



Ceiling suspended unit  
Air Conditioning  
Technical Data  
FHA-A(9)





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# FHA-A(9)

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# 1 Features

## 1 - 1 FHA-A(9)

- › Ideal for comfortable air flow in wide rooms thanks to Coanda effect: up to 100° discharge angle
- › Even rooms with ceilings up to 3.8m can be heated up or cooled down very easily without capacity loss
- › Can easily be installed in both new and refurbishment projects
- › Unified indoor unit range for R-32 and R-410A
- › Combining with R-32 Bluevolution technology, reduces environmental impact with 68% compared to R-410A, leads directly to lower energy consumption thanks to its high energy efficiency and has up to lower 16% refrigerant charge
- › Can easily be mounted in corners and narrow spaces, as it only needs 30mm lateral service space
- › Reduced energy consumption thanks to specially developed DC fan motor
- › 5 different fan speeds available for maximum comfort
- › Stylish unit blends easily with any interior. The flaps close entirely when the unit is not operating and there are no air intake grilles visible



- |                         |                      |                     |                                 |                     |                 |                |                                     |                         |
|-------------------------|----------------------|---------------------|---------------------------------|---------------------|-----------------|----------------|-------------------------------------|-------------------------|
|                         |                      |                     |                                 |                     |                 |                |                                     |                         |
| Infrastructure cooling  | Home leave operation | Fan only            | Auto cooling-heating changeover | Vertical auto swing | Fan speed steps | Dry programme  | Air filter                          | Weekly timer            |
|                         |                      |                     |                                 |                     |                 |                |                                     |                         |
| Infrared remote control | Wired remote control | Centralised control | Online controller via app       | Auto-restart        | Self diagnosis  | Drain pump kit | Twin/triple/double twin application | Multi model application |

## 2 Specifications

### 1 - 1 FHA-A(9)

Technical Specifications				FHA35A9	FHA50A9	FHA60A9	FHA71A9	FHA100A	FHA125A	
Cooling capacity	Sensible capacity	Nom.	kW						9.06	
	Latent capacity	Nom.	kW						4.94	
	Total capacity	Nom.	kW						14.00	
Power input - 50Hz	Cooling	Nom.	kW	0.090		0.091	0.110	0.344	0.360	
	Heating	Nom.	kW	0.090		0.091	0.110	0.344	0.360	
Casing	Colour	White								
	Material	Resin, sheet metal								
Dimensions	Unit	Height	mm	235						
		Width	mm	960	1,270		1,590			
		Depth	mm	690						
	Packed unit	Height	mm	340		349				
		Width	mm	1,116		1,426		1,746		
		Depth	mm	858		878				
Weight	Unit	kg	24	25	31	32	38.0			
	Packed unit	kg	38	39	52	54	61			
Heat exchanger	Fin	Type	ML fin (Anti Corrosion Hydrophilic)							
Fan	Type	Sirocco fan								
	Quantity			2			3		4	
	Air flow rate	Cooling	High	m <sup>3</sup> /min	14.0	15.0	19.5	20.5	28.0	31.0
				cfm	494	530	689	724	989	1,095
			Medium	m <sup>3</sup> /min	11.5	12.0	15.0	17.0	24.0	27.0
		cfm	406	424	530	600	848	953		
		Low	m <sup>3</sup> /min	10.0		11.5	14.0	20.0	23.0	
			cfm	353		406	494	706	812	
	Heating	High	m <sup>3</sup> /min	14.0	15.0	19.5	20.5	28.0	31.0	
			cfm	494	530	689	724	989	1,095	
Medium		m <sup>3</sup> /min	11.5	12.0	15.0	17.0	24.0	27.0		
		cfm	406	424	530	600	848	953		
Low		m <sup>3</sup> /min	10.0		11.5	14.0	20.0	23.0		
		cfm	353		406	494	706	812		
Fan motor	Quantity	1								
	Model	KFD-280-87-8A			KFD-280-117-8A		EQDW01EDK			
	Speed	Steps	5							
	Output	High	W	60		91		150		
	Full load amps (FLA)	Cooling	A	0.6			0.8		1.2	1.6
Heating		A	0.6			0.8		1.2	1.6	
Sound power level	Cooling	dB(A)	53.0	54.0		55.0		60	62	
Sound pressure level	Cooling	High	dB(A)	36.0		37.0		38.0	42	44
		Medium	dB(A)	34.0		35.0		36.0	38	41
		Low	dB(A)	31.0	32.0		33.0		34.0	37
	Heating	High	dB(A)	36.0		37.0		38.0	42	44
		Nom.	dB(A)	34.0		35.0		36.0	38	41
		Medium	dB(A)	31.0	32.0		33.0		34.0	37
Refrigerant	Type	R-32 / R-410A								
Piping connections	Sound absorbing insulation	Not needed								
Piping connections	Liquid	Type	Flare connection							
		OD	mm	6,4		9,5		9,52		
	Gas	Type	Flare connection							
		OD	mm	9.5	12.7		15.9			
Drain	VP20									
Heat insulation	Needed									
Air filter	Type	Resin net								
Safety devices	Item	01	Fuse (F, 5A, 250V)							
		02	Fan motor fuse (F,4A,500V)							
Control systems	Infrared remote control	BRC7GA53 / BRC7GA56								
	Wired remote control	BRC1E53A7 / BRC1E53B7 / BRC1E53C7 / BRC1D528 / BRC1E51A7								

