Refrigerant R410A
INVERTER

AIRSTAGE™ J-II
Variable Refrigerant Flow System

3. OUTDOOR UNITS

CONTENTS

3. OUTDOOR UNITS

1. SPECIFICATIONS

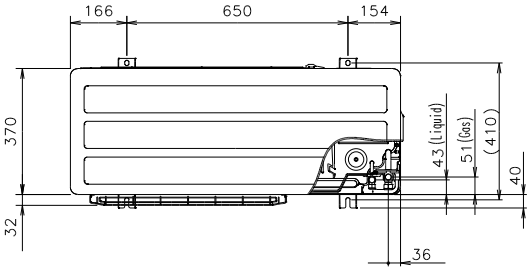
Nominal system capacity			HP	4	5	6
Model name				AJ*A36LALH	AJ*A45LALH	AJ*A54LALH
Power source				1φ ~ 230V, 50Hz		
Available voltage range				198 to 264V		
Capacity	Cooling		kW	11.2	14.0	15.5
	Heating			12.5	16.0	18.0
Input power	Cooling		kW	2.80	3.89	4.49
	Heating			2.76	3.81	4.56
Current	Cooling		A	12.30	17.08	21.69
	Heating			12.12	16.73	20.03
EER	Cooling		W / W	4.00	3.60	3.45
COP	Heating			4.53	4.20	3.95
Fan	Type x Quantity			Propeller fan x 2		
	Airflow rate	High	m^3 / h (l / s)	6,200 (1,722)	6,400 (1,778)	6,900 (1,916)
	Motor	Type x Quantity		DC motor × 2		
		Output	W	100 X 2		
Sound pressure level	Cooling		dB(A)	50	51	53
	Heating			52	53	55
Heat exchanger	Length		mm	935		
	Fin pitch			1.45		
	Rows x Stages			3 x 62		
	Face area		m^2	1.22		
	Pipe type (Material)			Grooved H-pin (Copper)		
	Fin	Type (Material)		Corrugate (Aluminium)		
		Surface treatment		Corrosion resistance (Blue fin)		
Compressor	Type x Quantity			Rotary(inv) x 1		
	Motor output		kW	3.75		
	Crankcase heater		W	25		
Refrigerant	Type			R410A		
	Charge		kg	4.8	5.3	
Refrigerant oil	Type			POE		
Enclosure	Material			Painted galvanized steel		
	Colour			Beige (10YR 7.5/1.0NN)		
Dimensions (H x W x D)	Net		mm	1334×970×370		
	Gross			1476×1064×478		
Weight	Net		kg	117		
	Gross			128		
Connection pipe	Pipe diameter	Liquid	mm	9.52		
		Gas		15.88		19.05
	Method	Liquid		Flare		
		Gas		Flare		Brazing
	Max. length		m	120		
	Max. height difference			30 / 30 (Outdoor unit : Upper / Lower)		
Operation temperature range	Cooling		°CDB	-5 to 46		
	Heating			-20 to 21		
Defrost method				Reversed cycle		
Compressor capacity control (Steps / Range)				81 steps / 20-100%		
Connectable indoor units			Number	6	8	9

Note : Specifications are based on the following conditions.
Cooling : Indoor temperature of 27°CDB / 19°CWB, and outdoor temperature of 35°CDB / 24°CWB.
Heating : Indoor temperature of 20°CDB / (15°CWB), and outdoor temperature of 7°CDB / 6°CWB.
Pipe length : 7.5 m; Height difference between outdoor unit and indoor unit : 0 m.
The protective function might work when using it outside the operation range.

