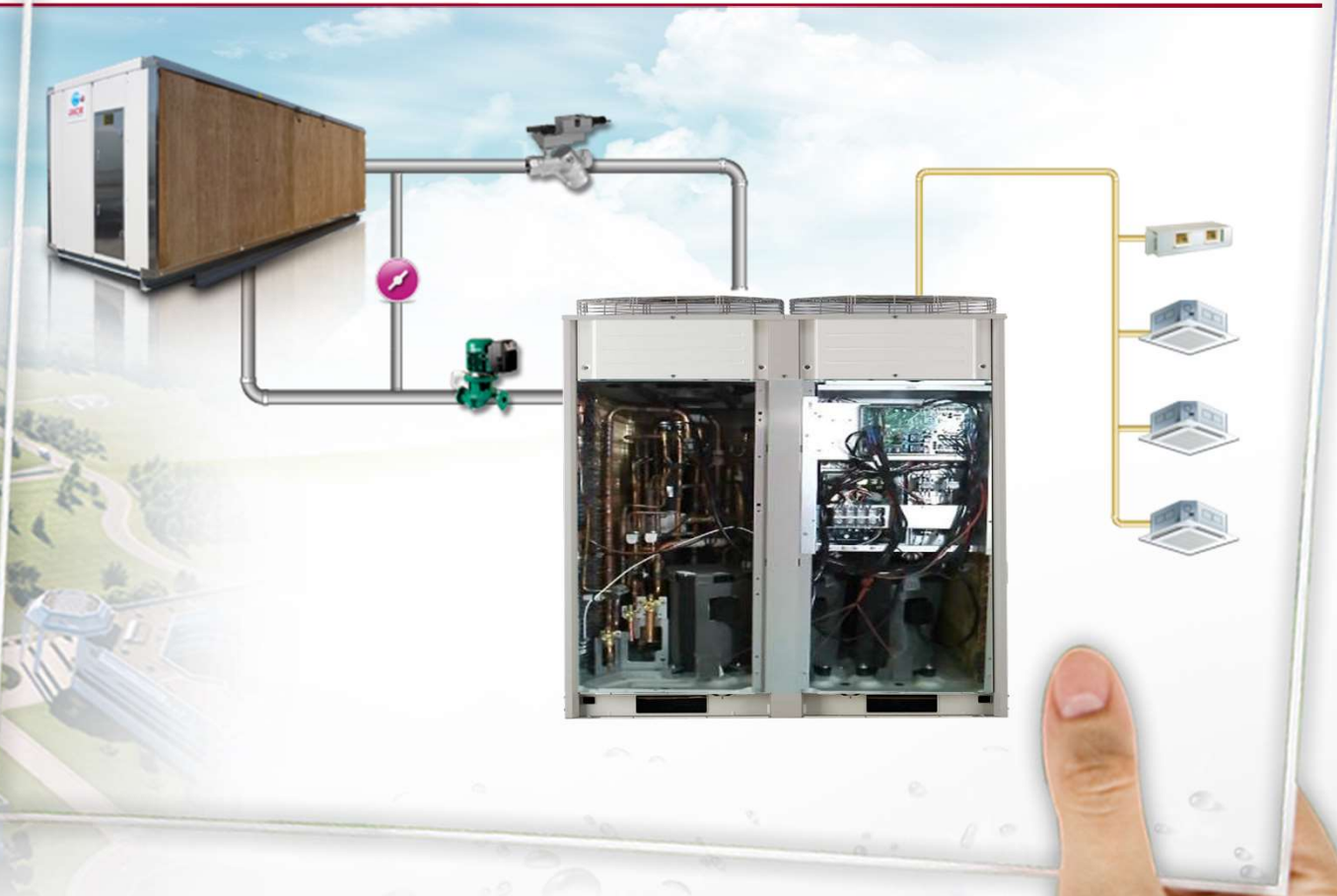
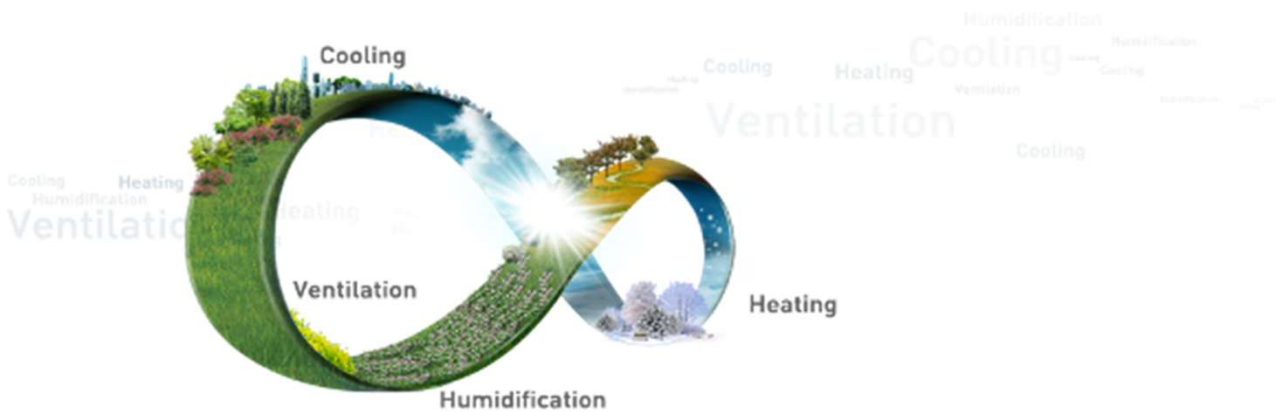




Sistemas AHU

Capacitación A11 – Producto

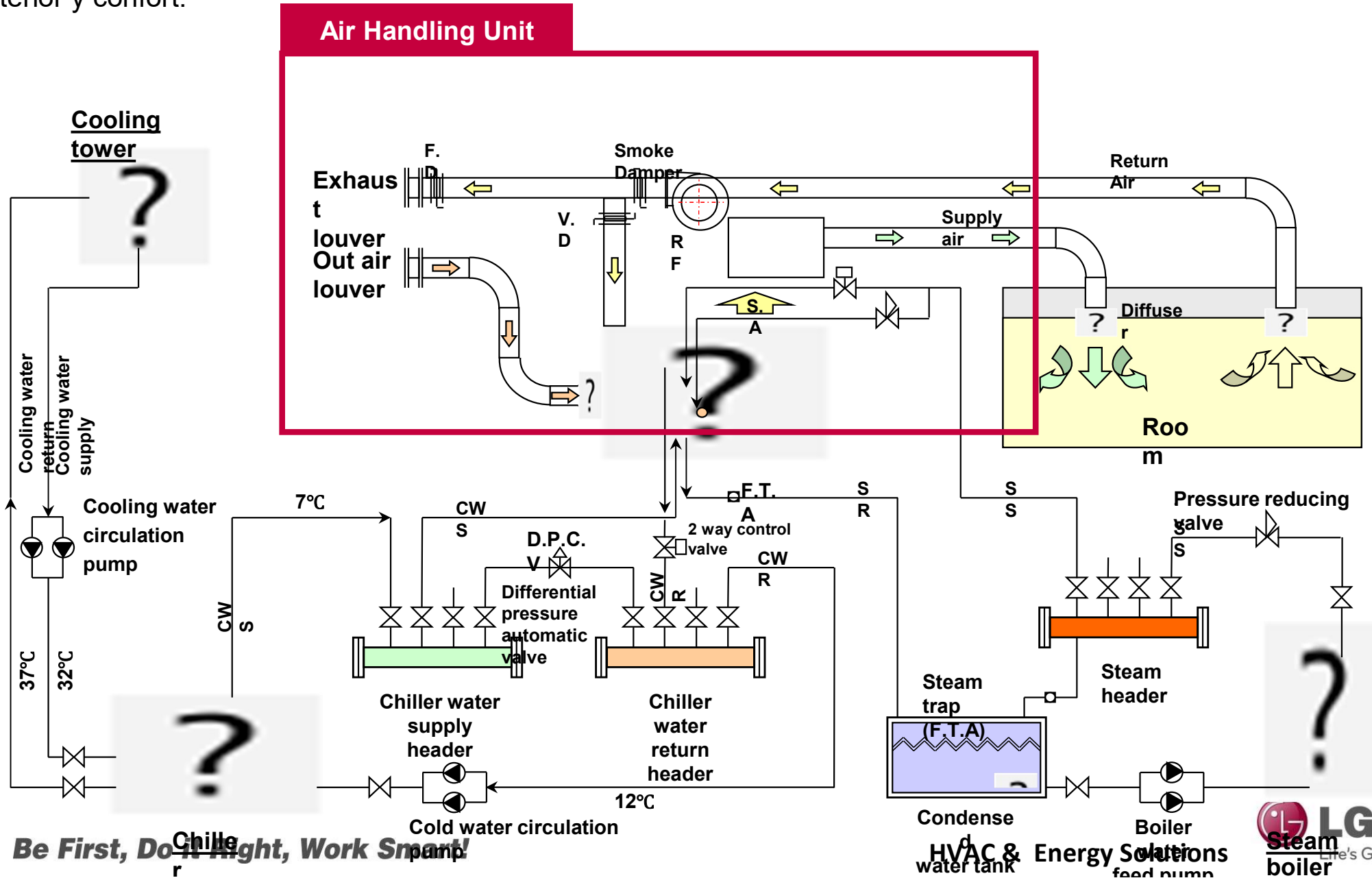


Introduction of **DXAHU**



Sistema Convencional AHU

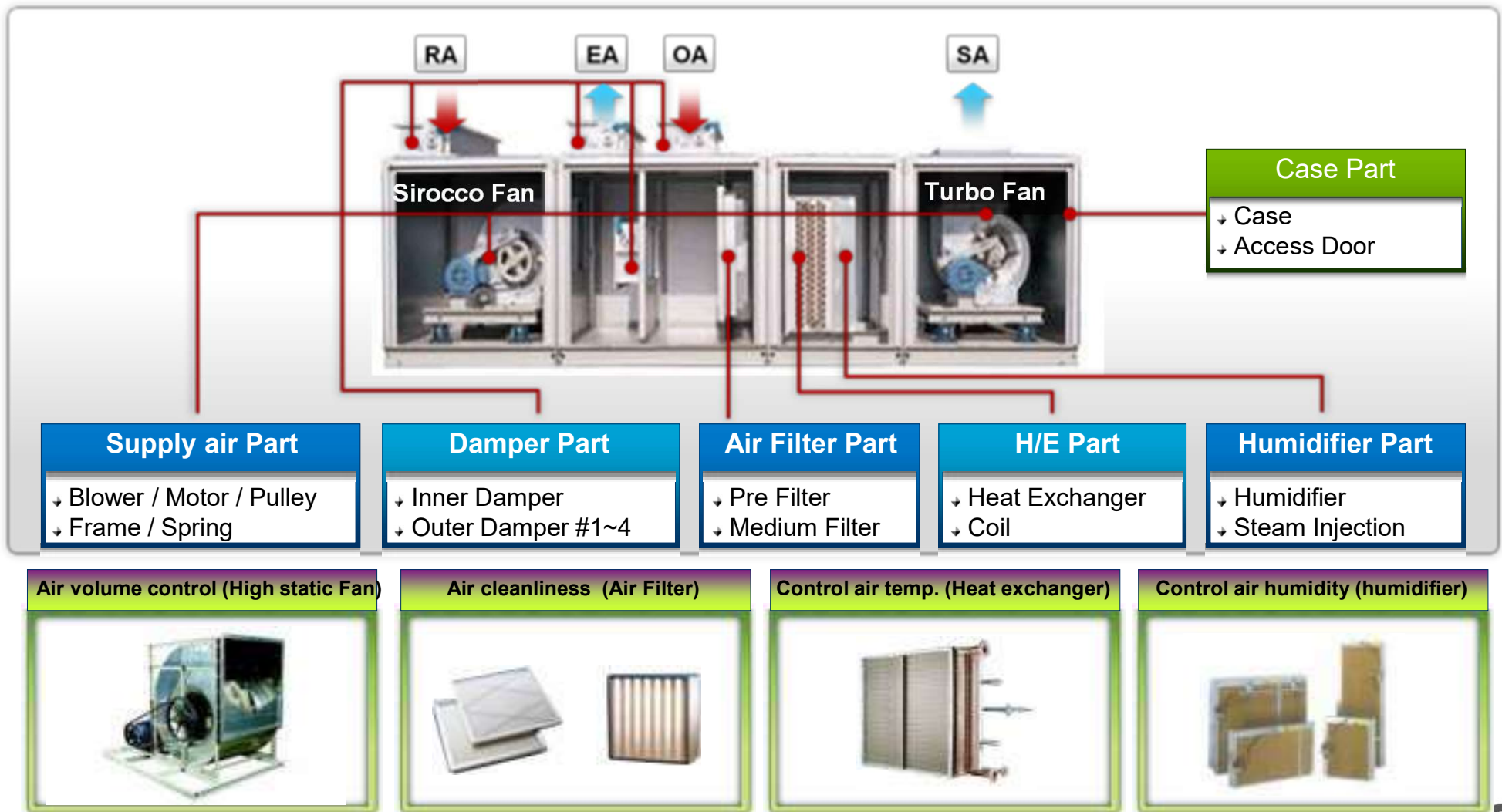
Hay muchos tipos de componentes que componen el sistema de climatización convencionales, tales como un refrigerador, la torre de enfriamiento, y la caldera. El componente más importante es AHU para la calidad del aire interior y confort.



1- Que es AHU ?

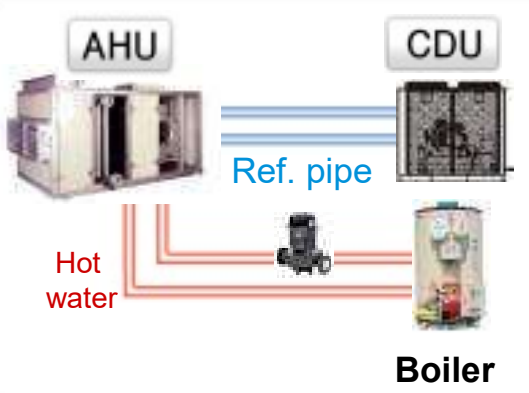
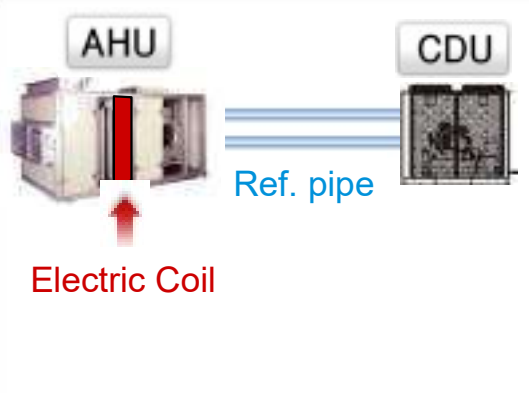
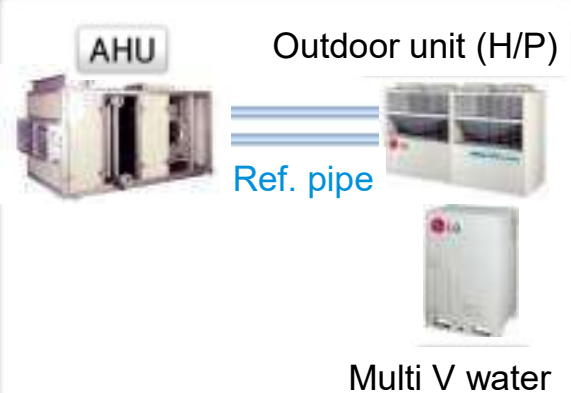
Es una UTA tiene funciones como la refrigeración, calefacción, humidificación del aire limpieza y ventilación, y es el suministro de solución múltiple para el consumidor

AHU system keeps required indoor air temperature, humidity, air current and cleanliness so that is suitable for the purpose of the place.



1- Que es AHU ?