Technical Specifications				FHA140A
Cooling capacity	Sensible capacity	Nom.	kW	9.98
	Latent capacity	Nom.	kW	5.42
	Total capacity	Nom.	kW	15.40
Power input - 50Hz	Cooling	Nom.	kW	0.380
	Heating	Nom.	kW	0.380
Casing	Colour	White		
	Material	Resin, sheet metal		

## 2 Specifications

### 1 - 1 FHA-A(9)

2

Technical Specifications				FHA140A	
Dimensions	Unit	Height	mm	235	
		Width	mm	1,590	
		Depth	mm	690	
	Packed unit	Height	mm	349	
		Width	mm	1,746	
		Depth	mm	878	
Weight	Unit		kg	38.0	
	Packed unit		kg	61	
Heat exchanger	Fin	Type		ML fin (Anti Corrosion Hydrophilic)	
Fan	Type			Sirocco fan	
	Quantity			4	
	Air flow rate	Cooling	High	m <sup>3</sup> /min	34.0
				cfm	1,201
			Medium	m <sup>3</sup> /min	29.0
			cfm	1,024	
		Low	m <sup>3</sup> /min	24.0	
			cfm	848	
	Heating	High	m <sup>3</sup> /min	34.0	
			cfm	1,201	
Medium		m <sup>3</sup> /min	29.0		
	cfm	1,024			
	Low	m <sup>3</sup> /min	24.0		
	cfm	848			
Fan motor	Quantity			1	
	Model			EQDW01EDK	
	Speed	Steps		5	
	Output	High	W	150	
	Full load amps (FLA)	Cooling	A	1.8	
		Heating	A	1.8	
Sound power level	Cooling		dBa	64	
Sound pressure level	Cooling	High	dBa	46	
		Medium	dBa	42	
		Low	dBa	38	
	Heating	High	dBa	46	
		Nom.	dBa	42	
		Medium	dBa	38	
Refrigerant	Type			R-32 / R-410A	
Piping connections	Sound absorbing insulation			Not needed	
Piping connections	Liquid	Type		Flare connection	
		OD	mm	9,52	
	Gas	Type		Flare connection	
		OD	mm	15,9	
	Drain			VP20	
	Heat insulation			Needed	
Air filter	Type			Resin net	
Safety devices	Item	01		Fuse (F, 5A, 250V)	
Control systems	Infrared remote control			BRC7GA53 / BRC7GA56	
	Wired remote control			BRC1E53A7 / BRC1E53B7 / BRC1E53C7 / BRC1D528 / BRC1E51A7	

Standard accessories: Thermal insulation tube; Quantity: 2;

Standard accessories: Wire clamp material; Quantity: 7;

Standard accessories: Hose band; Quantity: 1;

Standard accessories: Drain hose; Quantity: 1;

Standard accessories: Washer; Quantity: 8;

Standard accessories: Sealing pad (large); Quantity: 1;

Standard accessories: Sealing pad (small); Quantity: 1;

Standard accessories: Resin bushing; Quantity: 1;

Standard accessories: Screws; Quantity: 2;

Standard accessories: Wiring fixture; Quantity: 2;

Electrical Specifications		FHA35A9	FHA50A9	FHA60A9	FHA71A9	FHA100A	FHA125A
Power supply	Phase						1~
	Frequency	Hz					50
	Voltage	V					220-240

Electrical Specifications		FHA140A
Power supply	Phase	1~
	Frequency	Hz
	Voltage	V

