii. Check and clean the coil. Clean the coils with low pressure water jet or low pressure air.
 - iii. Clean and tighten all the wiring connections.
 - iv. Drain out the system water and check for build up of mineral deposits.

Air Purging

- i. After connecting the water inlet and outlet pipes to the main supply lines turn on the main breaker and operate the unit.
- ii. Open the water inlet valve and flood the coil.
- iii. Check all connections for water leakage, if no leak is found open the air vent valve with an open end wrench. Then purge the air trapped inside the coil. When performing this, take care not to touch the electrical parts.
- iv. Close the air vent valve when no bubbles appear.
- v. Open the water outlet valve.