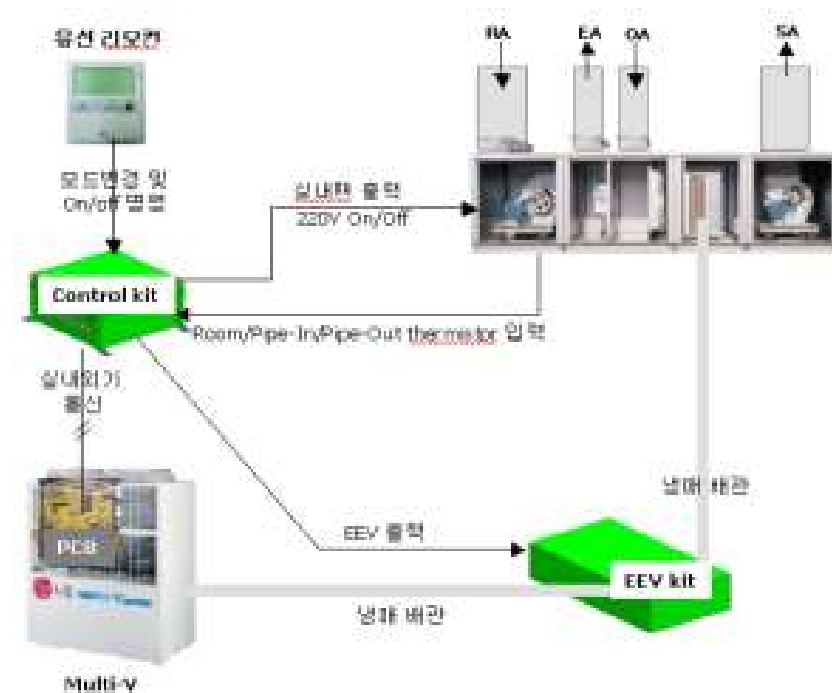
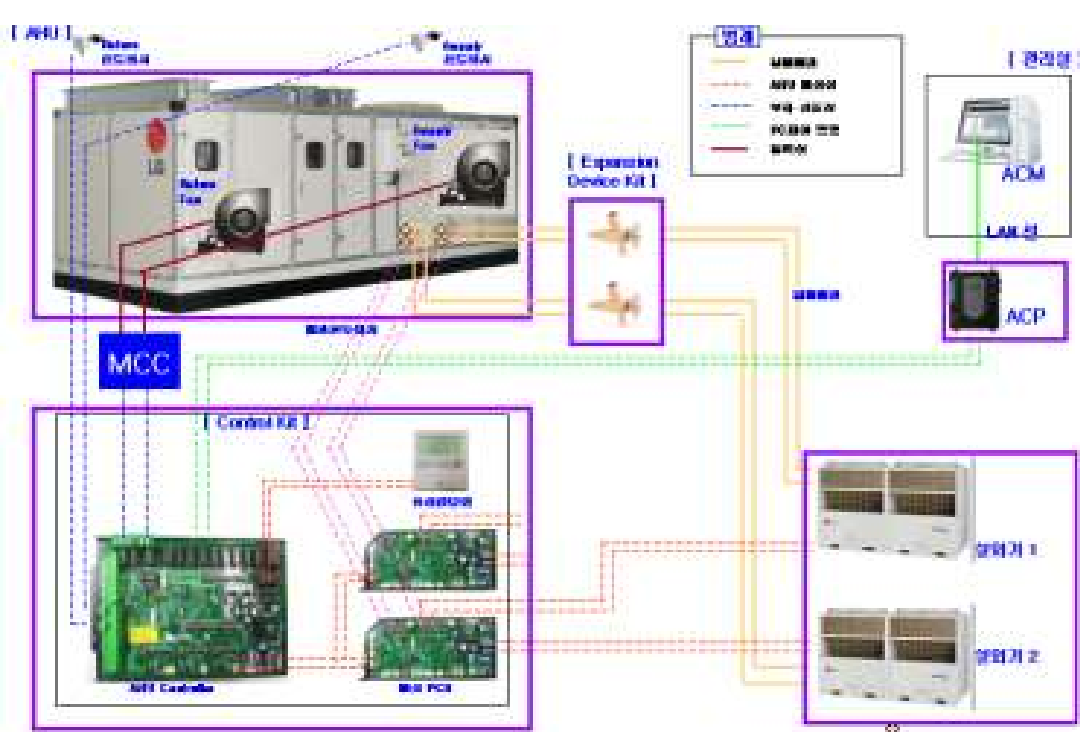
Bajo costo inicial y funcionamiento con respecto a UTA constante, y puede operar refrigeración y calefacción con un sistema Multi V

Item	Constant model		LG Heat Pump AHU
	Boiler Heating	Electric Coil Heating	
Configuration	 AHU, CDU, Ref. pipe, Hot water, Boiler	 AHU, CDU, Ref. pipe, Electric Coil	 AHU, Outdoor unit (H/P), Ref. pipe, Multi V water
Heating	- Boiler Connection - Complex System	- Electric Coil — Simple System.	- Heat pump. — Simple System.
Initial Cost	High (120%) Boiler, pump, water piping, gas piping, etc	Low(93%)	Mideum(100%)
Operation Cost	Mideum(128%)	High (140%) Big electric capacity, high operation cost	Low (100%)

※ It can be different by the project condition.
 - Based on 24,000 CMH(50HP).
 - Except for duct work cost (common)

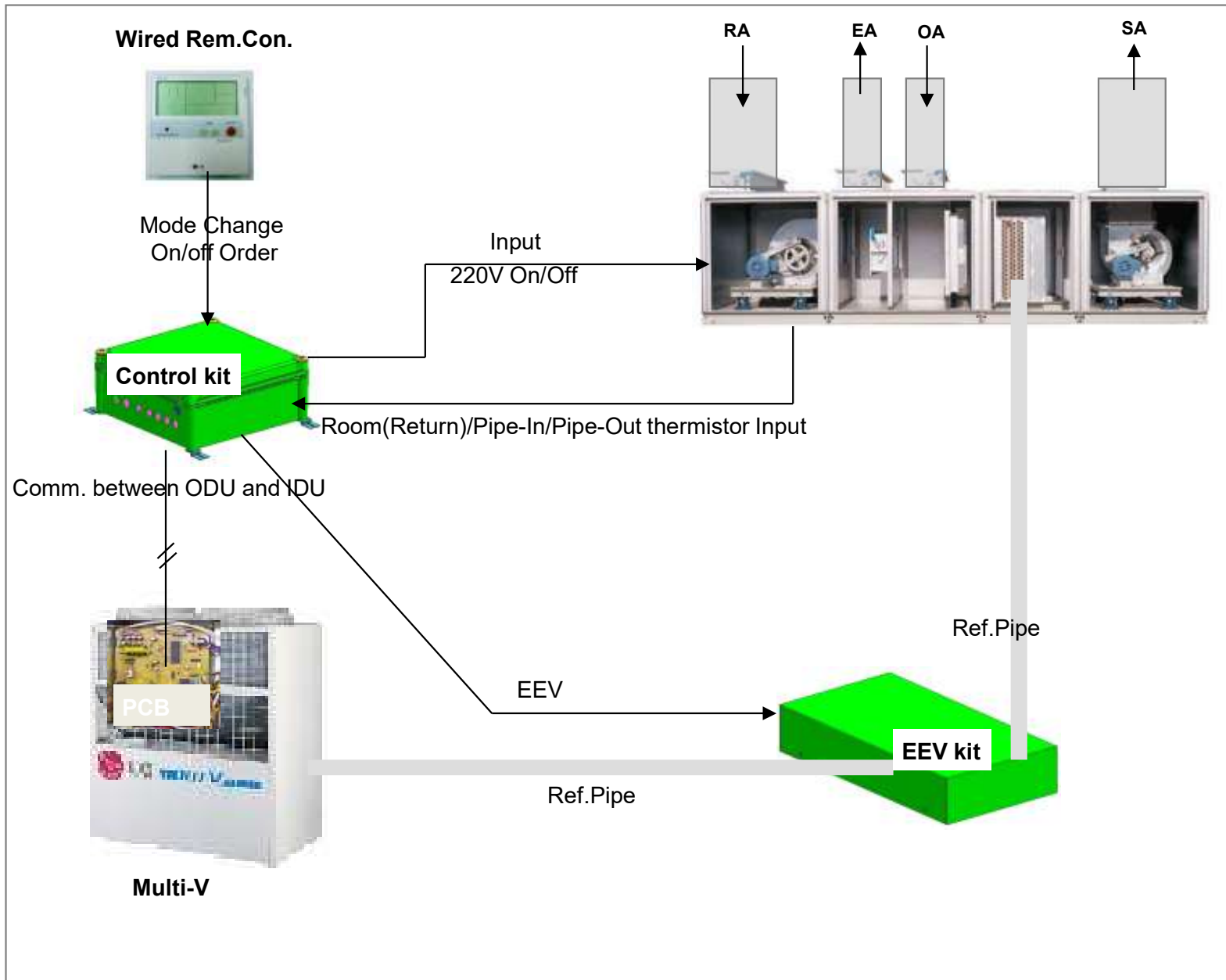
1- Que es AHU ?

Hay dos tipos de accesorio para DX AHU, uno se utiliza para la pequeña capacidad de 10Hp o menos, y el otro es de gran capacidad de 10Hp o más



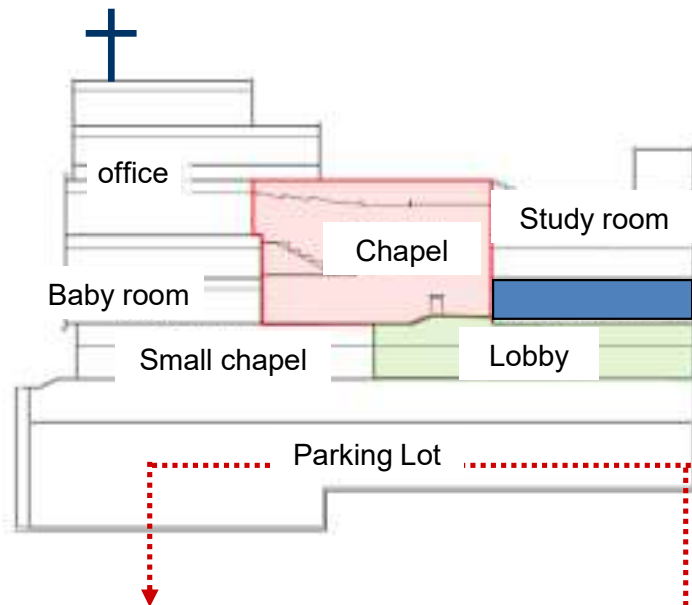
2 - Generalidades

Pequeña Capacidad AHU KIT



2 - Generalidades

Total integración de los sistemas de control de varios tipos de unidades interiores



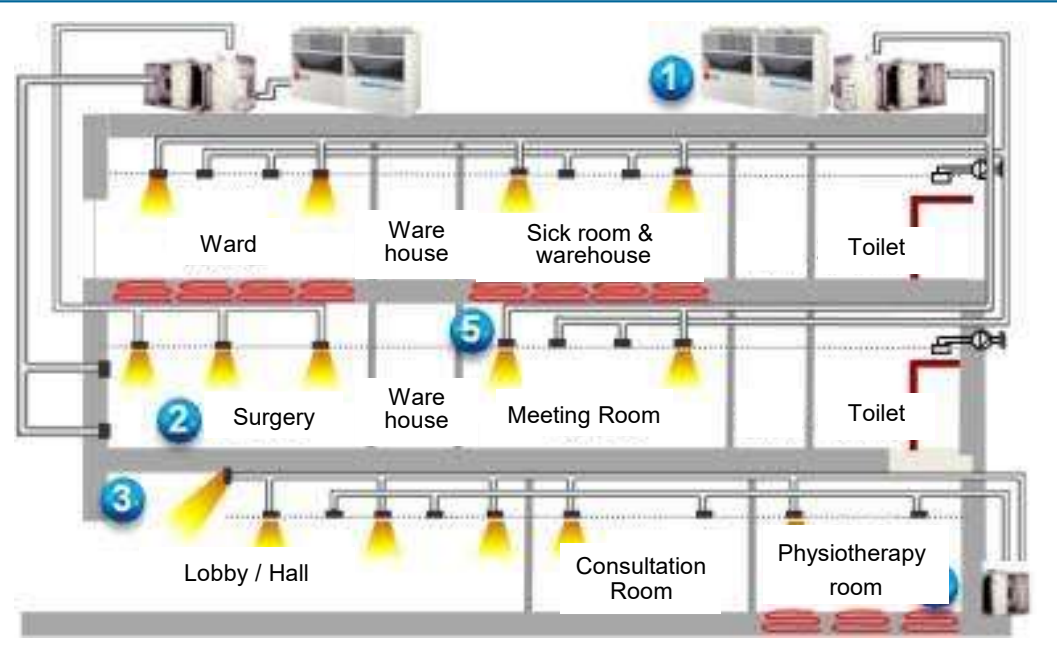
Space	characteristics	Product
 Great chapel	- Big & High ceiling - Random operation - Many persons Big Air volume	 DX AHU
 Lobby	- Big penetration air - High ceiling height - Big skin load	

Total control	Application space	Characteristics
 - AC Manager. - ACP	Office Baby room Study room Chapel Pastor room Hymn room	- Individual operation - Random operation - Considering air current / temperature distribution - Indoor noise 4 way Cassette 1 way Cassette Concealed duct

3. AHU Aplicación

Necesidad de Ventilación / Humidificación

Medium/small Hospital



Load & operation character

- Necesidad de limpieza y ventilación, humidificación para una sala y la cirugía
- Puede ser necesario para calefacción de pacientes

Product selection

- Aplicación de la AHU para aire fresco y limpio y humidificación de la sala de cirugía.
- Aplicar Multi V para sala de descanso, sala de estar, sala de Consultas (cassette, conductos)

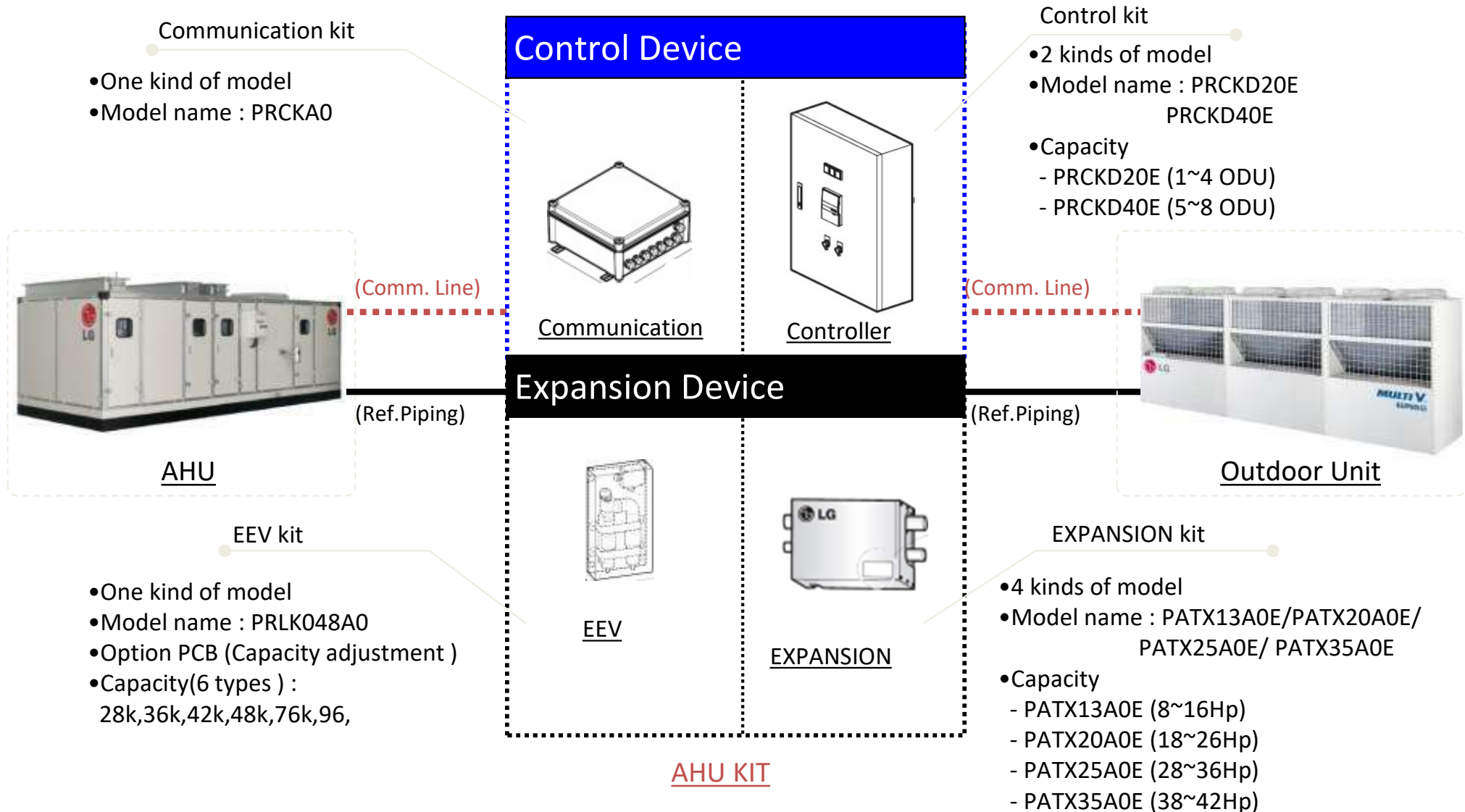
Application case



- OO Hospital
- AHU

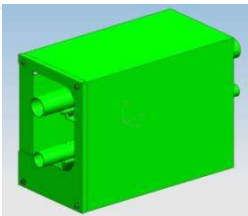
2-1-2. AHU KIT / Construction

AHU Kit es un accesorio requerido para conectar a una unidad Multi V con expansión directa del tipo AHU, y se puede utilizar para las de pequeña o gran capacidad



4.1 AHU KIT / Tipos de KIT

Tanto para gran capacidad (más de 10 HP) o capacidad pequeña (menos de 10 HP) KIT se compone de KIT comunicación y kit de expansión, y cada uno de ellos debe ser utilizado con adaptación a la capacidad de la unidad exterior.