See separate drawing for electrical data

### 3 Safety device settings

#### 3 - 1 Safety Device Settings

**FHA-A(9)**

Safety devices		FHA35-50AVEB(9/99)	FHA60-71AVEB(9/99)
PCB fuse		250V, 3.15A	250V, 3.15A
Fan motor fuse (on wire)		500V, 4A	500V, 4A
Fan motor overcurrent protection	Nominal	1.65A	1.65A
Fan motor thermal protector	Maximum	125°C	125°C

Safety devices		FHA100-140AVEB(9)
PCB fuse		250V, 3.15A
Fan motor fuse (on wire)		---
Fan motor overcurrent protection	Nominal	2.3A
Fan motor thermal protector	Maximum	125°C

**4D110679C**

# 4 Options

## 4 - 1 Options

### FHA-A(9)

Option kit	Capacity class						
	35	50	60	71	100	125	140
Long-life replacement filter	KAFP501A56	KAF501B56		KAF501B80		KAF501B160	
Fresh air intake kit				KDDQ50A140			
Drain pump kit	KDUP50Q63			KDU50R160			
L-type piping kit (upward direction)	KHFP5MA35	KHFP5N63		KHFP5N160			
Remote control	Wired remote control	BRC1E53A7 <sup>(1)(4)</sup> , BRC1E53B7 <sup>(2)(4)</sup> , BRC1E53C7 <sup>(3)(4)</sup> , BRC1D528, BRC1H51(9)W/S/K, BRC1H81W/S					
	Wireless remote control	Heat pump		BRC7GA53			
		Cooling only		BRC7GA56			
Simplified remote control (with operation mode selector button)				BRC2E52C7 <sup>(5)</sup>			
Simplified remote control (without operation mode selector button)				BRC3E52C7 <sup>(5)</sup>			
Central remote control				DCS302CA51			
Unified ON/OFF controller				DCS301BA51			
Schedule timer				DST301BA51			
Wiring adaptor for electrical appendices				KRP1BA54 <sup>(6)</sup>			
Wiring adaptor for electrical appendices				KRP4AA52 <sup>(6)</sup>			
Installation box for adaptor PCB				KRP1D93A			
Mounting plate for adaptor PCB installation box	KKSAP50A56						
Remote sensor				KRC501-4B			
Remote "ON/OFF" and "forced OFF" kit				EKROR04			
Electrical box with earth terminal (-3- blocks)				KJB311AA			
Electrical box with earth terminal (-2- blocks)				KJB212AA			
Digital input adaptor				BRP7A52 <sup>(6)(7)</sup>			
Wi-Fi adaptor for smartphones				BRP069A81 <sup>(9)</sup>			

- ① Included languages are: English, German, French, Italian, Spanish, Portuguese, and Dutch.
- ② Included languages are: English, Czech, Croatian, Hungarian, Slovenian, Romanian, and Bulgarian.
- ③ Included languages are: English, Russian, Greek, Turkish, Polish, Albanian, and Slovak.
- ④ Includes duty rotation functionality
- ⑤ Included languages are:  
 Language pack -1-: English, German, French, Dutch, Spanish, Italian, and Portuguese.  
 With PC cable -EKPCAB3- in combination with the Updater PC software, you can additionally change the language to:  
 Language pack -2-: English, Bulgarian, Croatian, Czech, Hungarian, Romanian, and Slovenian.  
 Language pack -3-: English, Greek, Polish, Russian, Serbian, Slovak, and Turkish.
- ⑥ Requires installation box -6-.
- ⑦ Only possible in combination with -BRC2/3E52C7, BRC1E53A7/B7/C7, BRC1H51(9)W/S/K, BRC1H81W/S-
- ⑧ Editable data for this drawing are available in the -BOM (E-BOM)- system.
- ⑨ Only possible in combination with wired or wireless remote control (e.g. -BRC1E\*, BRC1H\*, BRC7FA\*-) )