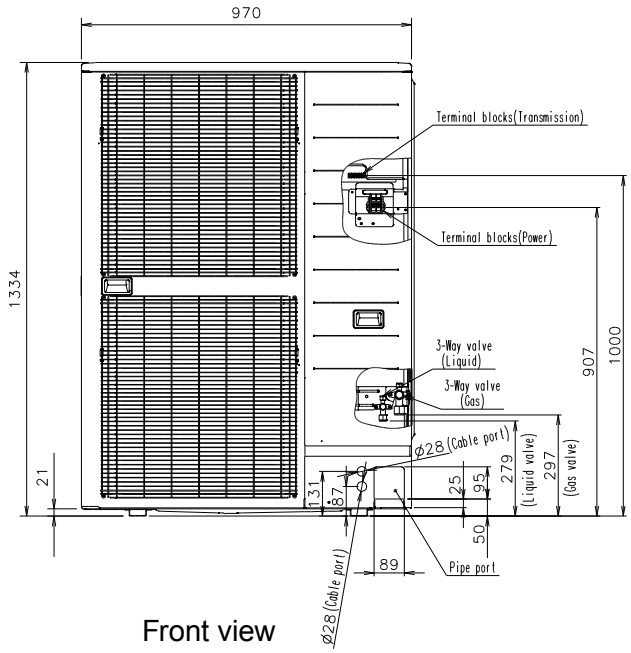
2. DIMENSIONS

■ MODELS : AJ∗A36LALH, AJ∗A45LALH, AJ∗54LALH

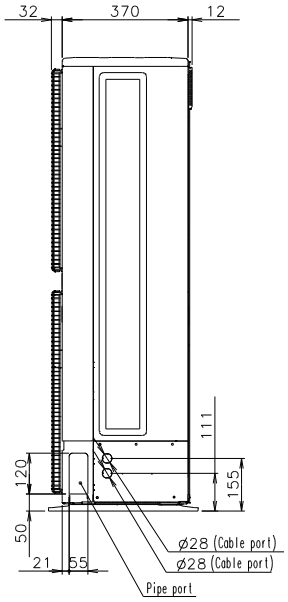
(Unit : mm)



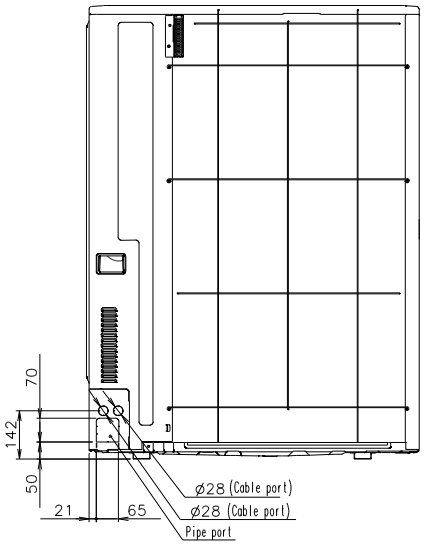
Top view



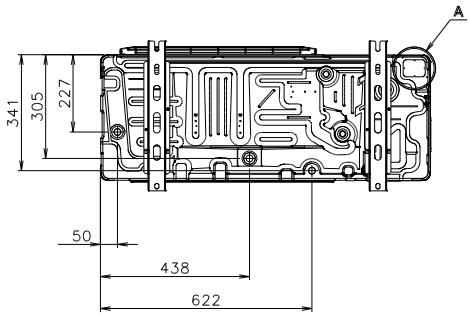
Front view



Side view

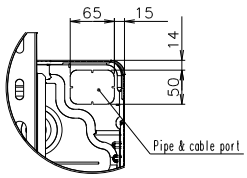


Rear view



Bottom view

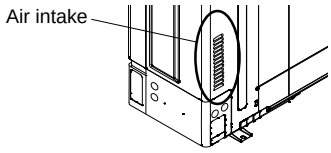
Detail A



3. INSTALLATION SPACE

⚠Caution

- The installation space shown in the following examples is based on an ambient temperature under cooling operation of 35 °C DB at the air intake of the outdoor unit.
  Provide more space around the air intake than shown in the examples if the ambient temperature exceeds 35 °C DB or if the thermal load of all of the outdoor units exceeds the capacity.
- Consider the transportation route, installation space, maintenance space, and access, and install the unit in a location with sufficient space for the refrigerant piping.
- Observe the installation space specifications that are shown in the figures.
  Provide the same space for the air intake at the rear of the outdoor unit.
  If the installation is not performed according to the specifications, it could cause a short circuit and result in a lack of operating performance.
  As a result, the outdoor unit might easily be stopped by high-pressure protection.



Rear view

- Installation methods not shown in the following examples are not recommended.
  Performance may drop significantly.