Item			Model	Specification	Remarks.
Control Device	Control Kit		PRCKD20E	- AHU Controller - ODU Comm. PCB - Sensor Power Supply 1~4 Sets ODU Combine	1.Control Kit and Comm. Kit -Control kit is used when large capacity is connected and overall support of control which is realized during the operation of cooling/heating and AHU is possible (humidity, CO₂, Damper control etc.). - Comm. Kit is used when connecting small capacity and cooling/heating mode support is performed.
			PRCKD40E	- AHU Controller - ODU Comm. PCB - Sensor Power Supply 5~8 Sets ODU Combine	
	Comm. Kit		PRCKA0	- One Comm. Kit + One EEV Kit - Capacity change using the option PCB included Kit (Capacity : 28K, 36K, 42K, 48K, 76K, 96K)	
Expansion Device	Expansion Kit		PATX13A0E	ODU Capacity : 8~16HP	2.TXV Kit and EEV Kit - These kits are used for expansion of refrigerant cycle. TXV is used for more than 10hp and EEV is used for less than 10 hp.
			PATX20A0E	ODU Capacity : 18~26HP	
			PATX25A0E	ODU Capacity : 28~36HP	
			PATX35A0E	ODU Capacity : 38~42HP	
	EEV Kit		PRLK048A0	Capacity : 28K, 36K, 42K, 48K, 76K, 96K	

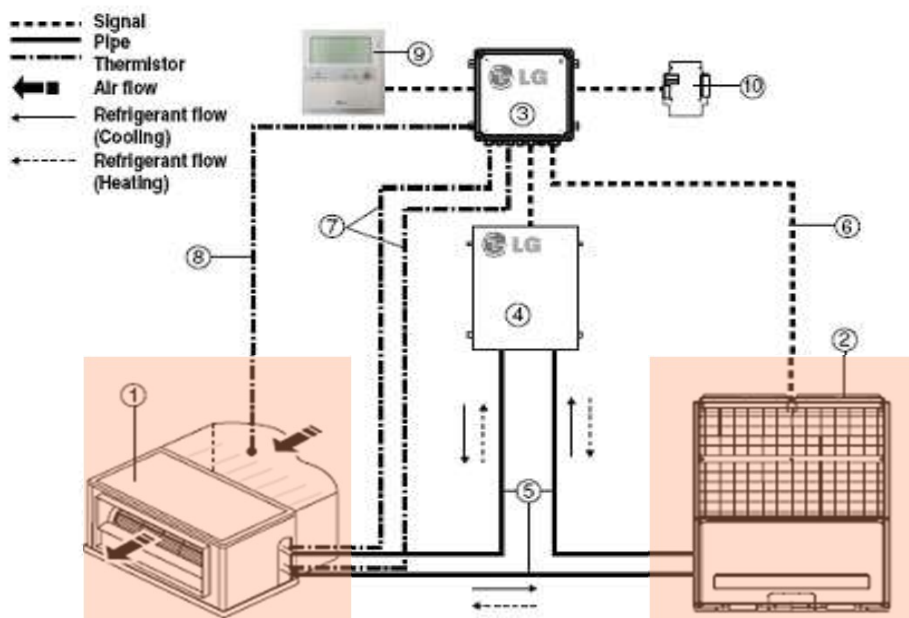
4.1 AHU KIT / Tipos de KIT

El AHU KIT debe ser utilizado de acuerdo con la capacidad de las ODU conectadas
(Following is the case of Heat Pump)

Category	Heat Pump		
	Small Capacity	Large Capacity	Large capacity/Damper control
Capa.	~ 10HP	10HP ~42HP	8~42HP * 8Sets
Out door unit	- Multi V Plus II - Multi V Sync all - Multi V Space II - Multi V Mini	- Multi V Plus II - Multi V Space II - Multi V Mini	- Multi V Plus II - Multi V WATER II
Composition	- PRCKA0 : 1ea - PRLK048A0 : 1ea - Wired Remocon : 1ea (Acc'y) - Dry Contact : 1ea (Acc'y)	- PRCKA0 : No. of ODU - PATXOOA0E : No. of ODU - Wired Remocon : 1ea(Acc'y) - Dry Contact : 1ea (Acc'y)	- PRCKDOOE : 1ea - PATXOOA0E : No. of ODU - Wired Remocon : 2ea (Default)
Basic running mode	Cooling, Heating, Fan	Cooling, Heating, Fan	Cooling, Heating, Fan
Additional running mode	-	-	- Energy saving - Humid. / Soft dry - CO₂ / Smog remove - Fire alarm / Emergency stop
Fan signal	On / Off Signal	On / Off Signal	On / Off Signal
Control	- Wired Remocon - Dry Contact - AC Smart - ACP/AC Manager	- Wired Remocon - Dry Contact - AC Smart - ACP/AC Manager	- Wired Remocon - ACP/AC Manager - Lonwork / BACnet Point
Schematic Diagram	See App. 1	See App. 2	See App. 3

El AHU KIT para small capacidades se puede utilizar en dos casos 1:1 Instalación de una ODU y una AHU, o la instalación de 1 ODU y múltiples tipos de IDU

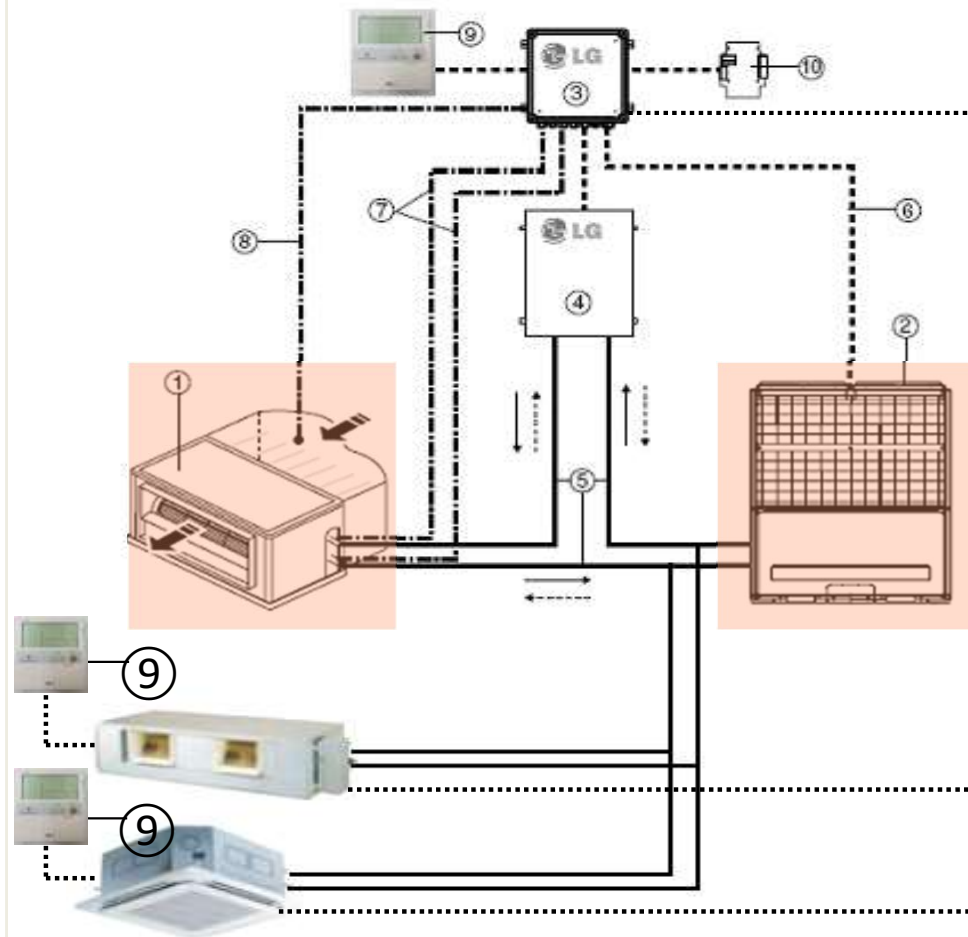
Single Indoor Unit (AHU 1 : 1 Matching)



Parts List

No.	Parts	No.	Parts
①	AHU	⑥	Comm. Wire (Kit↔ODU)
②	Outdoor Unit (H/P, C/O)	⑦	Pipe Temp. Sensor
③	Comm. Kit (PRCKA0)	⑧	Room Air Temp. Sensor
④	EEV Kit (PRLK048A0)	⑨	Wired Remocon (PQRCUSA0)
⑤	Connection pipe	⑩	Dry Contact (PQDSBNGCM0)

Multi Indoor Unit (AHU : one of IDU)

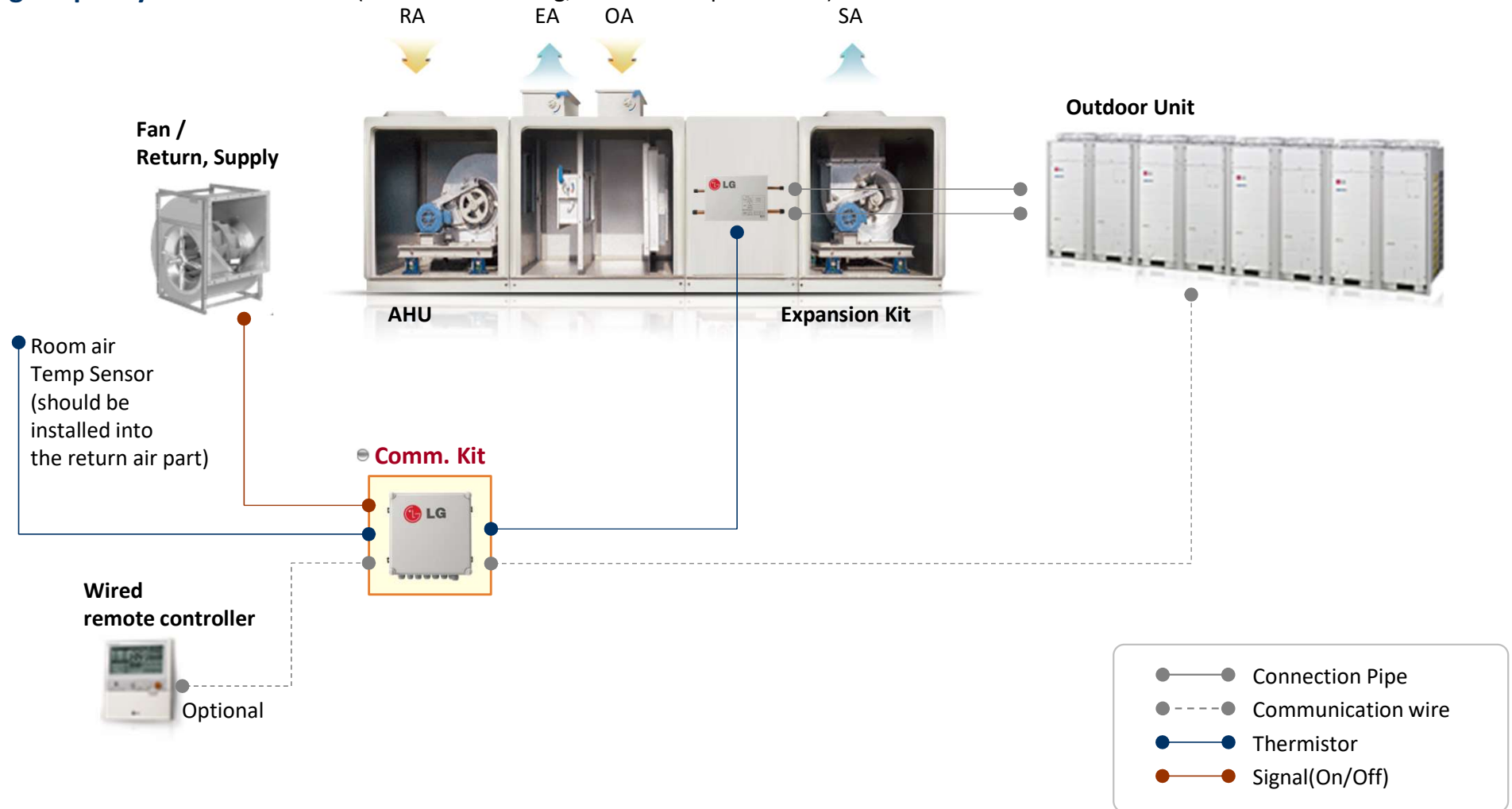


* Pipe & Wiring connection is the same as Multi

4 -2 -. AHU KIT / Aplicaciones

Aplicando AHU de gran capacidad es posible mediante la utilización del Comm. KIT y TXV, pero se debe tener en cuenta que en este caso, otro control incluido como el Damper Control etc. no es soportado

Large capacity with comm. Kit (AHU 1 : 1 Matching, without damper control)

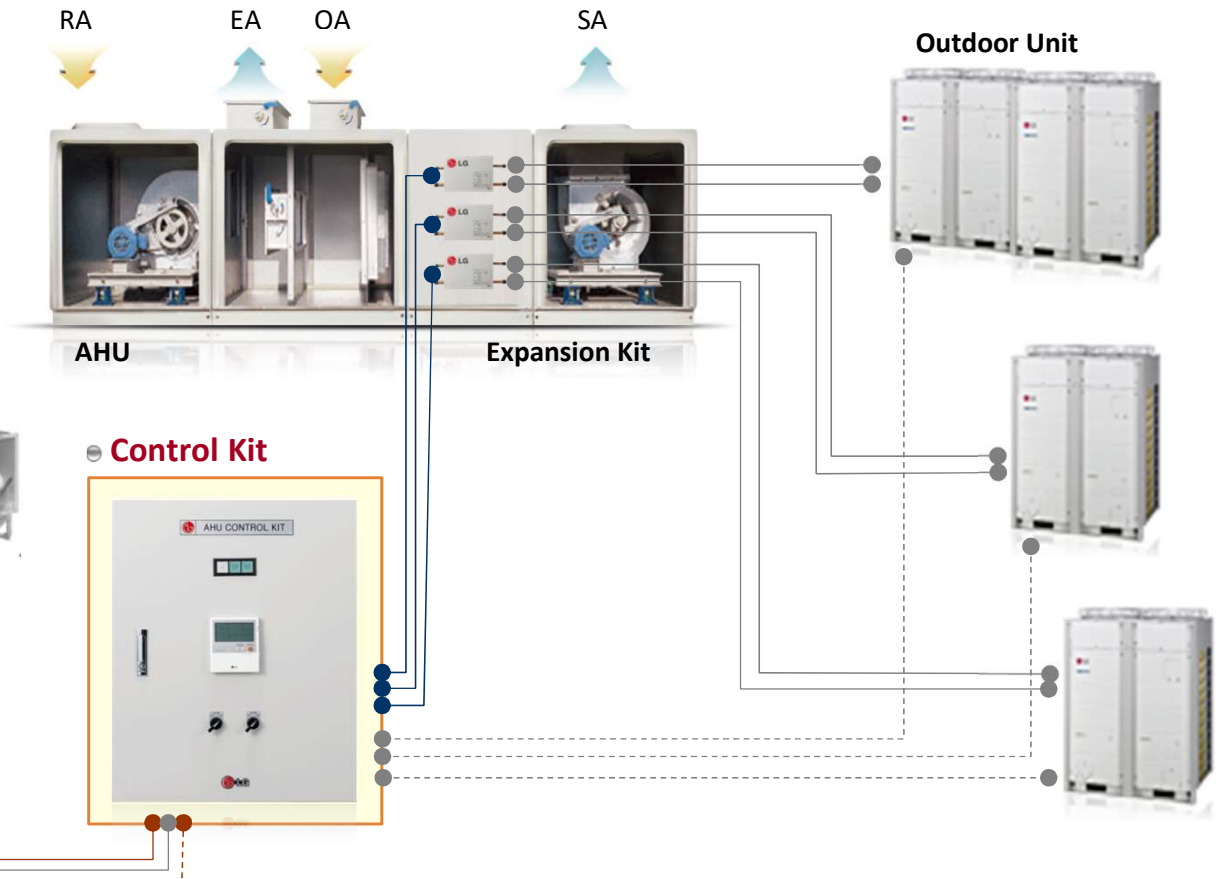


4 -2 -. AHU KIT / Aplicaciones

En la aplicación de Gran capacidad AHU es posible si se utiliza Control KIT and TXV, y el control general utilizado durante la operación de la AHU , incluyendo Dámper Control etc. Etc es soportado (temperature/humidity, CO₂, smoke elimination, Damper, and etc.).

