

**DESCRIPTION**

The air conditioners for control boxes are designed to maintain constant temperature and humidity in electrical control boxes in order to provide long service life and precise monitoring with clear display

- \* Five sizes : 1000, 2700, 4000, 7000, and 13000 BTU
- \* 2 types of installation: on the side or on top of control boxes
- Setting parameters in the controller on the screen display
- \* System protection from overflow in drain pipe, clogged drain and damaged compressor.
- Made from steel or stainless steel for food industries
- \* System protection with alarms in case of high pressure and water level.
- Time delay setting to start compressor ( minutes) in order to protect the compressor from electrical problems in case of power surge.

**OPERATION**

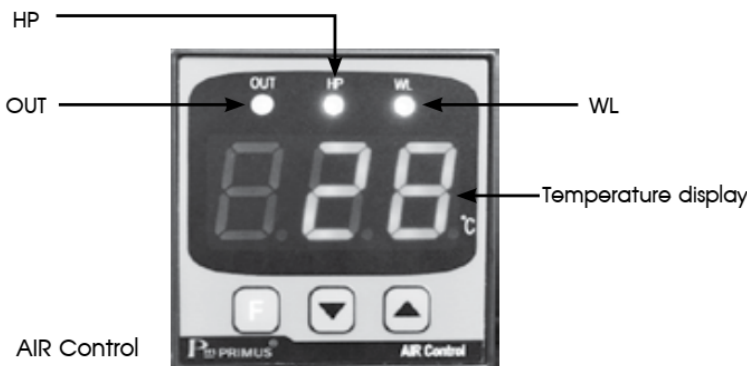
ECM-series are air conditioners for control boxes. They are designed to maintain constant temperature and reduce humidity in control boxes, hence protecting electrical equipment such as inverters, electrical boards, etc. from damage caused by high temperature and humidity. In addition, several system protections provide a long service life and greater efficiency in an electrical equipment

When the power is turned on, the controller prevents the compressor from starting to operate immediately (time delay D1). LEDs will show the flashing lights OUT, WP, WL. When the time delay D1 has elapsed, the output will show "ON", prompting the compressor to start working with cooling fans. The high pressure(HP) and water level (WL) checking systems will start working after the time delay (D2) has elapsed. If the sensors detect high pressure (HP) or clogged drainage in pipe (WL), then the controller will shut down the compressor to prevent damage and the system will stop working due to decrease of high pressure (HP).

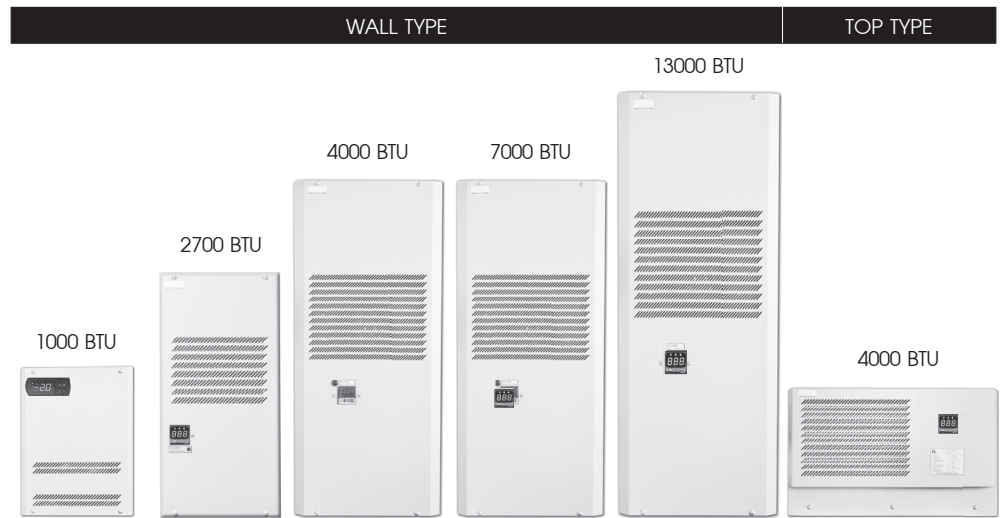
When the system become active as normal pressure, then compressor will return to work automatically by time (D3).

However, if the high pressure (HP) is detected more than twice, the system will stop working, the maintenance will be needed before resuming normal operations in case of a clogged drainage pipe, an alarm will appear on the controller display.