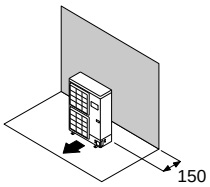
OUTDOOR UNITS

3-1. SINGLE OUTDOOR UNIT INSTALLATION

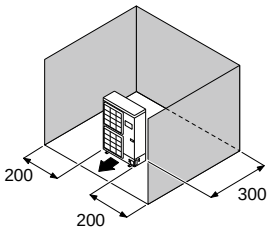
■ WHEN THE UPWARD AREA IS OPEN

Unit : mm

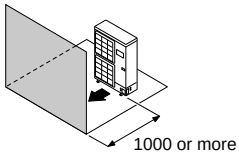
● Obstacles at rear only



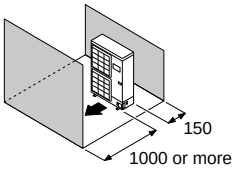
● Obstacles at rear and sides only



● Obstacles at front only

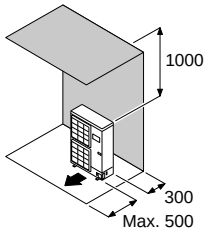


● Obstacles at front and rear only

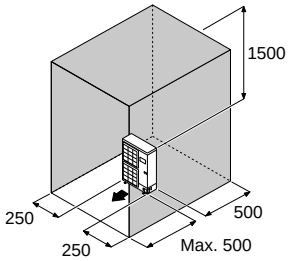


■ WHEN AN OBSTRUCTION IS PRESENT ALSO IN THE UPWARD AREA

● Obstacles at rear and above only



● Obstacles at rear, sides, and above only

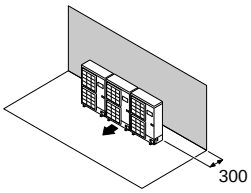


3-2. MULTIPLE OUTDOOR UNIT INSTALLATION

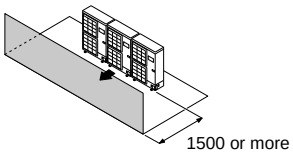
- Provide at least 25mm of space between the outdoor units if multiple units are installed.
- When routing the piping from the side of an outdoor unit, provide space for the piping.
- No more than 3 units must be installed side by side.
  When 3 units or more are arranged in a line, provide the space as shown in the following example when an obstruction is present also in the upward area.

■ WHEN THE UPWARD AREA IS OPEN

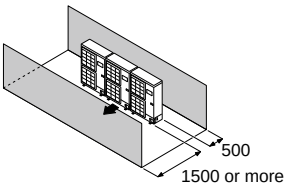
● Obstacles at rear only



●Obstacles at front only

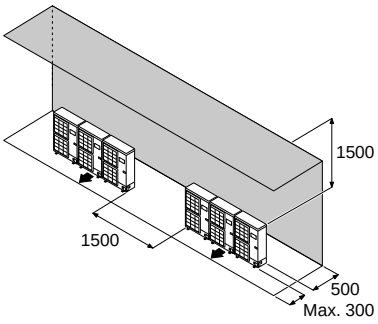


●Obstacles at front and rear only



■ WHEN AN OBSTRUCTION IS PRESENT ALSO IN THE UPWARD AREA

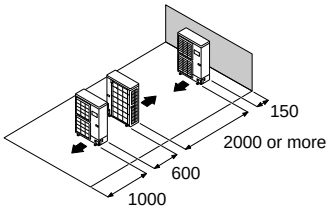
● Obstacles at rear and above only



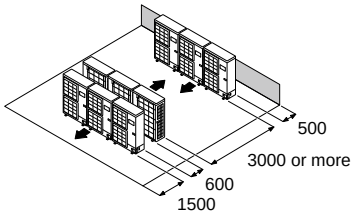
3-3. OUTDOOR UNITS INSTALLATION IN MULTI ROW

- The following settings are not recommended in case of cooling by a low outside temperature.