Large capacity with damper control (Multi ODU)

- Temp. Senor / RA, SA(essential), OA, Mix(optional)
- Humid. Senor / RA, SA, OA(optional)
- Damper Actuator / EA, OA, Mix(optional)
- Differential Pressure switch(optional)
- Valve for Humidifier(optional)
- CO₂ Sensor(optional)
- Smoke Detector(optional)

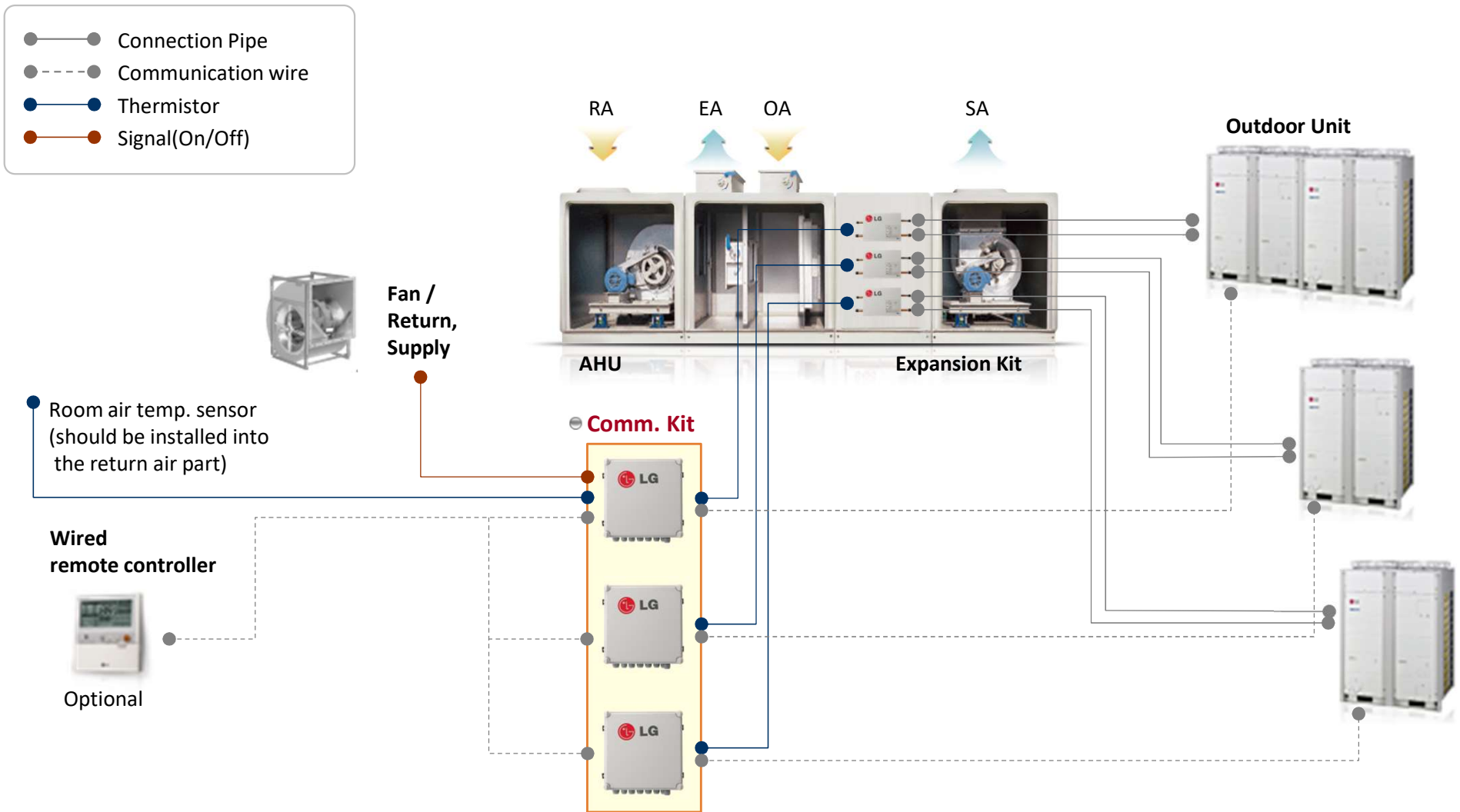


- | | | |
|------------------------------|-----------------------|----------------------------|
| ● — ● Connection Pipe | ● — ● Thermistor | ● - - - ● Signal (DC0~10V) |
| ● - - - ● Communication wire | ● — ● Signal (On/Off) | |

4 -2 -. AHU KIT / Aplicaciones

Cooling Only

 **Large capacity with comm. Kit** (Multi ODU, without damper control)

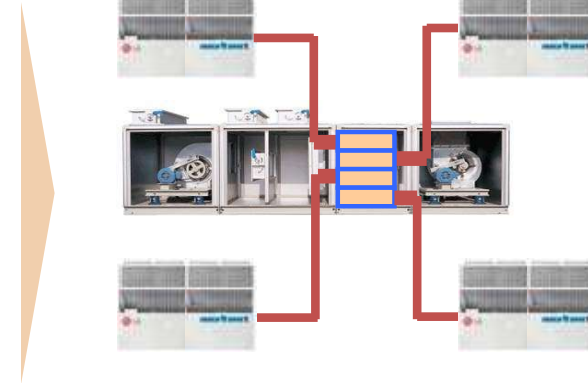


. AHU Outdoor / Outdoor unit selection

Outdoor unit capacity is selected by correcting allowance rate to the cooling capacity of direct expansion coil.

< Selection of direct expansion coil capacity >

	Cooling		Heating	
	Capacity (kcal/h)	Air in/out Temp(°C)	Capacity (kcal/h)	Air in/out Temp(°C)
AHU-1	103,600	28/17	102,600	-1/26
AHU-2	319,000	28/17	267,500	-1/26



1) Selection of basic load

1) In the case of selected load of AHU-2 (Q_Load), as it is 'Cooling load > Heating load', 'Cooling load of 319,000 kcal/hr' is selected as the basic load.

2) Allowance rate

2) Final load (Q_final) = 319,000 * 1.1(allowance rate 10%) = 350,900 kcal/hr

3) Selection of outdoor unit

3) Outdoor unit is selected with the basis of final load of Q_final(350,950 kcal/hr)
 *36HP (89,780 kcal/hr) *4 = 359,120kcal/hr > Q_final(350,900 kcal/hr)

∴ Final selection of outdoor unit : 36HP * 4EA

. AHU Outdoor / Outdoor unit selection / Charge Additional Refrigerant

* For example (Method of EXCEL)

 Input Data
 Calculation Data

1. Additional Refrigerant charge calculation of AHU coil [kg]

① Pipe cross-sectional area calculation

Area(cm ²)	ID(cm)
0.503	0.8

② Tube length calculation

Tube length of one pipe(cm)	Step	Row	Total Length(cm)
131.5	56	3	22092

③ U-bend length

U-bend length(cm)	No. of U-bend	Total Length(cm)
4.5	56	252

④ HEX Volume (cm³)

11,231

(A) Additional Refrigerant charge (kg)	3.3
--	-----

2. Additional Refrigerant charge calculation of extended pipe [kg]

Liquid tubing	Length (m)	Refrigerant (kg/m)	Additional charging quantity(kg)
Φ 22.2		0.35	0
Φ 19.05		0.30	0
Φ 15.88	5	0.17	0.87
Φ 12.7		0.12	0
Φ 9.52		0.06	0
Φ 6.35		0.02	0
(B) Additional Refrigerant charge (kg)			0.9

* Total additional refrigerant charging amount of AHU [kg]

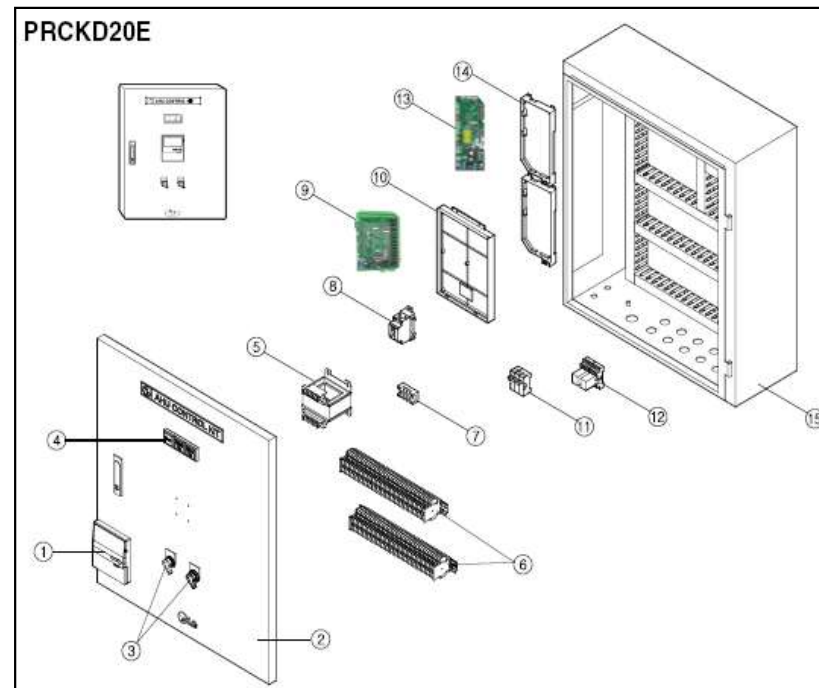
(A) + (B)	4.2
-----------	-----

4-3. AHU Control KIT / Detalles

El Control KIT esta compuesto por la Main PCB y Communication PCB y la PCB con decisión de la capacidad



(Front & Inside View)



(Exploded View)

Item	Model	Specification
Control Kit	PRCKD20E	- . ODU 1~4 Set Combine
	PRCKD40E	- . ODU 5~8 Set Combine

No.	Part name	Specification	Quantity	No.	Part name	Specification	Quantity
①	Wired remote controller	-	1	⑨	AHU Controller	-	1
②	Door	1.6T	1	⑩	Controller Case	-	1
③	Selection switch	ON/OFF	2	⑪	Fuse	250V, 5A	3
④	Lamp	Power/SA/RA	3	⑫	Relay	5A	2
⑤	Transformer	Input: 220V Output: 24V Capacity: 100VA	1	⑬	Communication PCB	-	2(4)
⑥	Terminal block #1	15A * 1.25mm ²	2	⑭	Communication PCB case	-	2(4)
⑦	Terminal block #2	20A * 1.25mm ²	1	⑮	Control box	1.6T	1
⑧	Wiring circuit breaker	15A	1			-	

* () refers to the quantity applied to the PRCKD40E model.

Control composition consists of five parts.

I . Multi V AHU Part(LG)	II . Controller Part	III . Sensor Part
IV . Damper Part	V . AHU Body	

I Multi V AHU Part (LG)

① Multi V ODU ② EEV ③ TXV

① ② ③

II Controller Part

① Control Kit ② Comm.Kit
③ Wired Remote Controller ④ AC Manager ⑤ BMS

⑤ ④ ③ ① ②

(For TXV) ① (For EEV) ②

III Sensor Part

① temp / humidity sensor ② CO₂ sensor
③ smoke detect sensor ④ differential pressure sensor

① ② ③ ④

(option) (option)

RA EA OA

① RA fan ② SA fan

④ humidity valve (option)
③ humidifier (option)

IV Damper Part

① EA damper ② OA damper ③ Mixing damper

① ② ③

V AHU body

① RA Fan ② SA Fan ③ humidifier ④ humidity valve

① ② ③ ④

4-3. AHU Communication KIT / Detalles

Comm. KIT is connected to outdoor unit (less than 10 hp) with the ratio of 1:1 only.



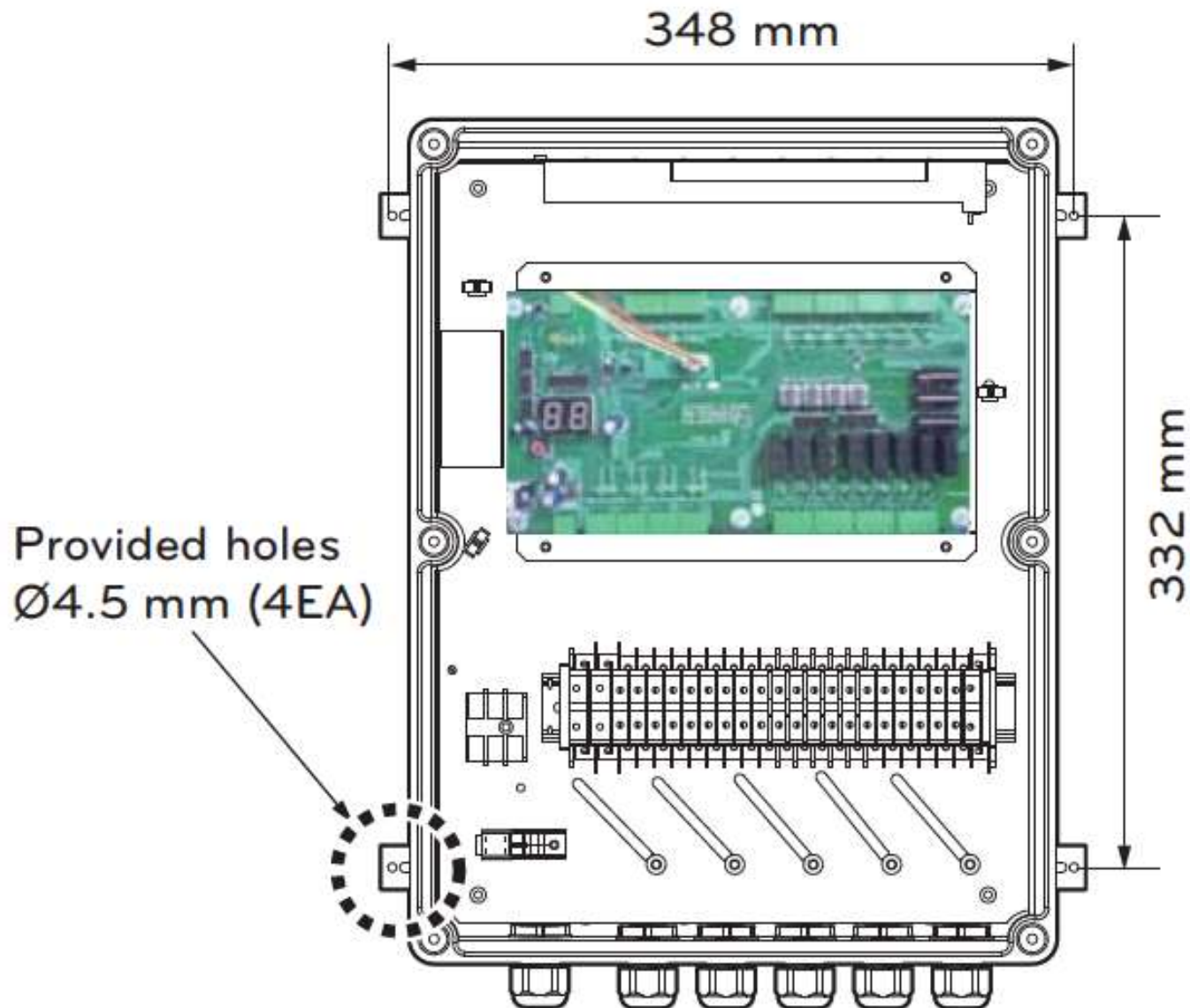
(outside)



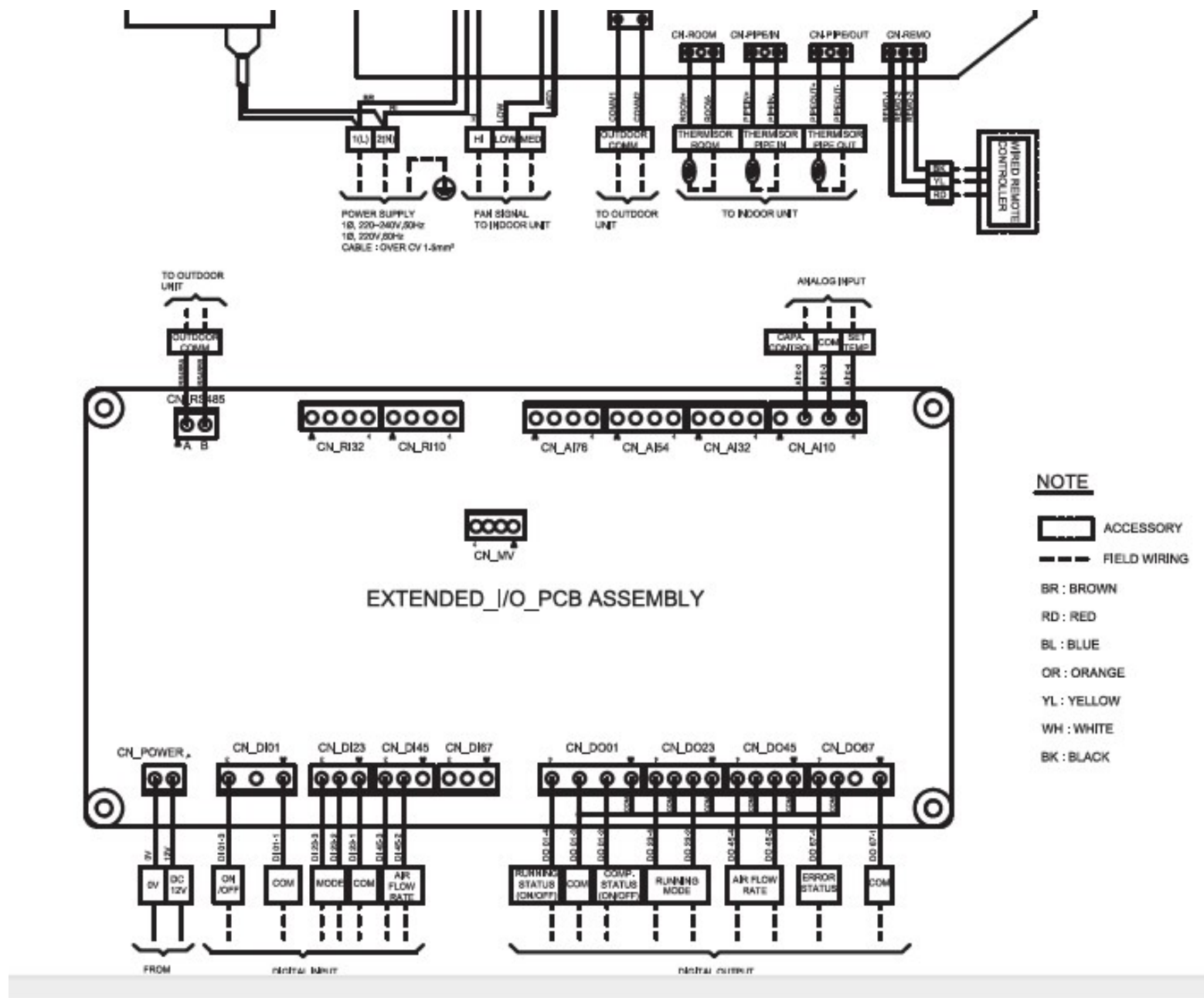
(inside)

Item	Model	Specification	Remarks.
Comm. Kit	PRCKA0	- . 28K, 36K, 42K, 48K, 76K, 96K IDU - . Capacity selection :Option PCB (included Kit)	