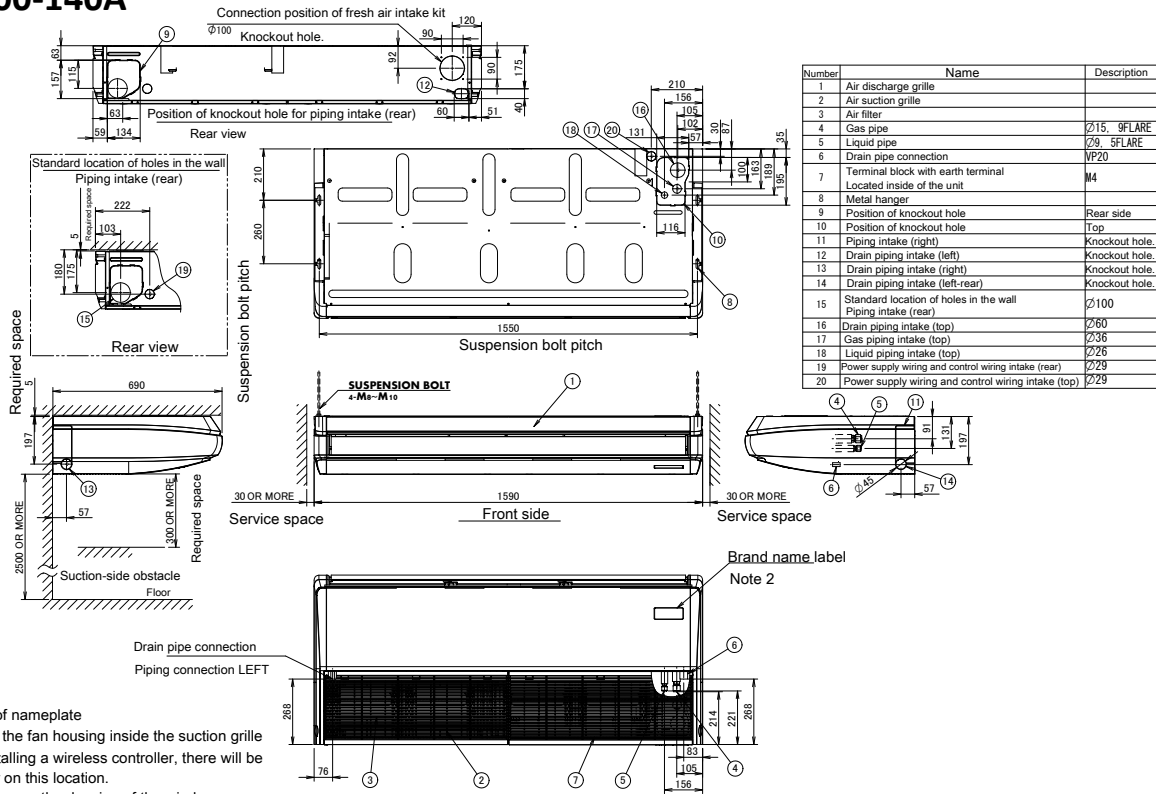
**3D109746C**



# 5 Dimensional drawings

## 5 - 1 Dimensional Drawings

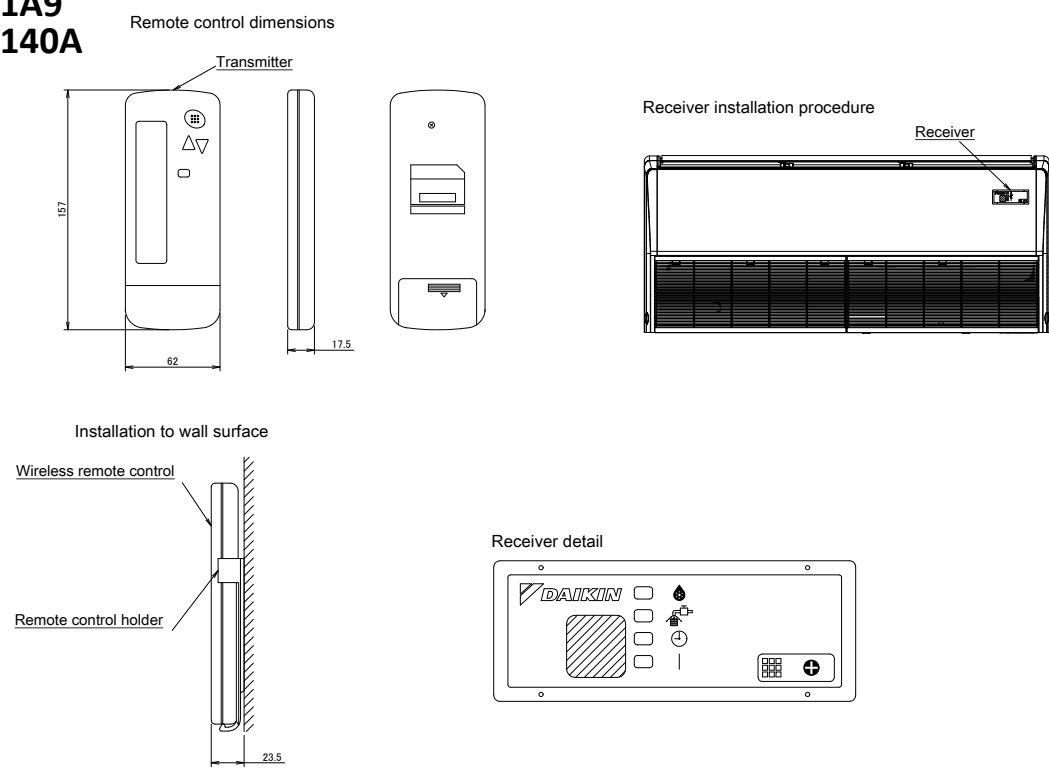
### FHA100-140A



- 1) Location of nameplate  
Bottom of the fan housing inside the suction grille
- 2) When installing a wireless controller, there will be a receiver on this location.  
For details, see the drawing of the wireless controller.
- 3) Do not place any objects under the indoor unit. In case of high humidity (>80%), clogged drain outlets, or dirty air filters, condensate may drop out.