● Single parallel unit arrangement

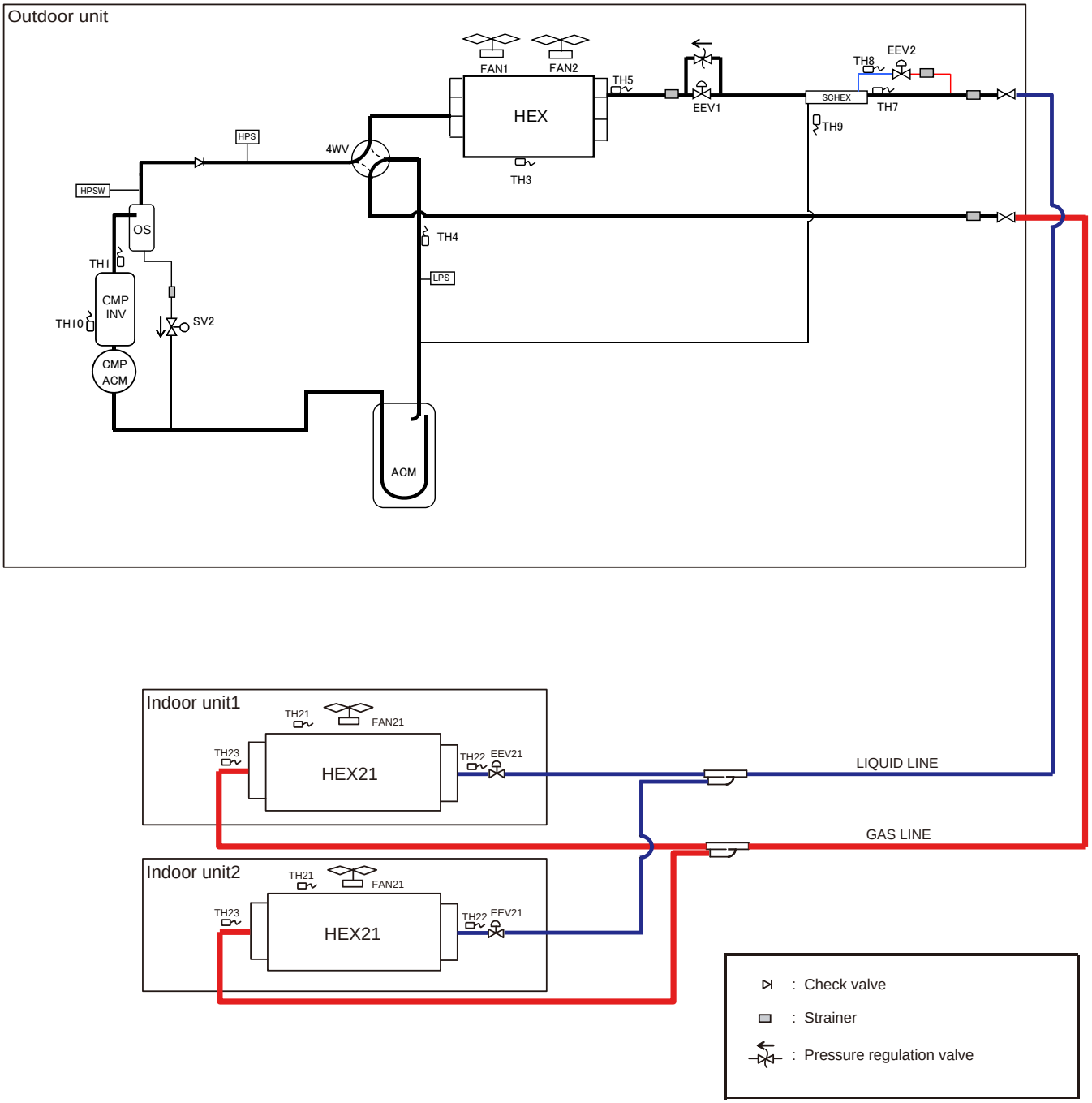


● Multiple parallel unit arrangement



4. REFRIGERANT CIRCUIT

■ MODELS : AJ∗A36LALH, AJ∗A45LALH, AJ∗A54LALH



OUTDOOR UNITS

■ SYMBOL DESCRIPTION

● Outdoor unit

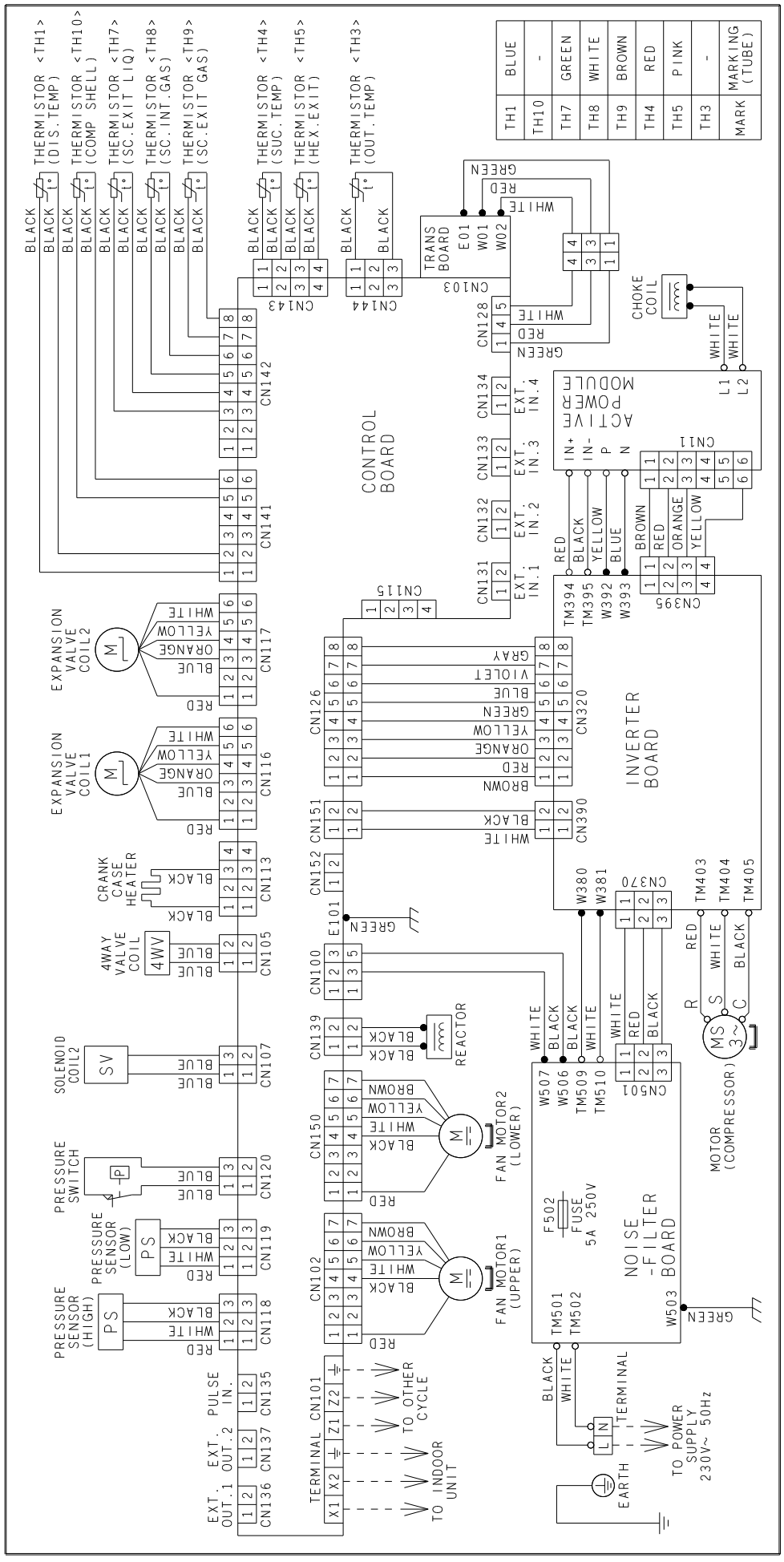
MARK	DESCRIPTION	Marking (Tube)
CMP	Compressor (Inverter type)	
HEX	Heat exchanger	
FAN 1	Fan 1	
FAN 2	Fan 2	
ACM	Accumulator	
OS	Oil separator	
SCHEX	Sub-cool heat exchanger	
HPS	High pressure sensor	
LPS	Low pressure sensor	
HPSW	High pressure sensor switch	
4WV	4-way valve	
EEV 1	Electric expansion valve 1	
EEV 2	Electric expansion valve 2	
SV 2	Solenoid valve	
TH 1	Discharge temperature thermistor	Blue
TH 3	Outdoor temperature thermistor	–
TH 4	Suction temperature thermistor	Red
TH 5	Heat exchanger (outlet) thermistor	Pink
TH 7	Liquid temperature thermistor	Green
TH 8	Sub-cool heat exchanger (inlet) thermistor	White
TH 9	Sub-cool heat exchanger (outlet) thermistor	Brown
TH 10	Compressor temperature thermistor	–