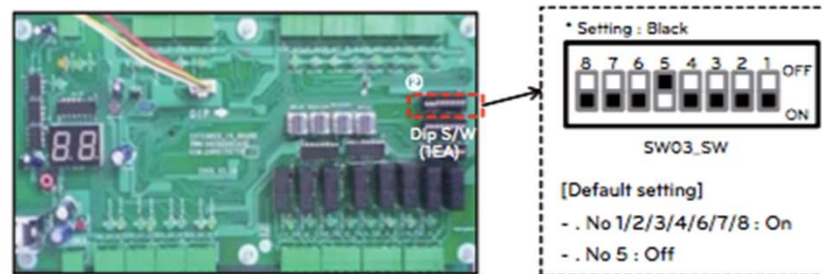
4-3. AHU Communication KIT / Detalles



4-3. AHU Communication KIT / Detalles



4-3. AHU Communication KIT / Detalles



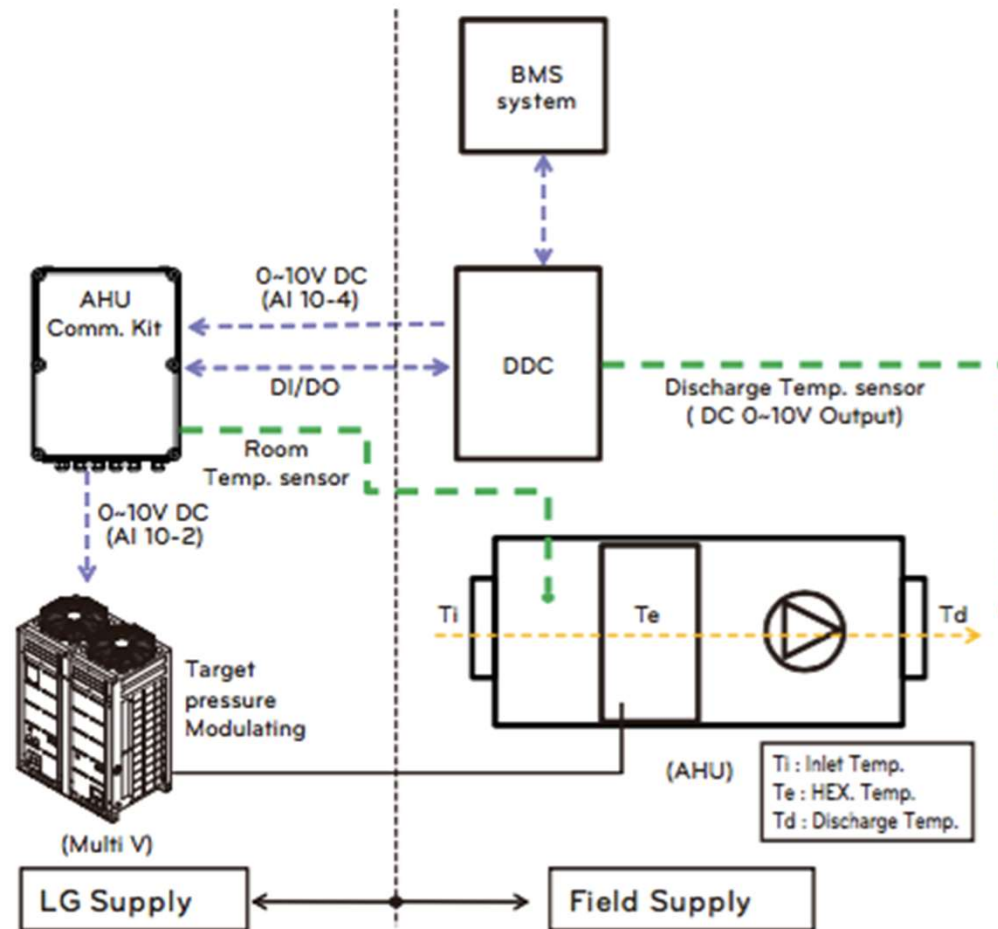
Terminal Block No.	Connection	Function	Remark.
L / N	Power Supply	220~240V, 50Hz, 1Phase 220V, 60Hz, 1Phase	
1~2 / 24	To Indoor Unit	Fan Signal	High/Mid/Low
3 ~ 8	To EEV Kit	EEV Kit	-
10~11	To Outdoor Unit	Communication Line	-
12~13	To Indoor Unit	Room Thermistor	-
14~15		Pipe In Thermistor	-
16~17		Pipe Out Thermistor	-
18~20		Remote Controller	-
22~23	To Outdoor Unit	RS485 Communication	-
26	Digital Input	DI 01-3	Operation ON/OFF
27		DI 01-1	Common Line
28		DI 23-3	Mode Change
29		DI 23-2	
30		DI 23-1	Common Line
31		DI 45-3	Air Flow Rate
32	Digital Output	DI 45-2	
34		DO 01-4	Running Status (ON/OFF)
35		DO 01-3	Common Line
36		DO 01-2	Comp. Status (ON/OFF)
37		DO 23-4	Running Mode
38		DO 23-2	
39		DO 45-4	Air Flow Rate
40		DO 45-2	
41	Analog Input	DO 67-4	Error Status
42		DO 67-1	Common Line
44		AI 10-2	Capacity Control
45		AI 10-3	Common Line
46		AI 10-4	Room Temperature Setting

S/W name	No	Item	On	Off	Note
SW03_SW	1	RS485/IDU	RS485	Not available	- RS485 : Connect to INTERNET A/B on ODU unit
	2	Master/Slave	Master	Slave	- Master is default for single unit installation - Master is only one among multiple unit
	3	Control enable / disable	DI/DO enable	DO only enable	- Enable : DI/DO are enable - Disable : DO only are enable
	4	Room Temperature setting 1	AI	Rot.S/W	- AI : Input as analog input (Controlled through DDC) - Rot. S/W : manual setting
	5	Air flow rate	High/Low	High/Mid/Low	- On : Mid step is not available. (Mid step is displayed as current step)
	6	Room Temperature setting 2	Default	AI / Rot. S/W	Room Temperature Default setting - On : Default(Cooling 18°C, Heating 30°C) - Off : Room air(or return air) temperature control using AI Signal and Rotary S/W (Refer to the DIP S/W No.4)
	7	Not available	-	-	-
	8	Flash Writing	Normal	On-boarding	- Default : On

4-3. AHU Communication KIT / Detalles

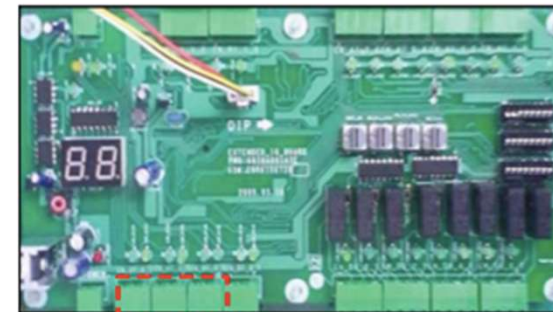
AHU KIT WIRING CONFIGURATION WITH DDC

Configuration concept



4-3. AHU Communication KIT / Details

Communication KIT / DI



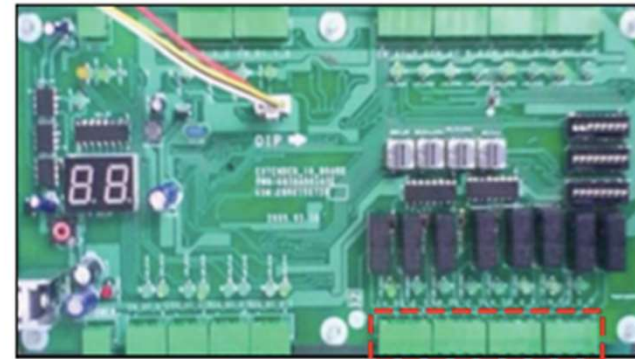
Digital Input(5ch)

DI Specification
: Non-Voltage Contact

Wiring No.	Input		Logic	Conditions
	Open	Short		
DI 01-3	Operation Off	Operation On	- When short, the fan signal (FAN) is On and ODU will start to run. - When open, ODU will off and FAN changes to Off.	- Operation mode : DI 23-3/23-2 - Fan mode : DI 45-3/45-2
DI 23-3	FAN Operation	Cooling or Heating	- When open, FAN is On but ODU will not run. - When short, FAN is On and mode is decided DI 23-2. - If no more cooling and heating is necessary, DI 23-3 is open and DI 01-3 is On.	- DI 01-3 : short
DI 23-2	Cooling Operation	Heating Operation	- When open, mode is cooling - When short, mode is heating	- DI 01-3 : short - DI 23-3 : short
DI 45-3	Low FAN	Mid FAN	- When DI 45-3/45-2 are open : Low fan mode and FAN is On. - When DI 45-3 is short : Mid fan and FAN is On.	- DI 01-3 : short - Operation mode : DI 23-3/23-2
DI 45-2		High FAN	- When DI 45-2 short : High fan and FAN is On. - When DI 01-3 is open : FAN is Off, DI 45-3,/45-2 are neglected.	

4-3. AHU Communication KIT / Details

Communication KIT / DO



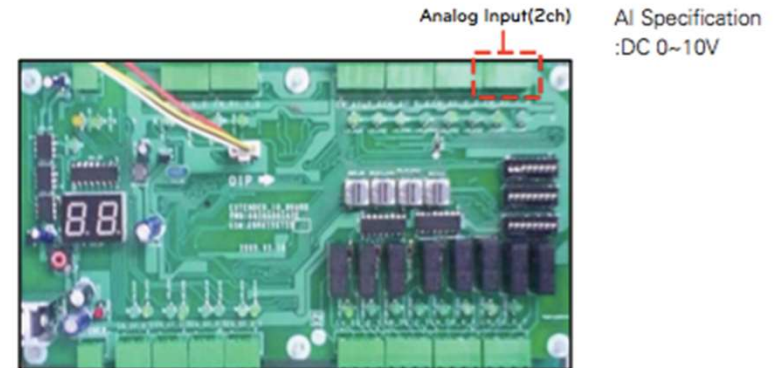
DO Specification
: AC 250V, DC 30V, 1A

Digital Output(7ch)

Wiring No.	Output		Logic
	Open	Short	
DO 01-4	Operation On	Operation Off	- When DI 01-3 is short, ODU and FAN are On. - When DI 01-3 is open, ODU and FAN are Off.
DO 01-2	Compressor is Off	Compressor is On	- When ODU compressor is running, it is short. - When ODU compressor is off, it is open
DO 23-4	Cooling / Heating Defrosting / FAN		- When DO 23-4 / 23-2 are open, it is ventilation mode. - When DO 23-4 is open, DO 23-2 is short, it is defrosting during heating. FAN can be OFF if PIPE_IN and PIPE_OUT are less than 20°C. - When DO 23-4 is short, DO 23-2 is open, it is cooling. - When DO 23-4 is short, DO 23-2 is short, it is heating - Defrosting mode only works when it is connected with ODU.
DO 23-2			
DO 45-4	Low FAN	Mid FAN	- When DO 45-4 / DO 45-2 are open, it is low fan mode. - When DO 45-4 is short and DO 45-2 is open, it is mid fan mode.
DO 45-2		High FAN	- When DO 45-2 is short, it is high fan mode (DO 45-4 is neglected).
DO 67-4	No Error	Error Occurred	- When DO 67-4 is short, ODU has error and ODU stops FAN is Off.

4-3. AHU Communication KIT / Detalles

Communication KIT / Control de temperatura de descarga y Capacidad

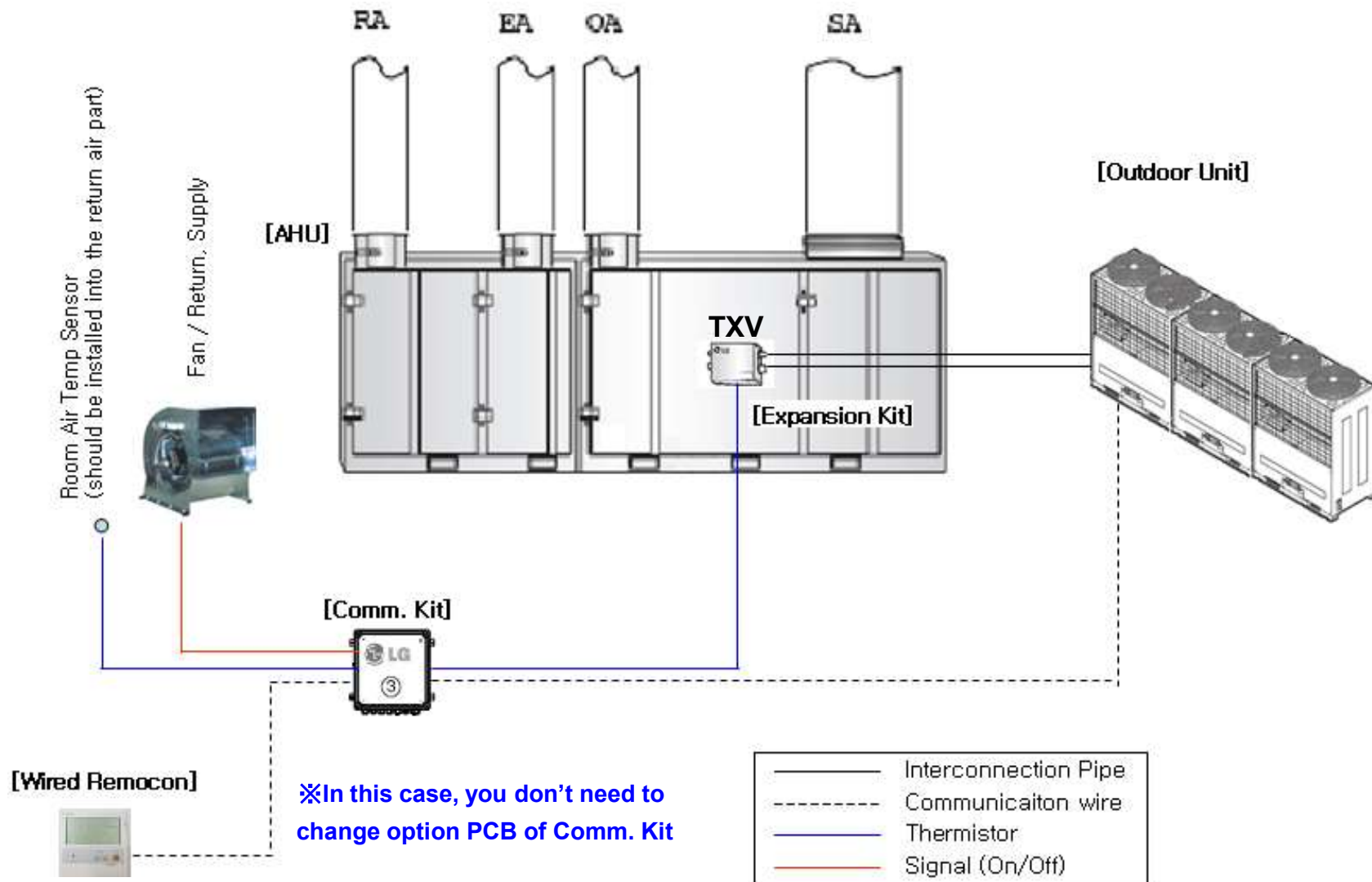


Discharge Temperature Control through controlling of ODU capacity

AI No.	Input voltage [Vdc]	Low [Vdc]	High [Vdc]	Capacity of unit [%]	Cooling		Heating		Control
					Target Low Pressure [kPa]	Temperature at HEX [°C]	Target High Pressure [kPa]	Temperature at HEX [°C]	
AI 10-2	0	0	0.4	No limit	-	-	-	-	DI should be decided.
	1	0.6	1.4	100	800	10.5	3,000	49.2	DI will determine fan mode and operation mode.
	2	1.6	2.4	90	830	11.3	2,990	49.0	
	3	2.6	3.4	80	870	12.5	2,730	45.1	
	4	3.6	4.4	70	930	14	2,560	42.5	
	5	4.6	5.4	60	990	15.8	2,340	38.9	
	6	5.6	6.4	50	1,070	17.9	2,080	34.1	
	7	6.6	7.4	45	1,100	19	1,950	31.5	
	8	7.6	8.4	40	1,160	20.3	1,800	28.4	
	9	8.6	9.4	Comp. off	-	-	-	-	If it is 9V, DO 01-4 is short, DO 01-2 is open.
	10	9.6	10	All off	-	-	-	-	ODU and fan are Off.