**3D106530A**

### FHA35-71A9 FHA100-140A



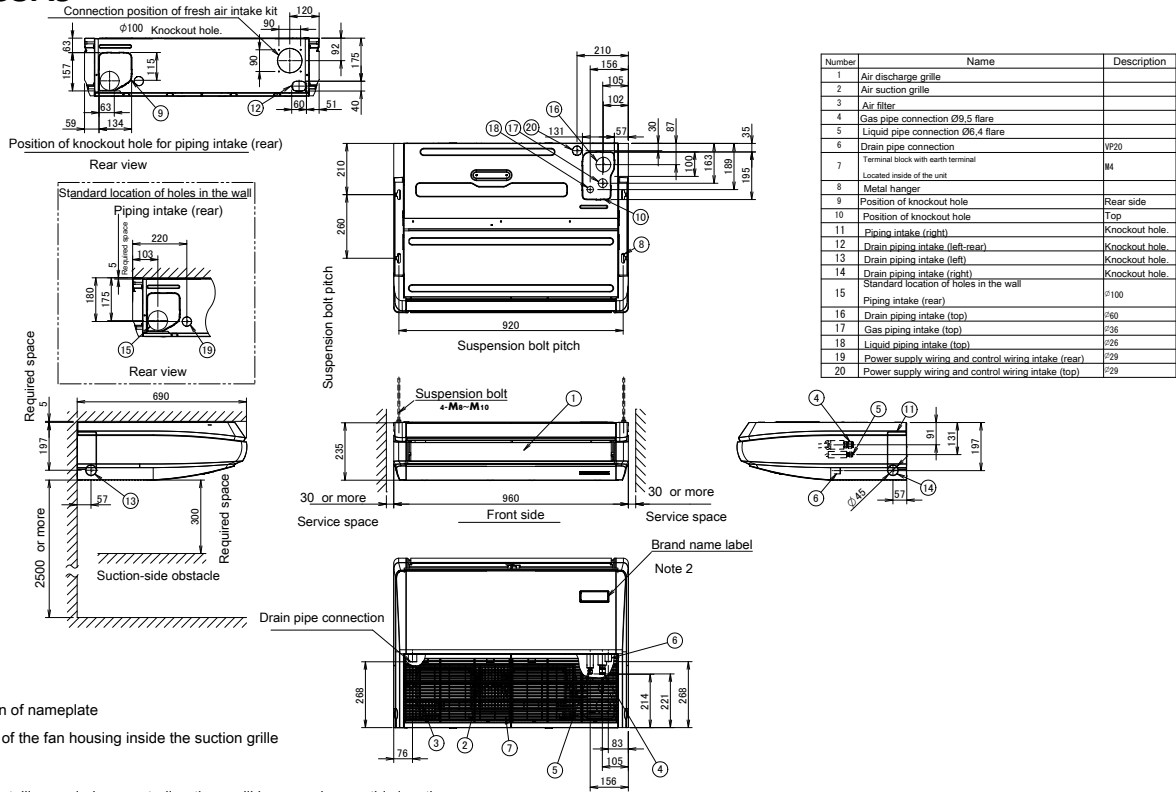
**3D109659**

# 5 Dimensional drawings

## 5 - 1 Dimensional Drawings

5

### FHA35A9

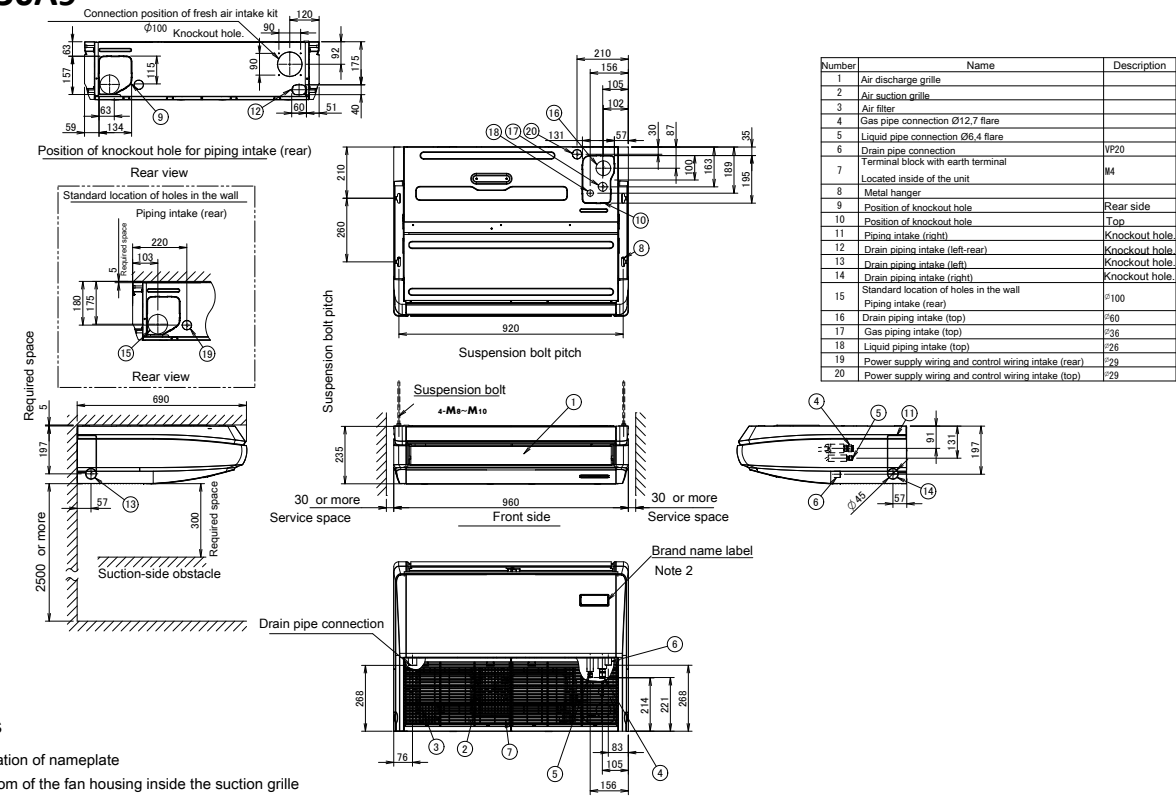


Number	Name	Description
1	Air discharge grille	
2	Air suction grille	
3	Air filter	
4	Gas pipe connection Ø9.5 flare	
5	Liquid pipe connection Ø6.4 flare	
6	Drain pipe connection	VP20
7	Terminal block with earth terminal	M4
8	Metal hanger	
9	Position of knockout hole	Rear side
10	Position of knockout hole	Top
11	Piping intake (right)	Knockout hole
12	Drain piping intake (left-rear)	Knockout hole
13	Drain piping intake (left)	Knockout hole
14	Drain piping intake (right)	Knockout hole
15	Standard location of holes in the wall	φ100
16	Piping intake (rear)	φ60
17	Gas piping intake (top)	φ36
18	Liquid piping intake (top)	φ26
19	Power supply wiring and control wiring intake (rear)	φ29
20	Power supply wiring and control wiring intake (top)	φ29

- Notes  
 Location of nameplate  
 Bottom of the fan housing inside the suction grille
- When installing a wireless controller, there will be a receiver on this location.  
 For details, see the drawing of the wireless controller.
- Do not place any objects under the indoor unit. In case of high humidity (>80%), clogged drain outlets, or dirty air filters, condensate may drop out.