● Indoor unit

MARK	DESCRIPTION
HEX 21	Heat exchanger
FAN 21	Fan
EEV 21	Electric expansion valve
TH 21	Room temperature thermistor
TH 22	Heat exchanger (inlet) thermistor
TH 23	Heat exchanger (outlet) thermistor

5. WIRING DIAGRAM

■ MODELS : AJ∗A36LALH, AJ∗A45LALH, AJ∗A54LALH



OUTDOOR UNITS

6. OPERATION RANGE

Operation mode	Operation range	
	Indoor unit	Outdoor unit
Cooling / Dry	18 to 32°C DB R.H. 80% or less	-5 to 46°C DB
Heating	10 to 30°C DB	-20 to 21°C DB

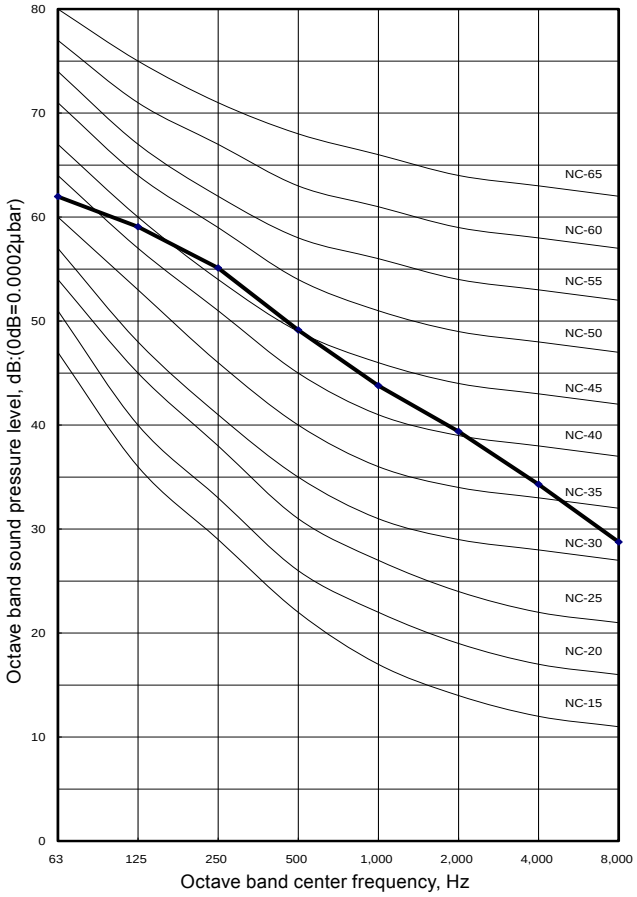
R.H. : Relative Humidity.