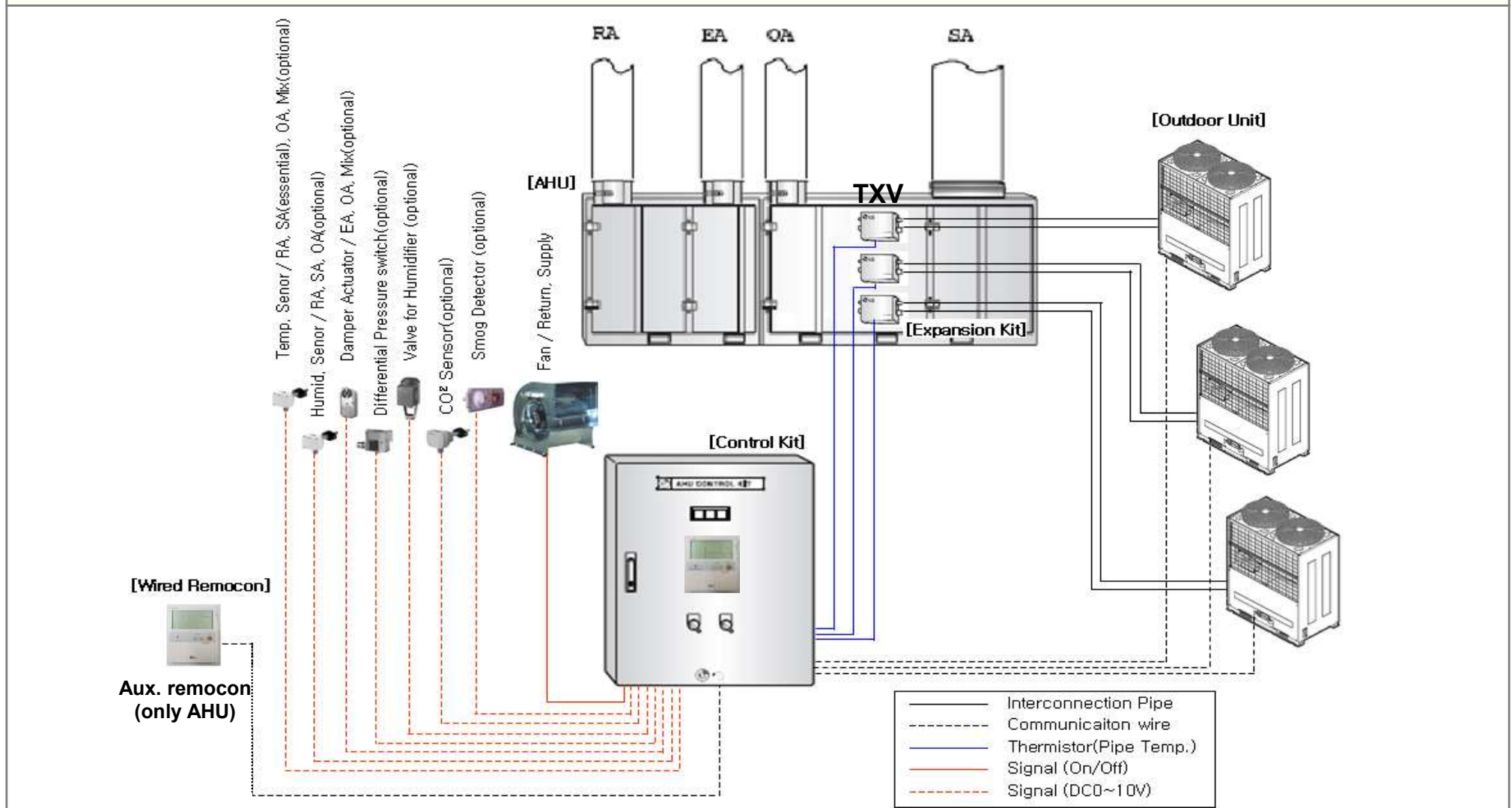
Aplicación AHU de gran capacidad es posible mediante la utilización de Comm. No se admite el Kit y válvula de expansión, y en este caso, otra de control que incluye Damper Control etc..

Large capacity with comm. kit (AHU 1 : 1 Matching, w/o damper control)



Aplicación AHU de gran capacidad es posible mediante la utilización de KIT Control y TXV, y el control general que se utiliza durante el funcionamiento AHU incluyendo compuerta de regulación etc. es soportable (temperatura / humedad, CO2, la eliminación de humo, Damper, y etc.).

Large capacity with damper control (Multi ODU)



EEV. KIT is connected to outdoor unit (less than 10 hp) with the ratio of 1:1 only.



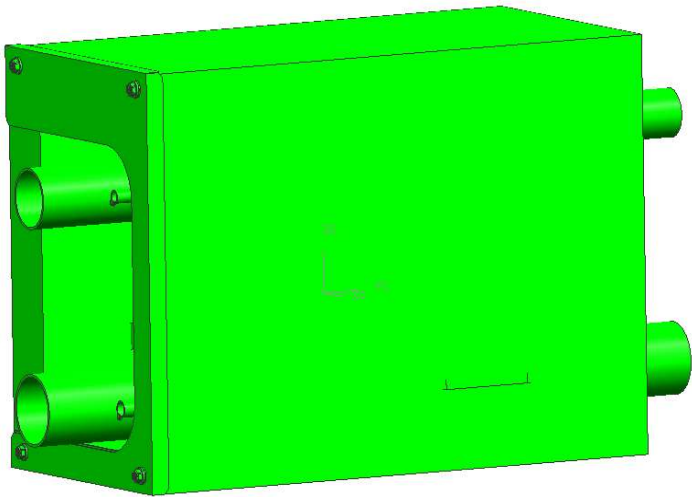
(outside)



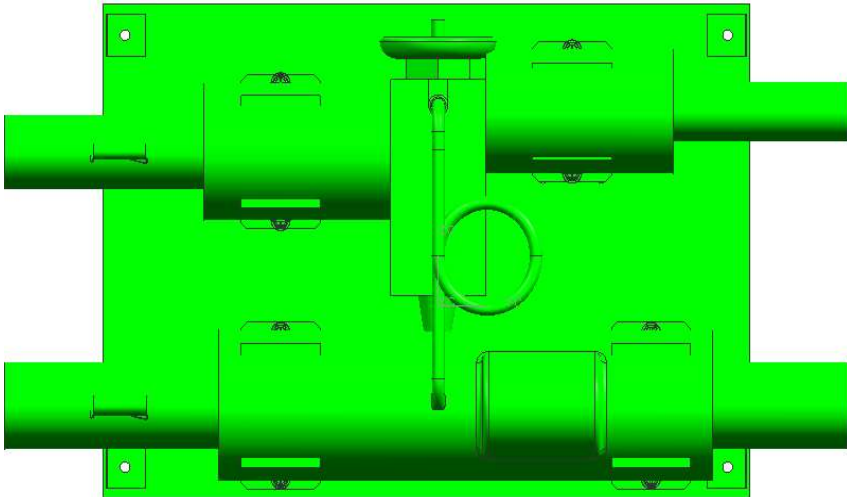
(inside)

Item	Model	Specification	Remarks.
EEV Kit	PRLK048A0	-. Capacity Range : 28~96kBtu/h	

TXV KIT esta compuesto por la TXV main body, check valve, y el ecualizador de presión



(Outside)



(Inside)

Item	Model	Specification	Remarks.
Expansion Kit	PATX13A0E	-. ODU Capacity : 8~16HP	
	PATX20A0E	-. ODU Capacity : 18~26HP	
	PATX25A0E	-. ODU Capacity : 28~36HP	
	PATX35A0E	-. ODU Capacity : 38~42HP	

Tanto el sensor como el actuador deben ajustarse siguiendo las especificaciones para cada Kit de Control

Item		Specification	Recommend (Model)	Remarks.
Damper Actuator 15Nm		- AC24V Power - DC 0~10V Output signal - 15Nm Torque - Positioning time : 150s - Angular rotation : 90°	GEB161.1E	
Duct Temp & Humidity Sensor		- AC24V Power - DC 0~10V Output signal - Temp : -40~70°C - Humidity : 0~95%RH	QFM9160	
Duct Temp Sensor		- AC24V Power - DC 0~10V Output signal - Temp : -50~50°C	QAM2161.040	
Duct DP Switch (Filter)		- AC24V Power - DC 0~10V Output signal - 0~1,000 Pa	QBM66.204	
Duct CO2 Sensor		- AC24V Power - DC 0~10V Output signal - 0~2,000 ppm	QPM2100	
Duct Smoke Detector		- AC24V Power	SD500MV	

Componentes para DX AHU System

DX AHU System is composed of AHU, outdoor unit and application Kit

Item			Model	Specification	Combination			Remarks.
Controller	Control Kit		PRCKD20E	- AHU Controller /Sensor Power Supply - ODU Comm. PCB / 1~4 Sets ODU Combine	●			
			PRCKD40E	- AHU Controller /Sensor Power Supply - ODU Comm. PCB / 5~8 Sets ODU Combine				
	Comm. kit		PRCKA0	- One Comm. Kit + One EEV Kit or Expansion Kit - ODU Capacity : 28K, 36K, 42K, 48K, 76K, 96K		●		Multi-V Outdoor
			PUCKA0	- One Comm. Kit - ODU Capacity : 18K, 24K, 30K, 36K, 42K, 48K, 60K			●	Universal Outdoor
Expansion	Expansion Kit		PATX13A0E	• ODU Capacity : 8~16HP	●	●		
			PATX20A0E	• ODU Capacity : 18~26HP				
			PATX25A0E	• ODU Capacity : 28~36HP				
			PATX35A0E	• ODU Capacity : 38~46HP				
			PATX50A0E	• ODU Capacity : 48~56HP				
	EEV kit		PRLK048A0	• Capacity : 28K, 36K, 42K, 48K, 76K, 96K		●		
Sensor	Damper Actuator 15Nm		GEB161.1E (Recommend)	- AC24V Power / DC 0~10V Output signal 15Nm Torque /Positioning time : 150s / Angular rotation : 90°	●			Local supply (1) Or (2) sensor is Necessary sensor [2EA(SA/RA)]
	Duct Temp & Humidity Sensor (1)		QFM9160 (Recommend)	- AC24V Power / DC 0~10V Output signal - Temp. Range : -40~70°C / Humidity : 0~95%RH	●			
	Duct Temp Sensor (2)		QAM2161.040 (Recommend)	- AC24V Power / DC 0~10V Output signal - Temp. Range : -50~50°C Necessary	●			
	Duct DP Switch (Filter)		QBM66.204 (Recommend)	- AC24V Power / DC 0~10V Output signal - Range : 0~1,000 Pa	●			
	Duct CO2 Sensor		QPM2100 (Recommend)	- AC24V Power / DC 0~10V Output signal - Range : 0~2,000 ppm	●			
	Duct Smoke Detector		SD500MV (Recommend)	• AC24V Power	●			

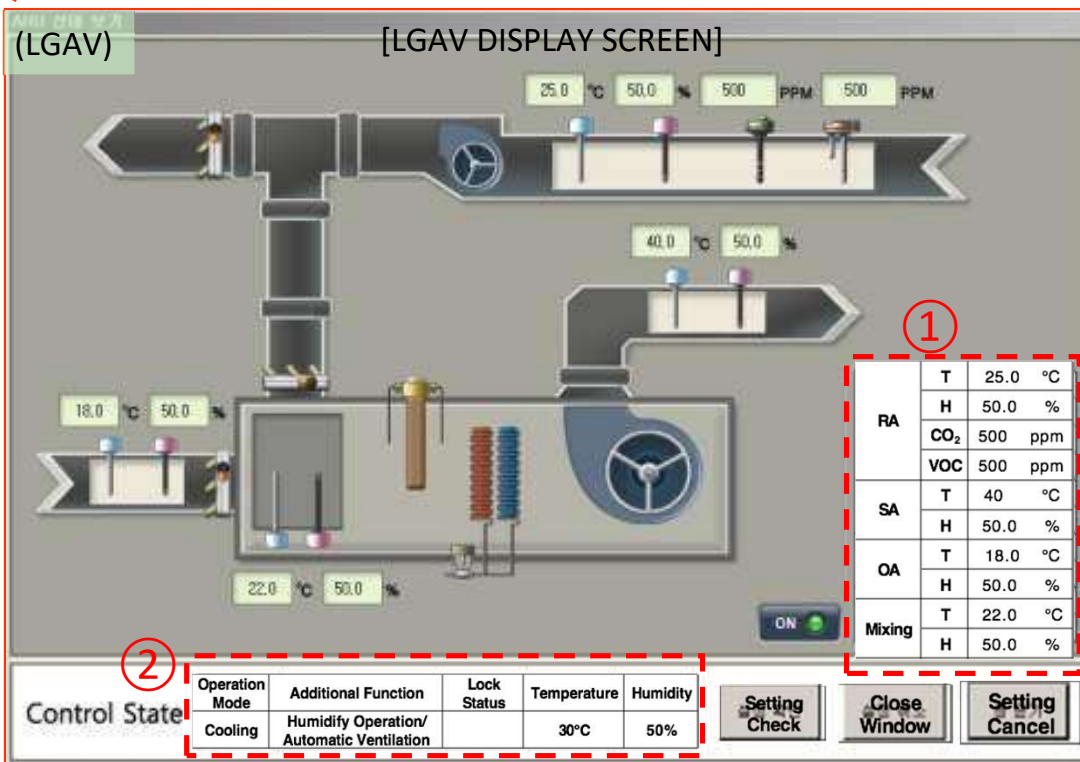
1. Test Run / On-site TEST

We can know the operating status of AHU with LGAV.

- Basically, we can know the temperature and humidity of Return air and Supply air.
- We can also know the temperature / humidity of Outside air, mixed air temperature and damper open rate as applied options



(Note Book)



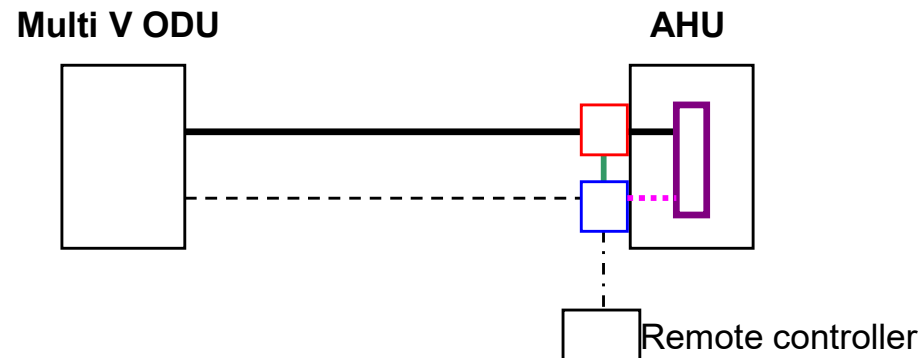
NO	Check Items
1	Check the temperature/humidity of each load in Part ① Cooling mode : Supply Air normal temp. range : 12~18°C Heating mode : Supply Air normal temp. range : 35 ~ 50°C
2	Check open rate of Damper In part ② Open rate for each mode can be modified by LGAV - During warming-up, normal open rate: EA : 0° , OA : 0° , MIX : 90° - Ventilation/Cooling/Heating mode, normal open rate : EA : 27° , OA : 27° , MIX : 63°
3	Check the status of operating information about outdoor units

Casos de Aplicación

DX AHU application scene - EEV kit & Comm. kit

Small scale : AHU ~ 10HP

DX AHU + Multi V



— Ref. pipe
 - - - - comm. line
 - · - · - R.C cable
 — EEV signal
 ······ Pipe sensor

□ EEV Kit
 □ Comm. Kit
 □ Coil

Note :

- When DX AHU is supplied with return air, this scene can be applied.
- If DX AHU is all fresh air type, it can be need additional devices.

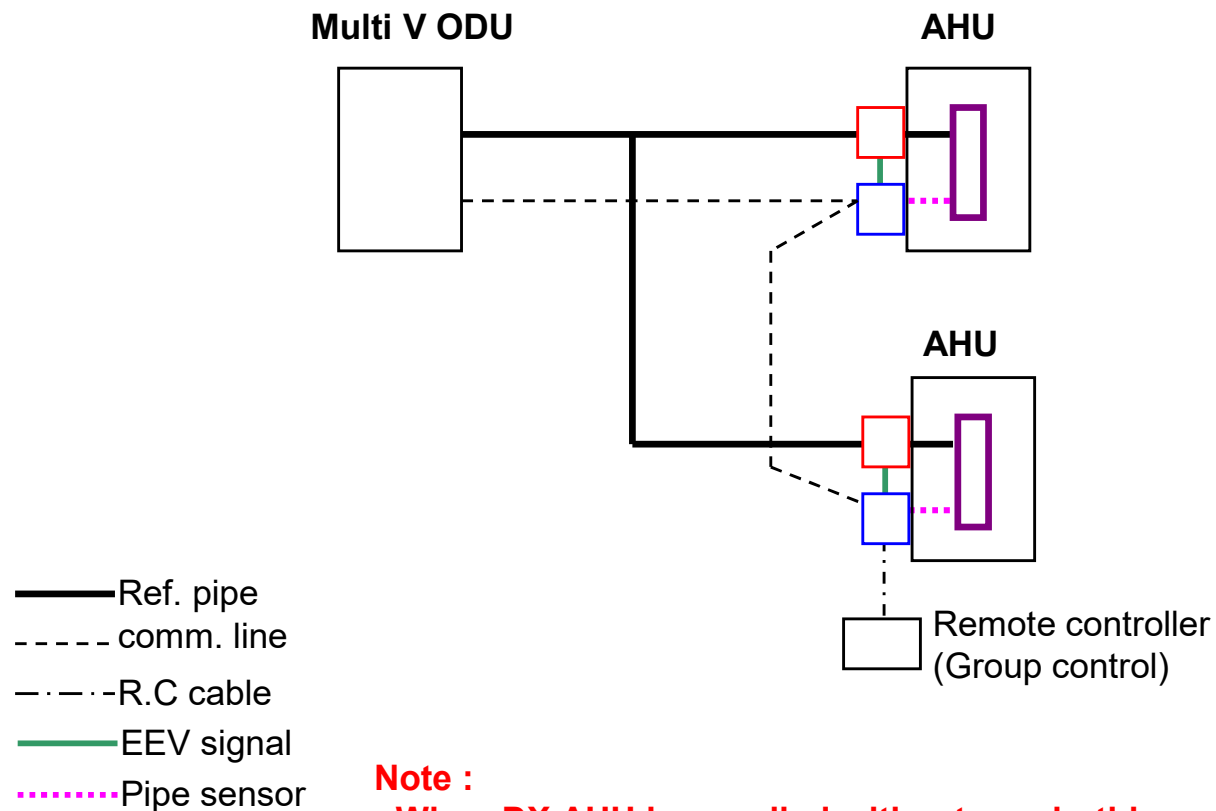
Item	Model	Specification
EEV	PRLK048A0	~ 10HP

Casos de Aplicación

DX AHU application scene - EEV kit & Comm. kit

- Small scale : AHU ~ 10HP

DX AHU + Multi V



Note :