**3D106574A**

### FHA50A9



Number	Name	Description
1	Air discharge grille	
2	Air suction grille	
3	Air filter	
4	Gas pipe connection Ø12.7 flare	
5	Liquid pipe connection Ø6.4 flare	
6	Drain pipe connection	VP20
7	Terminal block with earth terminal	M4
8	Metal hanger	
9	Position of knockout hole	Rear side
10	Position of knockout hole	Top
11	Piping intake (right)	Knockout hole
12	Drain piping intake (left-rear)	Knockout hole
13	Drain piping intake (left)	Knockout hole
14	Drain piping intake (right)	Knockout hole
15	Standard location of holes in the wall	φ100
16	Piping intake (rear)	φ60
17	Gas piping intake (top)	φ36
18	Liquid piping intake (top)	φ26
19	Power supply wiring and control wiring intake (rear)	φ29
20	Power supply wiring and control wiring intake (top)	φ29

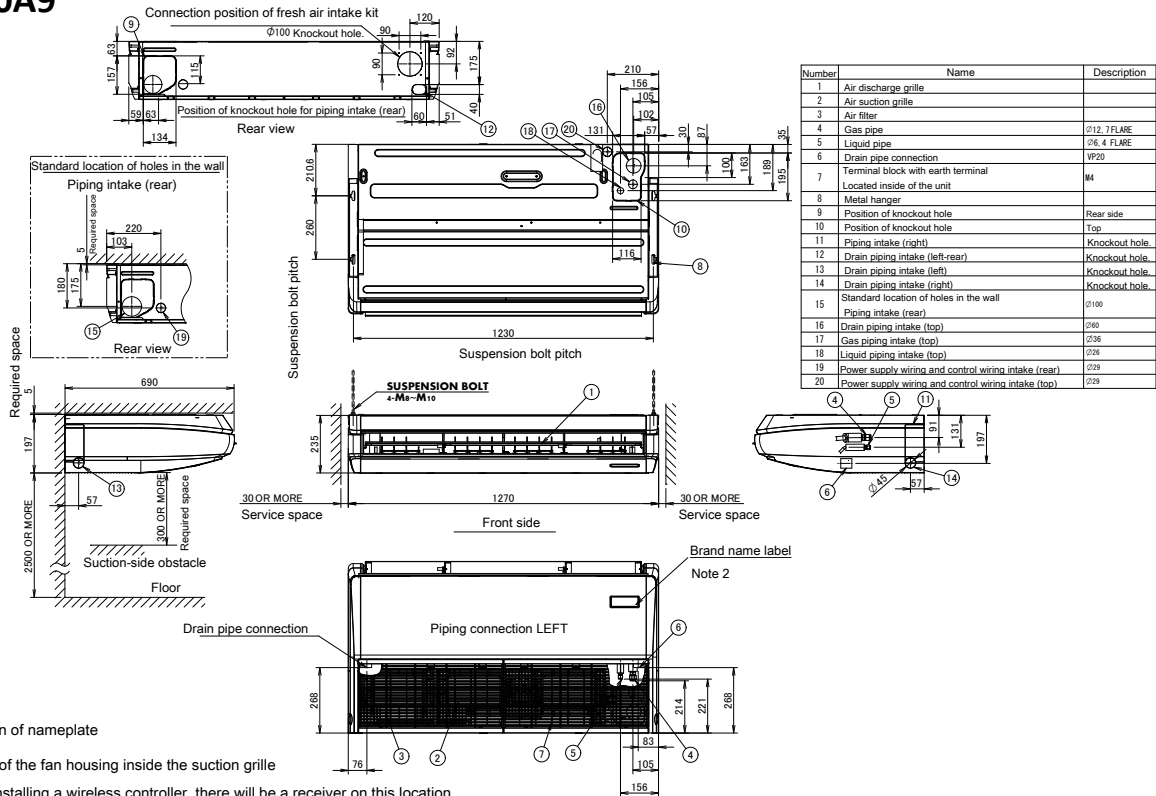
- Notes  
 Location of nameplate  
 Bottom of the fan housing inside the suction grille
- When installing a wireless controller, there will be a receiver on this location.  
 For details, see the drawing of the wireless controller.
- Do not place any objects under the indoor unit. In case of high humidity (>80%), clogged drain outlets, or dirty air filters, condensate may drop out.