OUTDOOR UNITS

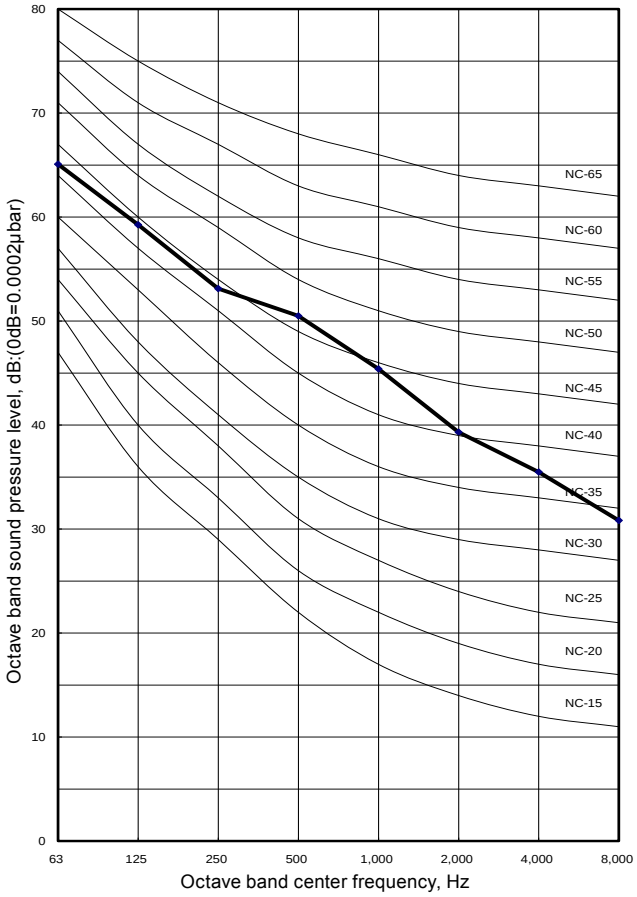
7. NOISE LEVEL CURVE

■ MODEL : AJ∗A36LALH

● Cooling

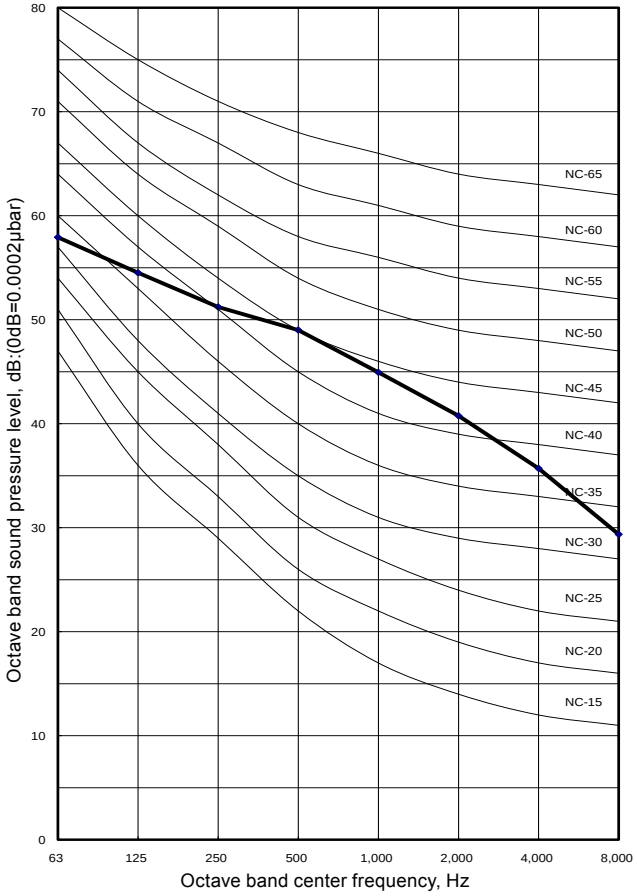


● Heating

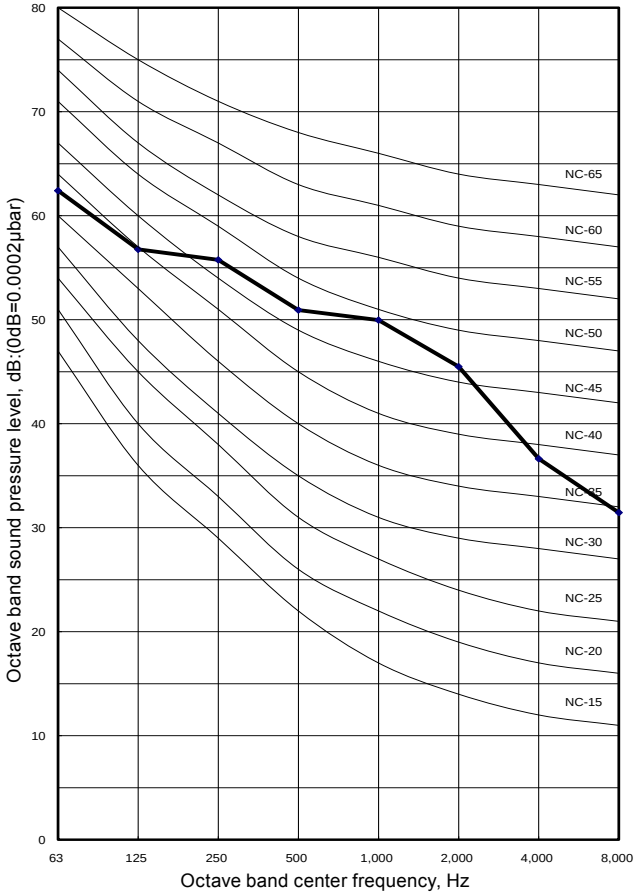


■ MODEL : AJ∗A45LALH

● Cooling

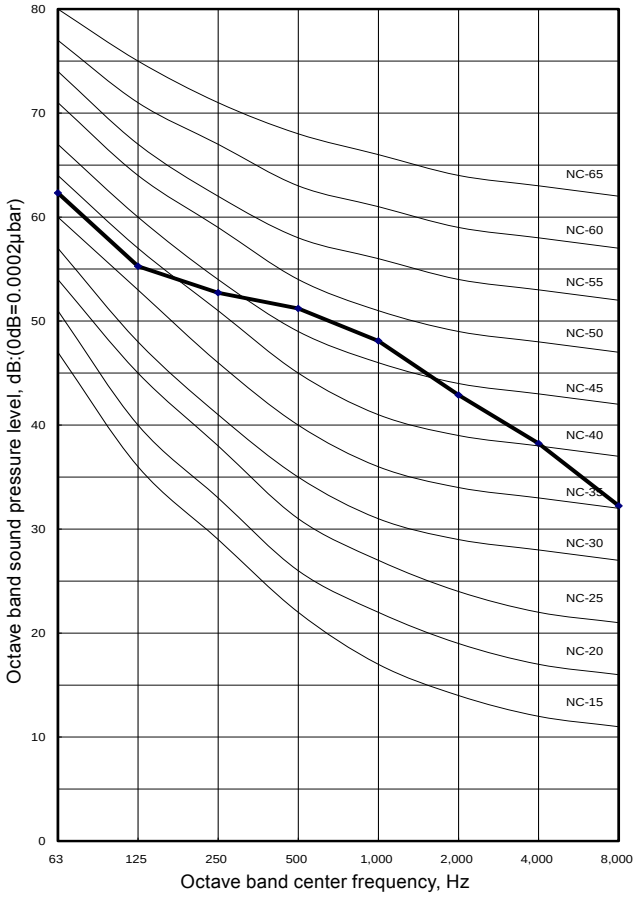


● Heating

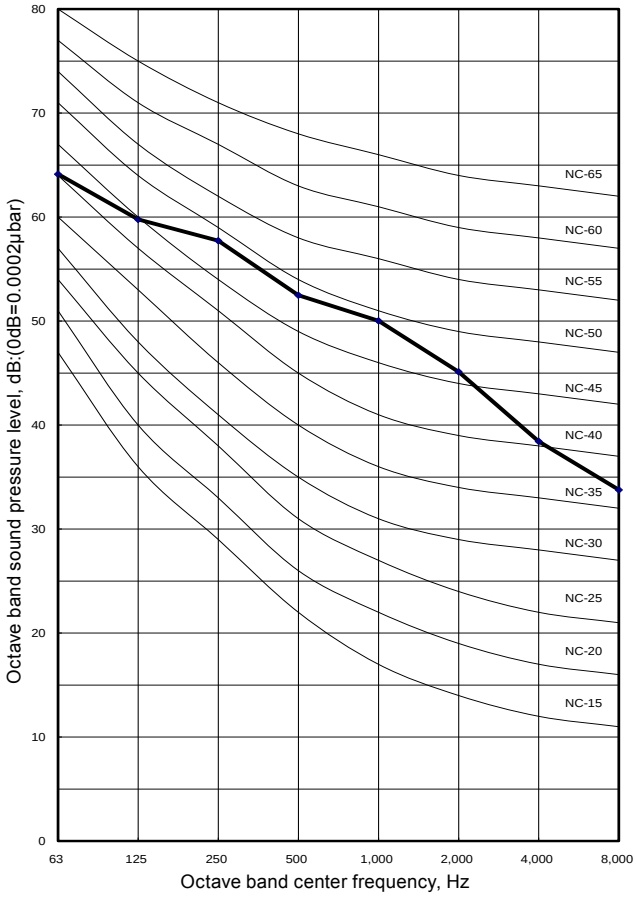


■ MODEL : AJ∗54LALH

● Cooling

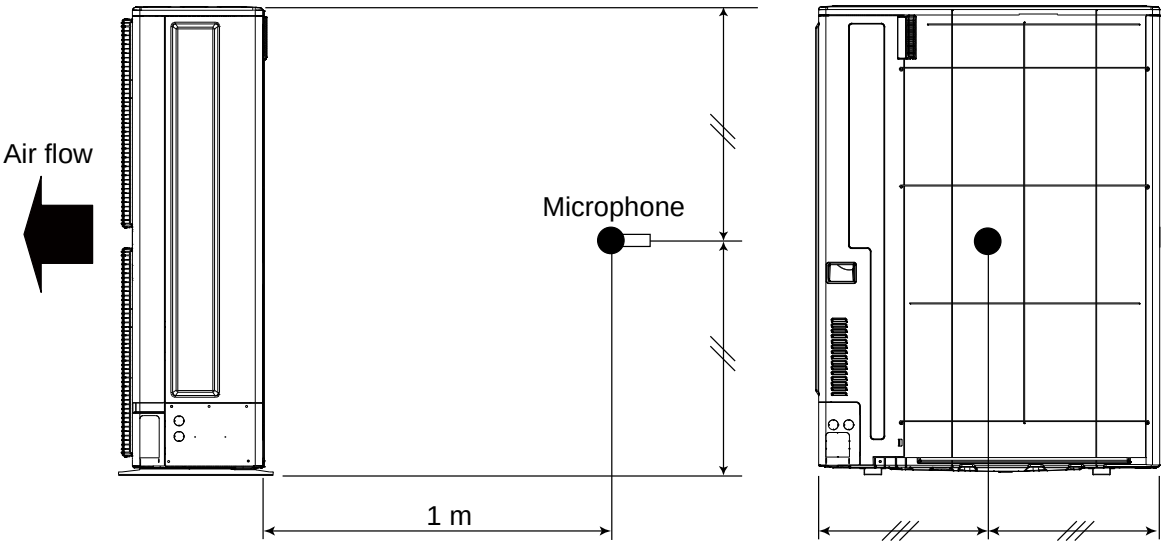


● Heating



OUTDOOR UNITS

■ SOUND LEVEL CHECK POINT



OUTDOOR UNITS

8. ELECTRIC CHARACTERISTICS

		Rated Value		Electric Characteristics									
		Power Supply		Full Load Characteristics			Wiring Specifications *1				Compresser	Outdoor Fan Motor	