ECM-SERIES installation in control boxes. The control boxes should be sealed or closed to prevent outside air and protect the condense in the system because of the humidity inside control boxes due to water drop, after that the system is stopped working



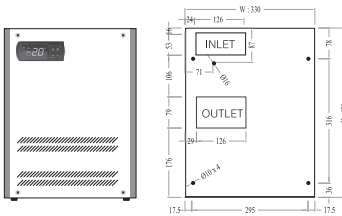
OUT : output shows status of compressor is ON  
 HP : High Pressure shows status of pressure is High  
 WL : Water Level shows status of clogged drian

**SPECIFICATION**
**ECM-Series**


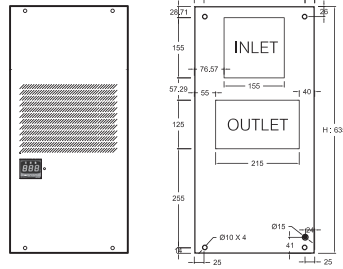
MODEL	UNITS	WALL TYPE										TOP TYPE	
		ECM-1000	ECM-1000 SUS	ECM-2700	ECM-2700 SUS	ECM-4000	ECM-4000 SUS	ECM-7000	ECM-7000 SUS	ECM-13000	ECM-13000 SUS	ECM-13000	ECM-4000 (Top Installation)
Material	-	Galvanized	SUS304	Galvanized	SUS304	Galvanized	SUS304	Galvanized	SUS304	Galvanized	SUS304	Galvanized	SUS304
Supply Voltage	V-Ph-Hz	220-240/1/50											
Cooling Capacity L35L35	W	330	800	1400	2000	3800	1400						
Cooling Capacity L35L50	W	270	680	1170	1700	2700	1170						
Cooling Capacity	BTU/h	1000	2700	4000	7000	13000	4000						
Dimension (Width/Height/Depth)	mm	330/430/181	310/635/210	412/930/252.5	412/930/252.5	505/1230/370	604/360/450						
Max Running Current	A	1.2	2.1	4	4.7	8.8	4						
Start Current	A	5	12	17	20	38	17						
Start Delay Time (D1)	min.	1 - 60 (Default 3 minute)											
Sensor Delay Time (D2)	min.	1 - 60 (Default 1 minute)											
Recovery Time (D3)	min.	1 - 60 (Default 1 minute)											
Condensor Fan Air Flow	m <sup>3</sup> /h	188	460	593	1220	1231	367						
Evaporation Fan Air Flow	m <sup>3</sup> /h	115	300	312	780	1891	675						
Condensor Fan Power Consumption/Current	W/A	35/0.29	62/0.28	62/0.28	87/0.44	189/0.94	87/0.44						
Evaporation Fan Power Consumption/Current	W/A	18/0.12	35/0.29	62/0.28	62/0.28	189/0.94	62/0.28						
Internal Temperature Limits	°C	25-45											
Outer Temperature Limits	°C	20-55											
Internal Protection Degree	IP	IP54											
External Protection Degree	IP	IP30	IP34										
Protection System	Clot Water Pipe	-	√	√	√	√	√						
	Compressor	-	-	√	√	√	√						
Refrigerant Charge	kg	0.25	0.35	0.65	0.65	1	0.6						
Refrigerant	R	134a										R404	134a
Noise Level	(Max) dB	57.9	67.3	67.0	70.6	75.0	67.0						
Weight	kg	19	29	45	48	92	50						