- When DX AHU is supplied with return air, this scene can be applied.
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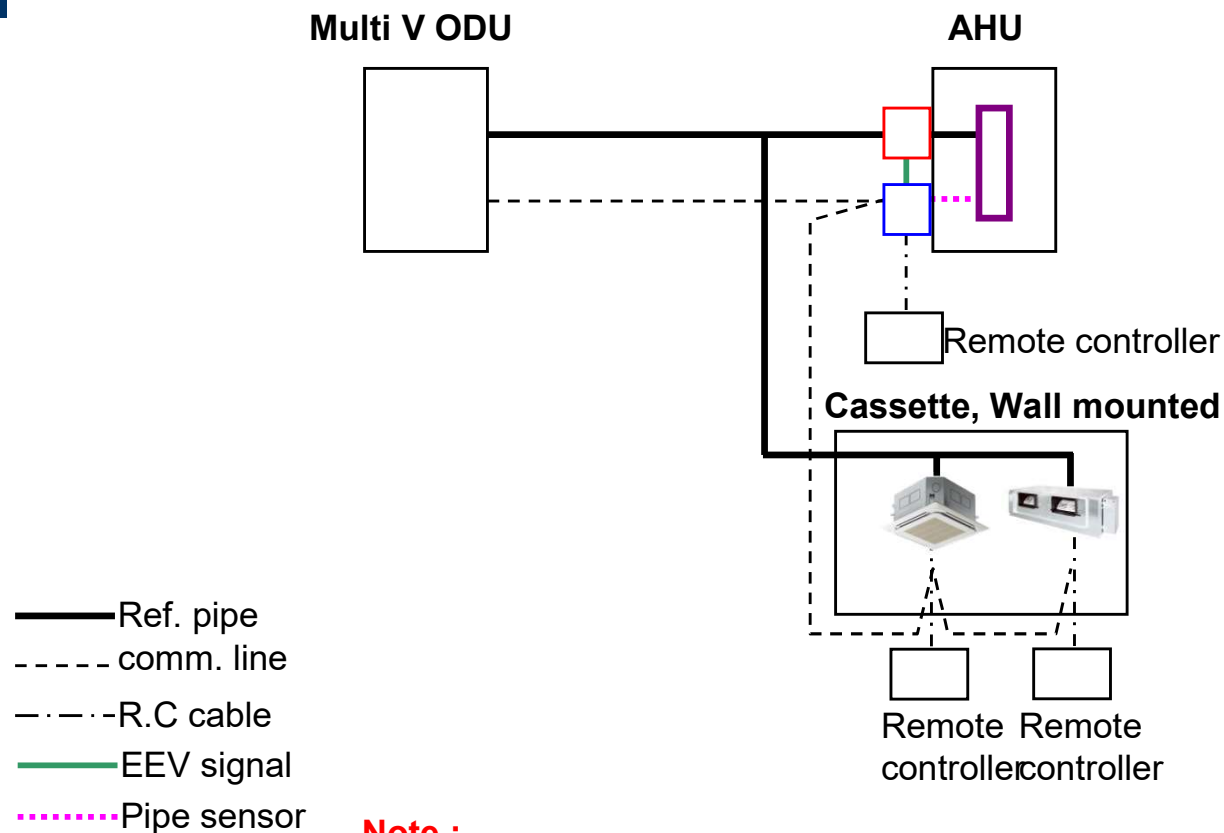
Item	Model	Specification
EEV	PRLK048A0	~ 10HP

Casos de Aplicación

DX AHU application scene - EEV kit & Comm. kit

Small scale : AHU ~ 10HP

DX AHU + Multi V



Note :

- When DX AHU is supplied with return air, this scene can be applied.
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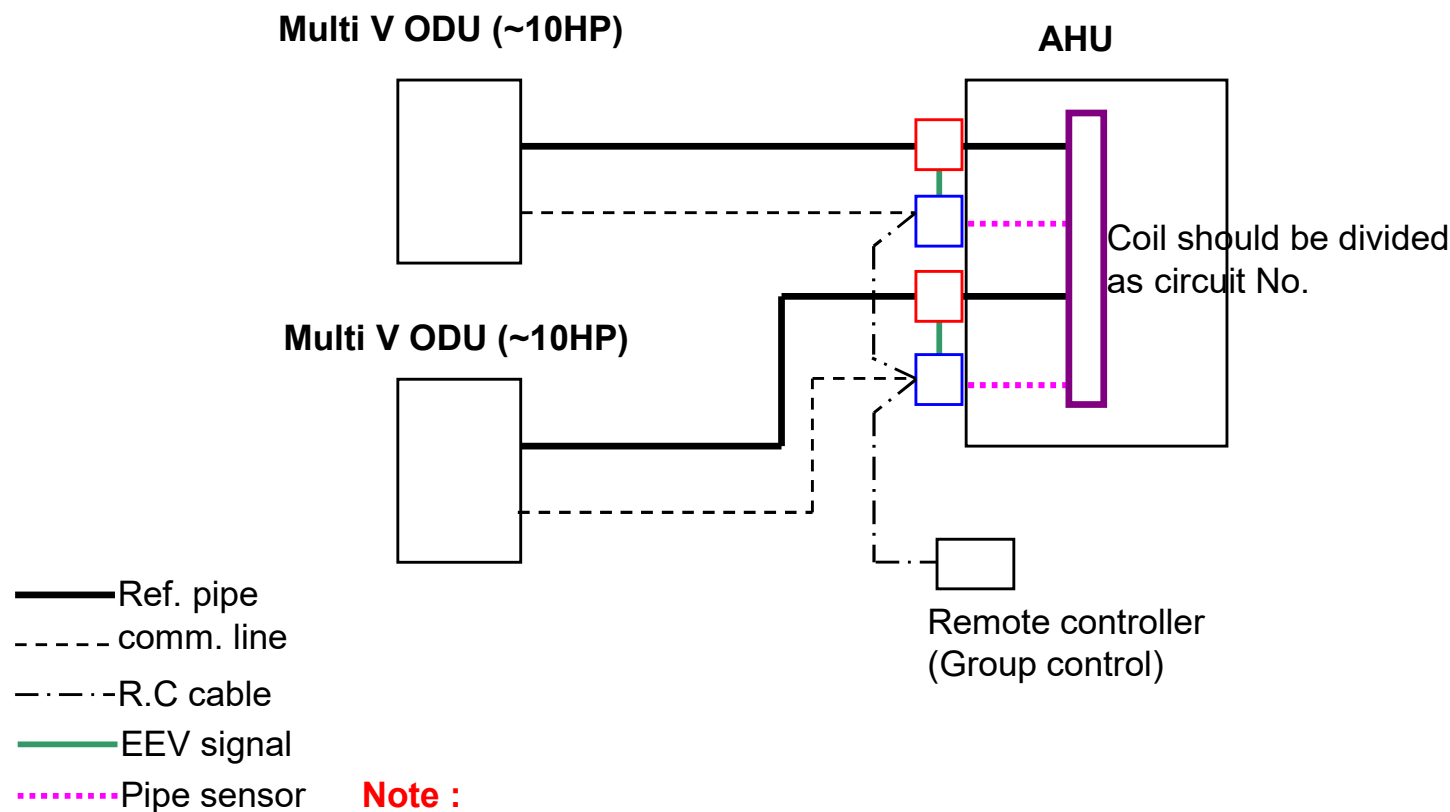
Item	Model	Specification
EEV	PRLK048A0	~ 10HP

Casos de Aplicación

DX AHU application scene - EEV kit & Comm. kit

- Medium scale : AHU 10 ~ 20HP

DX AHU + Multi V



- EEV Kit
- Comm. Kit
- Coil

Note :

- When DX AHU is supplied with return air, this scene can be applied.
- If DX AHU is all fresh air type, it can be need additional devices.

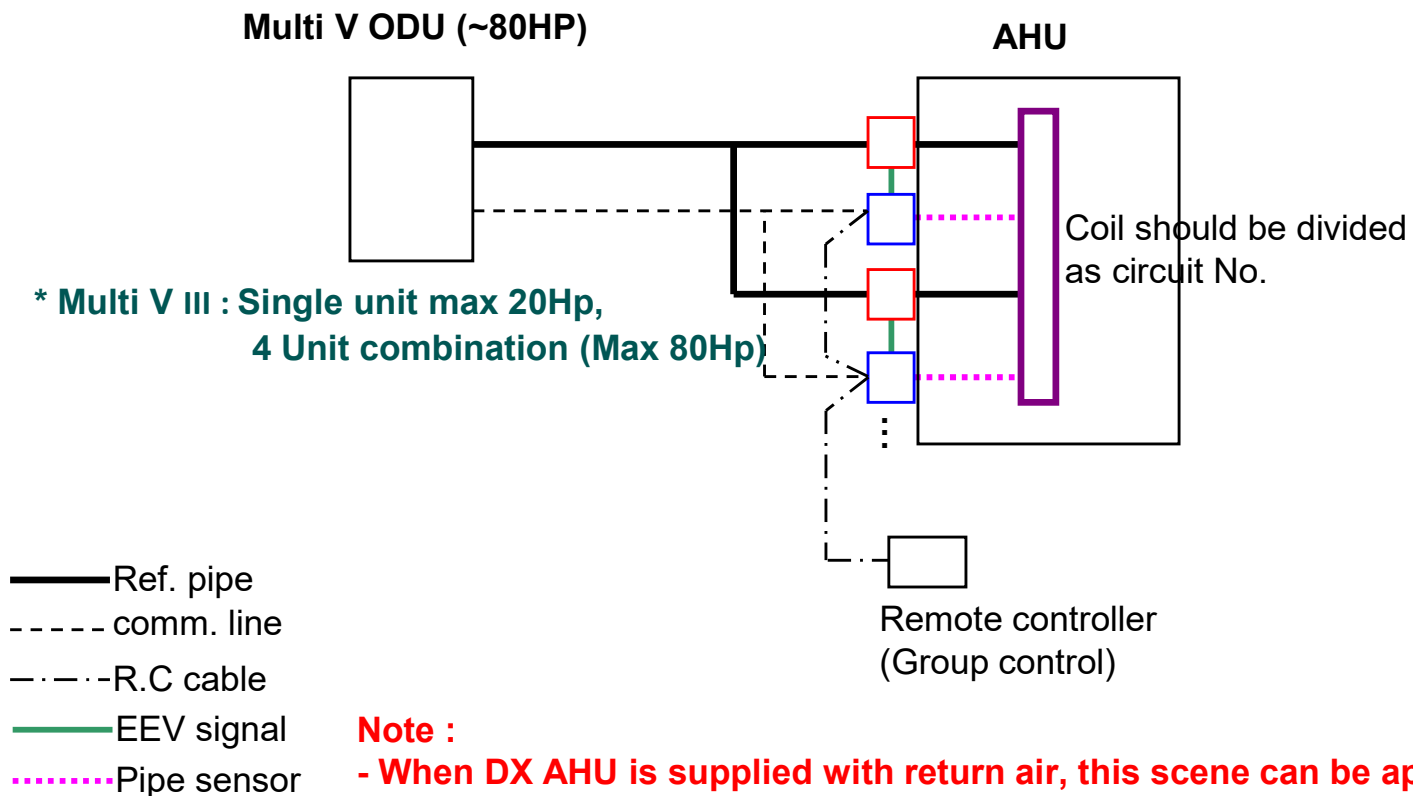
Item	Model	Specification
EEV	PRLK048A0	~ 10HP

Casos de Aplicación

DX AHU application scene - EEV kit & Comm. kit

Medium scale : AHU 10 ~ 80HP

DX AHU + Multi V



Note :

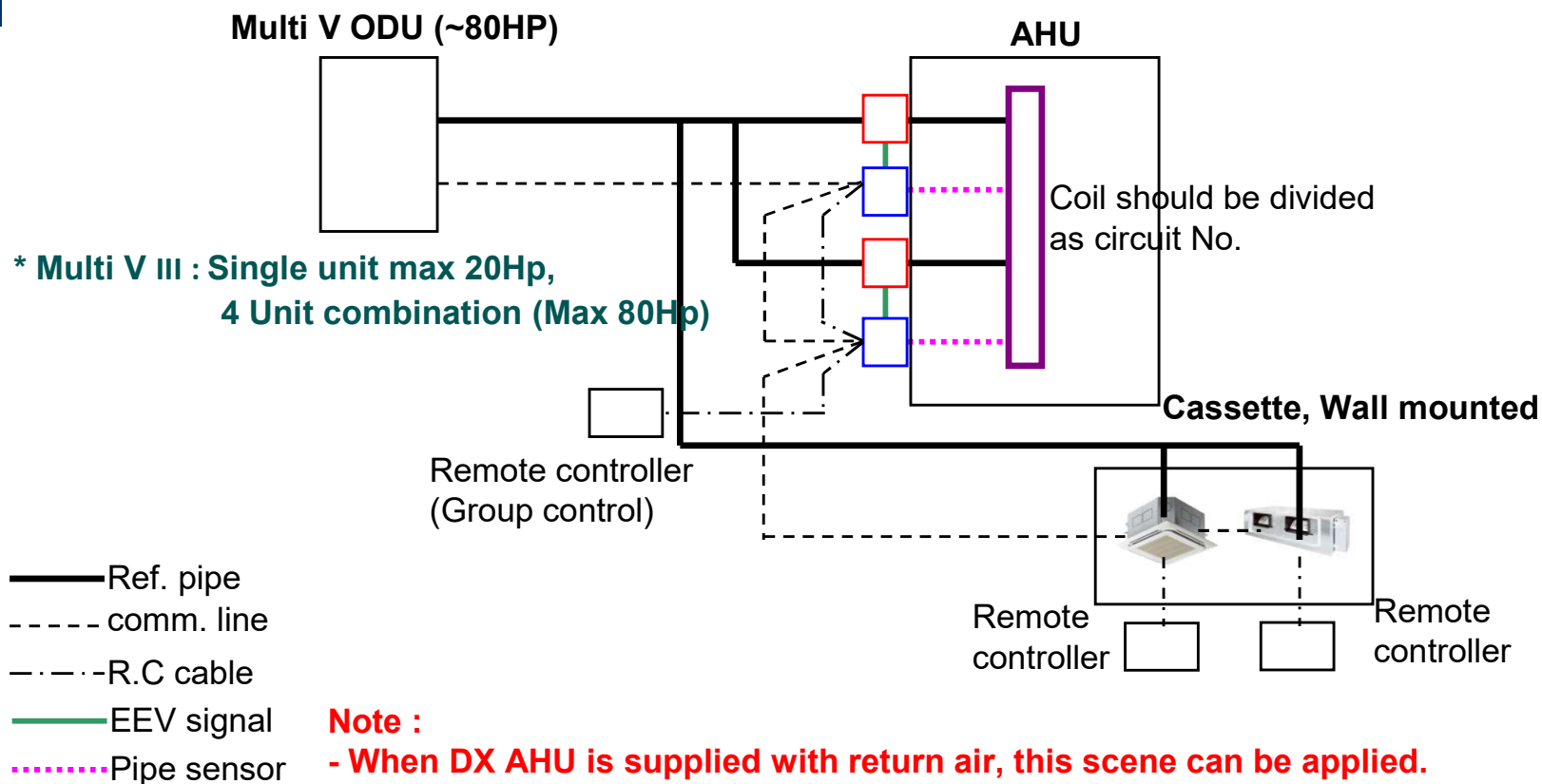
- When DX AHU is supplied with return air, this scene can be applied.
- If DX AHU is all fresh air type, it can be need additional devices.
- If AHU capacity is over 10HP, 1 comm. Kit & 1 EEV kit is necessary as each 10HP increase.

Item	Model	Specification
EEV	PRLK048A0	~ 10HP

Casos de Aplicación

DX AHU application scene - EEV kit & Comm. kit

Medium scale : AHU 10 ~ 80HP



Note :

- When DX AHU is supplied with return air, this scene can be applied.
- If DX AHU is all fresh air type, it can be need additional devices.
- If AHU capacity is over 10HP, 1 comm. Kit & 1 EEV kit is necessary as each 10HP increase.

Item	Model	Specification
EEV	PRLK048A0	~ 10HP

Casos de Aplicación

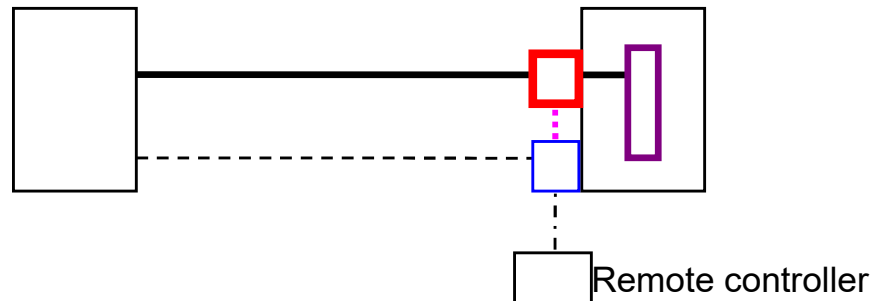
DX AHU application scene - Expansion kit & Comm. kit

Medium scale : AHU 8 ~ 56HP

DX AHU + Multi V

Multi V ODU (~56HP)

AHU



— Ref. pipe
- - - - comm. line
- · - · - R.C cable
· · · · · Pipe sensor

 Expansion Kit
 Comm. Kit
 Coil

Note :

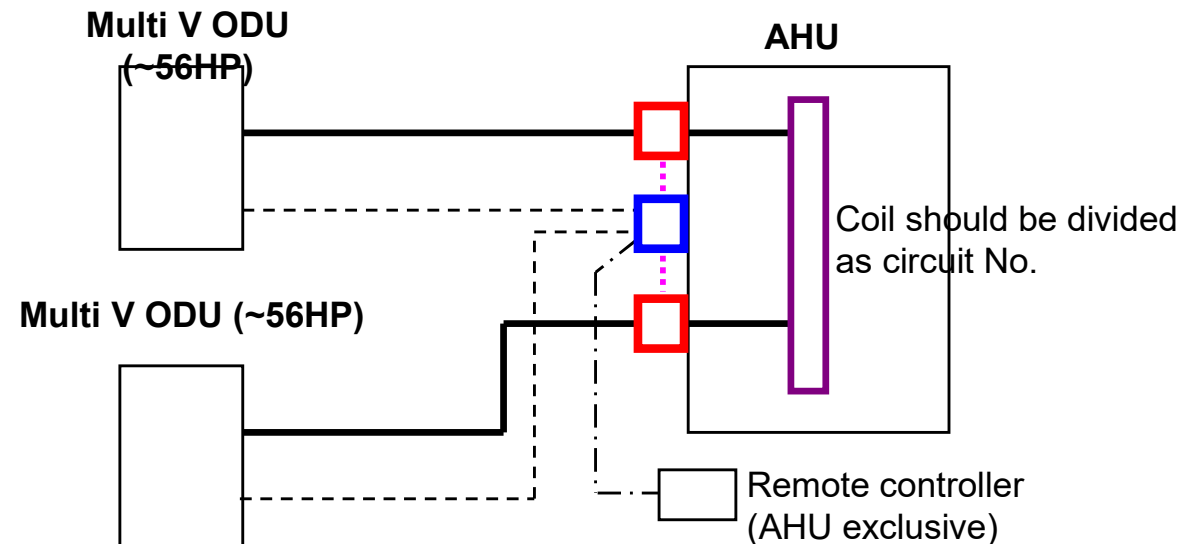
- When DX AHU is supplied with return air, this scene can be applied.
- If DX AHU is all fresh air type, it can be need additional devices.