HP	Model name	Hz	Voltage (V)	MCA (A)	TOCA (A)	MSC (A)	MFA (A)	Power Cable (mm^2)	Earth Cable (mm^2)	Limited Wiring Length (m) *2	RLA (A)	Output (W)	FLA (A)
4	AJ∗A36LALH	50	230	30.3	29.5	29.5	32	6	4	18	24	100	0.66
5	AJ∗A45LALH	50	230	30.3	29.5	29.5	32	6	4	18	24	100	0.66
6	AJ∗A54LALH	50	230	30.3	29.5	29.5	32	6	4	18	24	100	0.66

OUTDOOR UNITS

- Select the breaker based on MCA of the table above.
- Select the wire diameter based on the larger value of MCA or TOCA of the table above and select a wire diameter which withstands the breaker capacity.

*1 Wiring Spec : These values are recommended data. Please select the wiring spec in accordance with the regional cable standard.

*2 Limited Wiring Length : This wiring length is in case voltage drop less than 2%. When wiring length extend longer, select the wiring size of larger diameter.

RLA : Rated Load Amp of compressor under the standard condition.

MCA : Min Circuit Amp = Max Operating Current (Full Load)

MSC : Max Starting Current

TOCA : Total Value of Each Over Current Set

MFA : Main Fuse (Circuit Breaker) Current

9. SAFETY DEVICES

Safety device	AJ∗A36LALH	AJ∗A45LALH	AJ∗54LALH
Fuse (Filter PCB)	AC 250V 5A		
Protector (Filter PCB)	AC 500V 45A		
Compressor Protector	Overcurrent protection - Temperature protection Off : 110°C On : 80°C		
High Pressure Protection	Off : 4.2MPa On : 3.2MPa		
Low Pressure Protection	Off : 0.05MPa		

OUTDOOR UNITS