**DIMENSION**

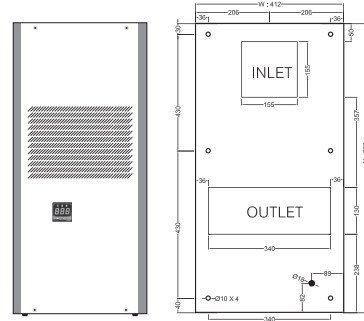
ECM-1000/ECM-1000 SUS



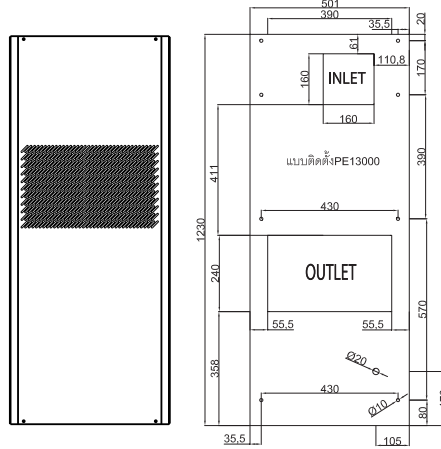
ECM-2700/ECM-2700 SUS



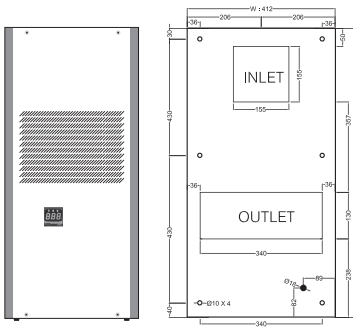
ECM-4000/ECM-4000 SUS



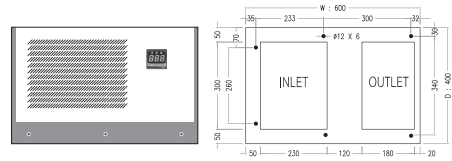
ECM-13000/ECM-13000 SUS



ECM-7000/ECM-7000 SUS

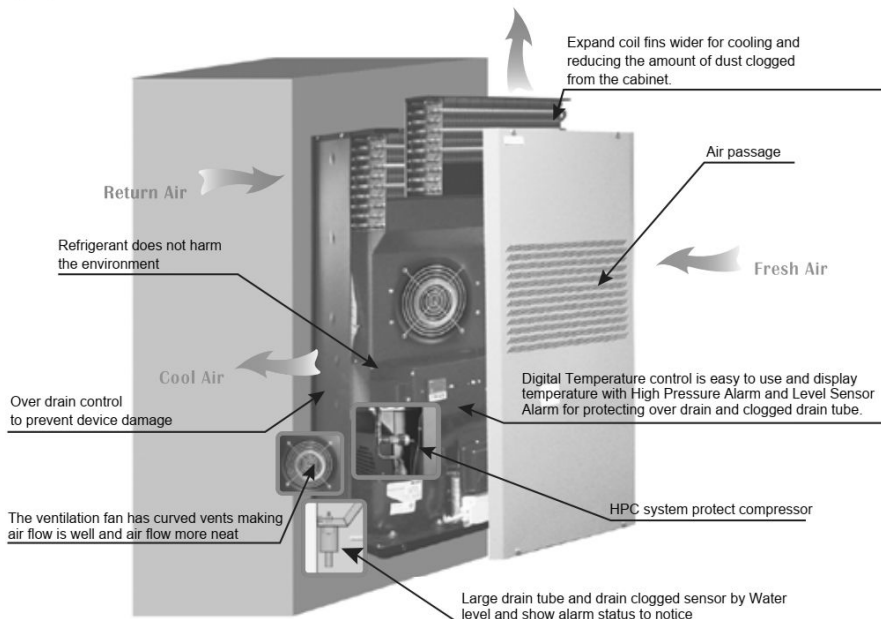


ECM-4000/ECM-4000 SUS  
(Top Installation)



**performance characteristics**

Hot Air

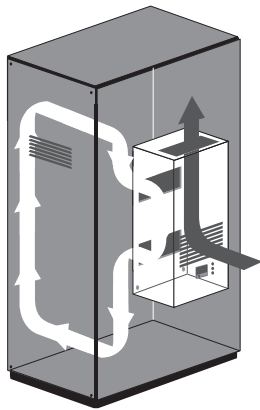


**EXAMPLE DATA FROM EXCEL FILE**

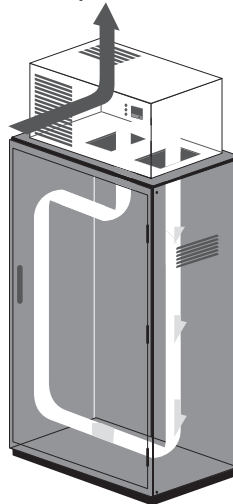
SV	PV	Out	HP	WL	AL
30	37	1	0	0	0
30	37	1	0	0	0
30	37	1	0	0	0
30	37	1	0	0	0
30	37	1	0	0	0
30	36	1	0	0	0
30	36	1	0	0	0
30	36	1	0	0	0
30	36	1	0	0	0
30	36	1	0	0	0
30	36	1	0	0	0
30	35	1	0	0	0
30	35	1	0	0	0
30	35	1	0	0	0
30	35	1	0	0	0

**Installation**

## • Side Installation


 ECM-1000, ECM-2700, ECM-7000  
 ECM-4000, ECM-13000

## • Top Installation



ECM-4000


**FEATURES**
**ECM-Series**


MODEL	ECM-1000	ECM-1000 SUS	ECM-2700	ECM-2700 SUS	ECM-4000	ECM-4000 SUS	ECM-7000	ECM-7000 SUS	ECM-13000	ECM-13000 SUS	ECM-4000 (Top Installation)	ECM-4000SUS (Top Installation)
Hot Coil Fan												
	FP-108C-S1		REH190x62		REH190x62		2RRE25 220x45R		2RRE45 250x50R		2RRE25 220x45R	
Cool Coil Fan												
	RAH1238B1-C		FP-108C-S1		REH190x62		REH190x62		2RRE45 250x50R		REH190x62	
Air Control												
Magnetic Contactors			-		-		-				-	