Item	Model	Specification
Expansion kit	PATX13A0E	8~16HP
	PATX20A0E	18~26HP
	PATX25A0E	28~36HP
	PATX35A0E	38~46HP
	PATX50A0E	48~56HP

DX AHU application scene - Expansion kit & Control kit

DX AHU + Multi V

Large scale : AHU 56 ~ 448(56x8EA)HP



— Ref. pipe
 ---- comm. line
 - · - · - R.C cable
 Pipe sensor

□ Expansion Kit
 □ Control Kit
 □ Coil

Note :

- When DX AHU is supplied with return air, this scene can be applied.
- If DX AHU is all fresh air type, it can be need additional devices.

Item	Model	Specification
Expansion kit	PATX13A0E	8~16HP
	PATX20A0E	18~26HP
	PATX25A0E	28~36HP
	PATX35A0E	38~46HP
	PATX50A0E	48~56HP

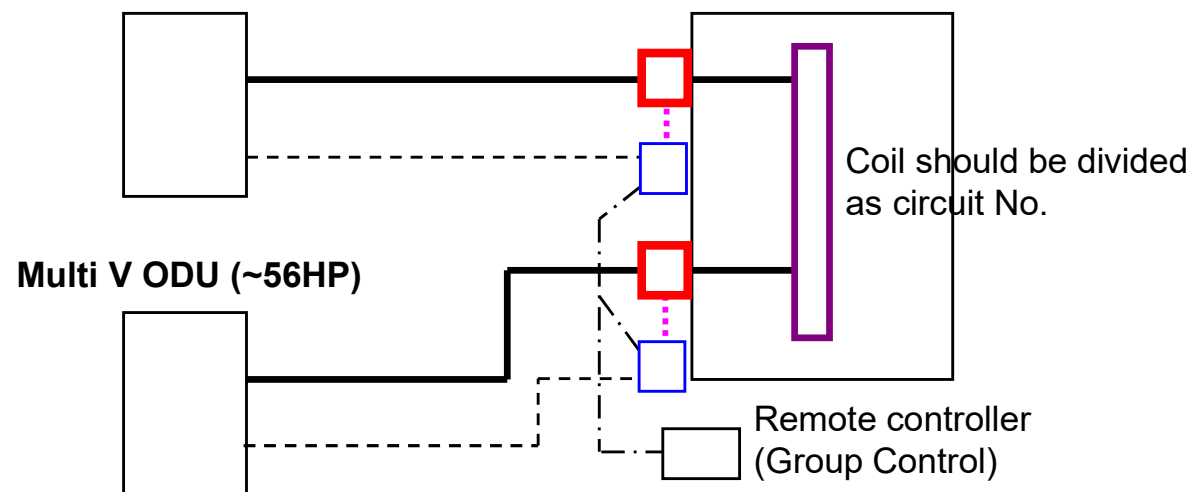
DX AHU application scene - Expansion kit & Comm. kit

DX AHU + Multi V

Large scale : AHU 56 ~ 448(56x8EA)HP

Multi V ODU (~56HP)

AHU



— Ref. pipe
 ---- comm. line
 - - - - R.C cable
 Pipe sensor

Expansion Kit
 Comm. Kit
 Coil

Note :

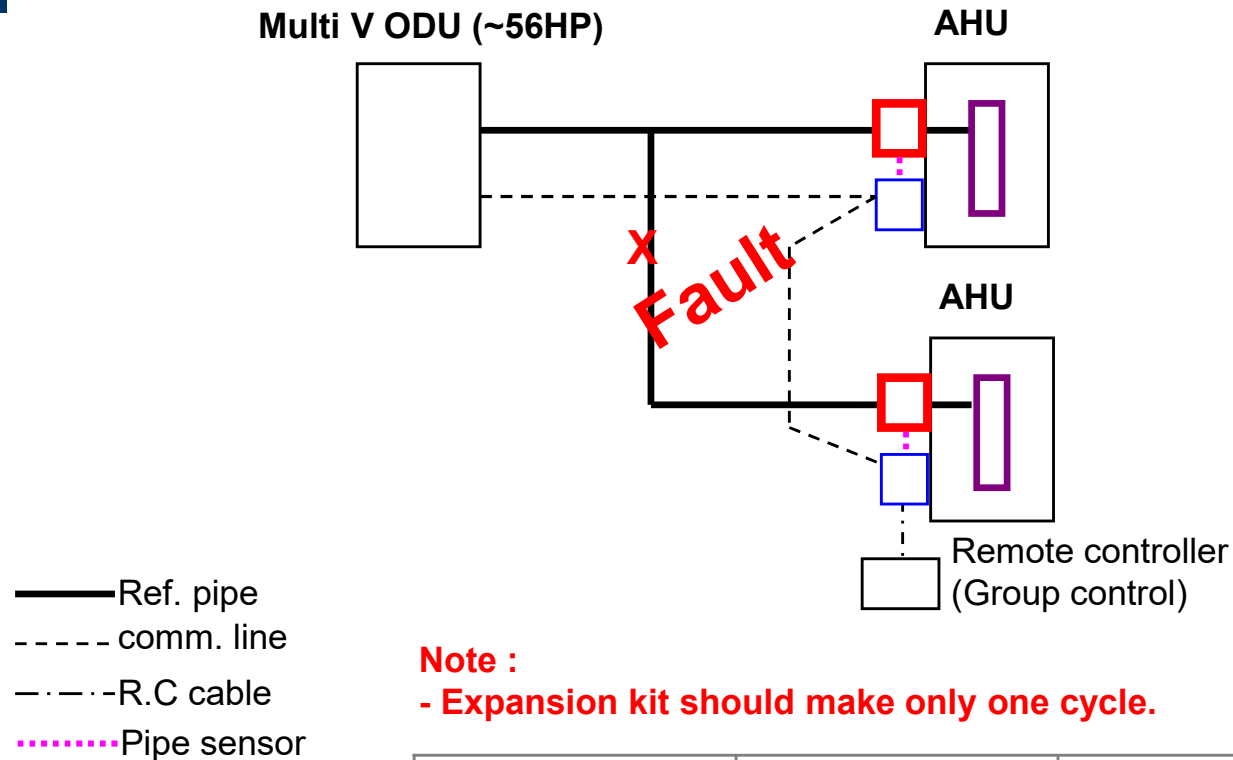
- When DX AHU is supplied with return air, this scene can be applied.
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Item	Model	Specification
Expansion kit	PATX13A0E	8~16HP
	PATX20A0E	18~26HP
	PATX25A0E	28~36HP
	PATX35A0E	38~46HP
	PATX50A0E	48~56HP

DX AHU application scene - Expansion kit & Comm. kit

Small scale : AHU ~ 56HP

DX AHU + Multi V

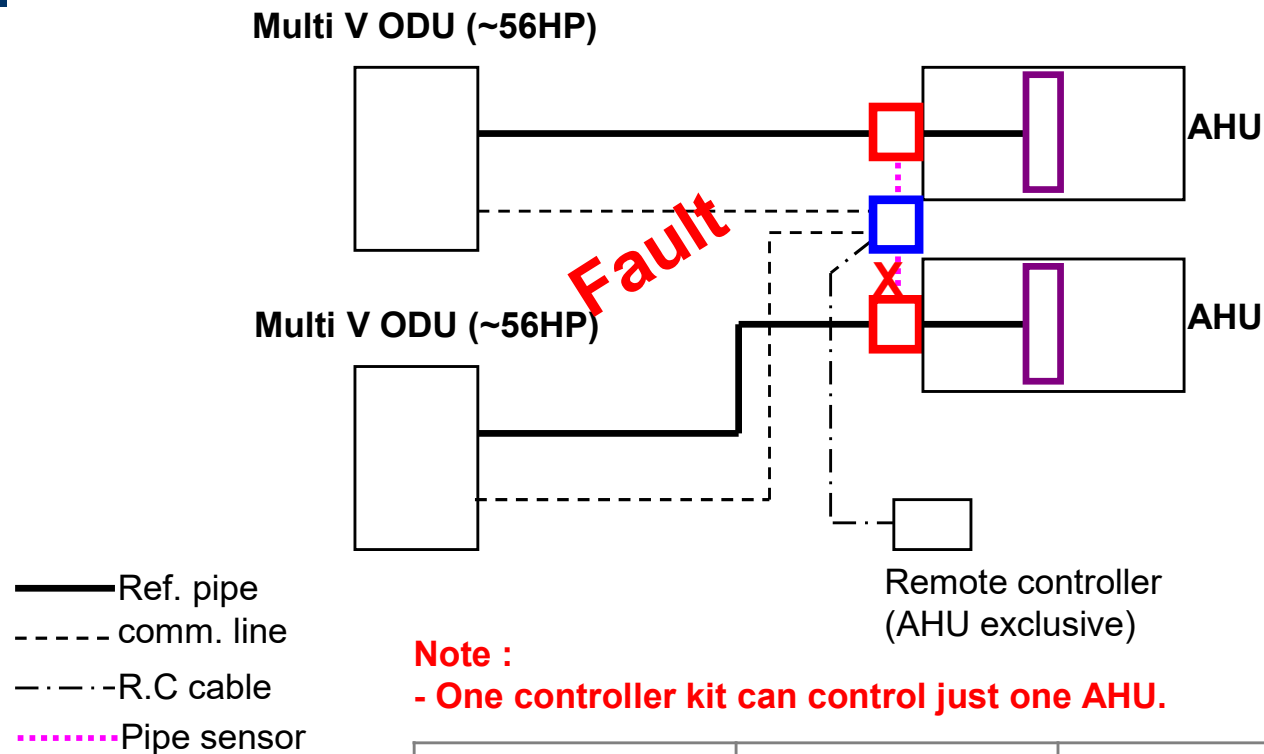


Item	Model	Specification
Expansion kit	PATX13A0E	8~16HP
	PATX20A0E	18~26HP
	PATX25A0E	28~36HP
	PATX35A0E	38~46HP
	PATX50A0E	48~56HP

DX AHU application scene - Expansion kit & Control kit

DX AHU + Multi V

Large scale : AHU 56HP ~ 448(56x8EA)HP

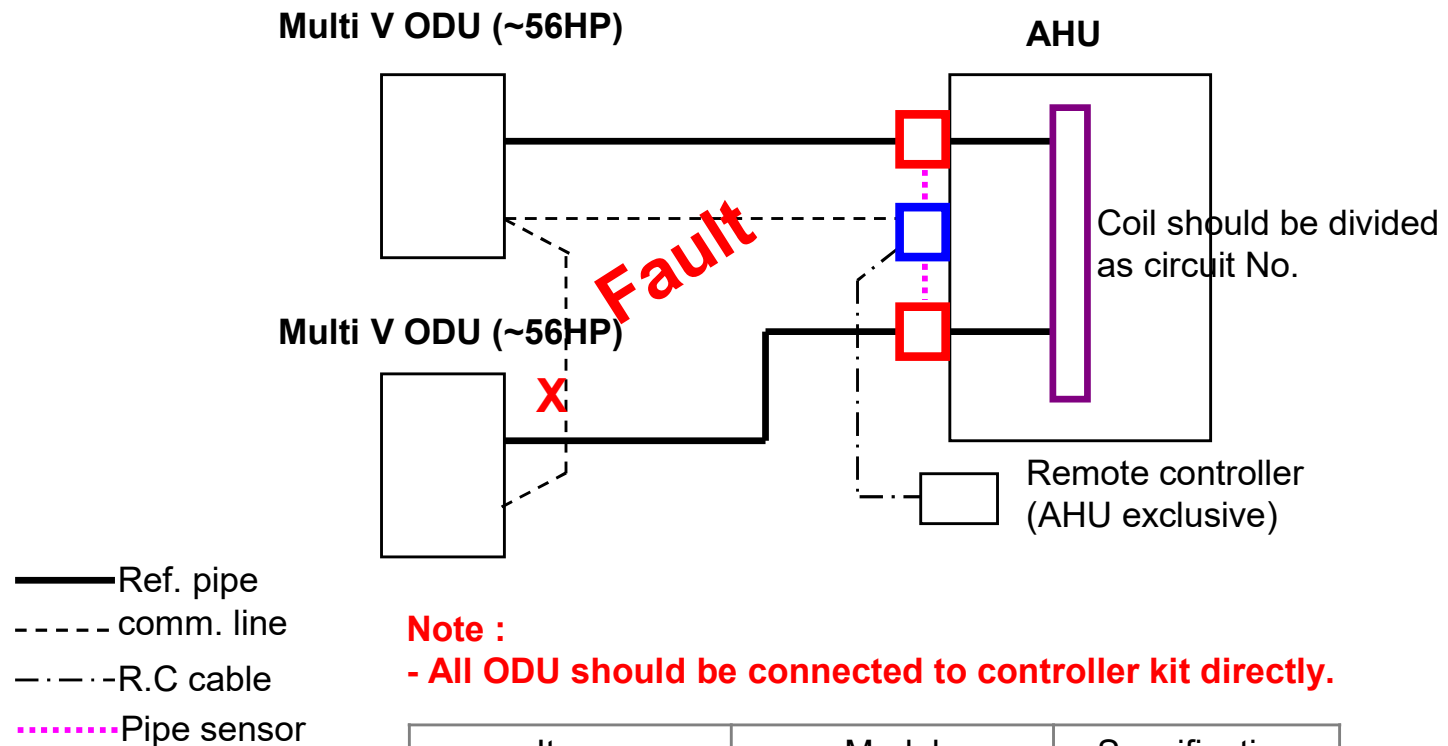


Item	Model	Specification
Expansion kit	PATX13A0E	8~16HP
	PATX20A0E	18~26HP
	PATX25A0E	28~36HP
	PATX35A0E	38~46HP
	PATX50A0E	48~56HP

DX AHU application scene - Expansion kit & Control kit

- Large scale : AHU 56HP ~ 448(56x8EA)HP

DX AHU + Multi V



Item	Model	Specification
Expansion kit	PATX13A0E	8~16HP
	PATX20A0E	18~26HP
	PATX25A0E	28~36HP
	PATX35A0E	38~46HP
	PATX50A0E	48~56HP

DX AHU application scene - Expansion kit & Control kit

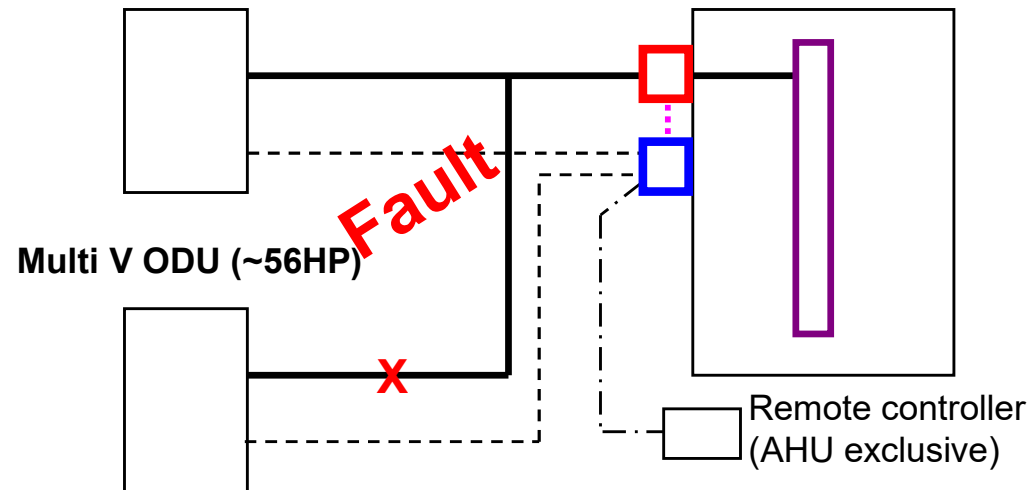
Large scale : AHU 56HP ~ 448(56x8EA)HP

DX AHU + Multi V

Multi V ODU (~56HP)

AHU

Multi V ODU (~56HP)



— Ref. pipe
 ---- comm. line
 -.-.- R.C cable
 Pipe sensor

□ Expansion Kit
 □ Control Kit
 □ Coil

Note :

- Each ODU should compose an independent refrigerant cycle with one Expansion kit.

Item	Model	Specification
Expansion kit	PATX13A0E	8~16HP
	PATX20A0E	18~26HP
	PATX25A0E	28~36HP
	PATX35A0E	38~46HP
	PATX50A0E	48~56HP

¡MUCHAS GRACIAS POR SU ATENCION!