**3D109224A**

# 5 Dimensional drawings

## 5 - 1 Dimensional Drawings

### FHA60A9

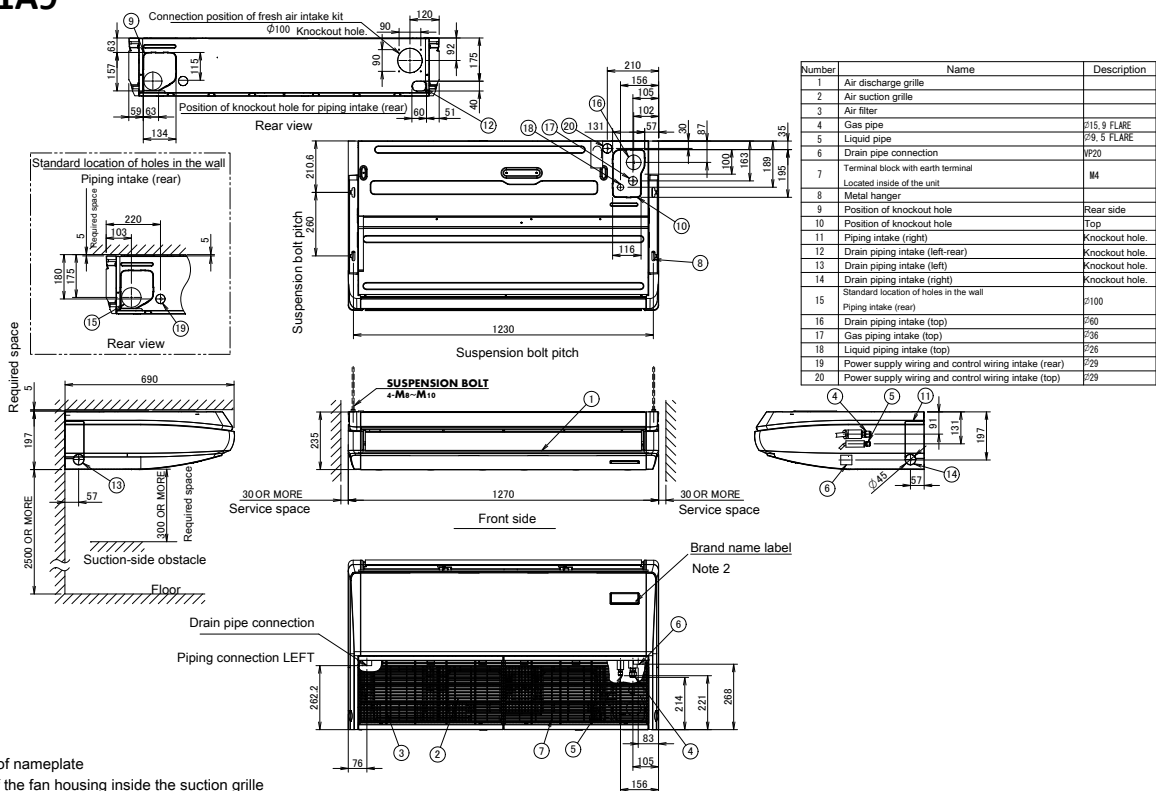


Notes

- 1) Location of nameplate  
Bottom of the fan housing inside the suction grille
- 2) When installing a wireless controller, there will be a receiver on this location.  
For details, see the drawing of the wireless controller.
- 3) Do not place any objects under the indoor unit.  
In case of high humidity (>80%), clogged drain outlets, or dirty air filters, condensate may drop out.

3D106552

### FHA71A9



Notes

- 1) Location of nameplate  
Bottom of the fan housing inside the suction grille
- 2) When installing a wireless controller, there will be a receiver on this location.  
For details, see the drawing of the wireless controller.
- 3) Do not place any objects under the indoor unit. In case of high humidity (>80%), clogged drain outlets, or dirty air filters, condensate may drop out.

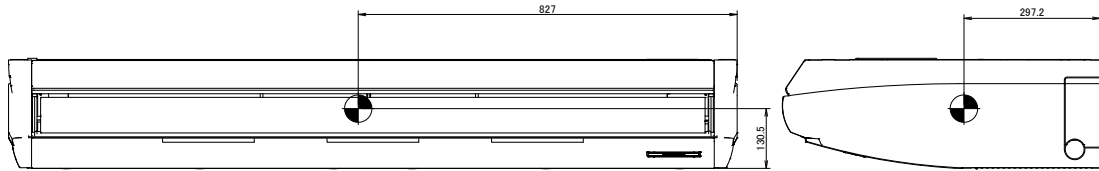
3D109222

# 6 Centre of gravity

## 6 - 1 Centre of Gravity

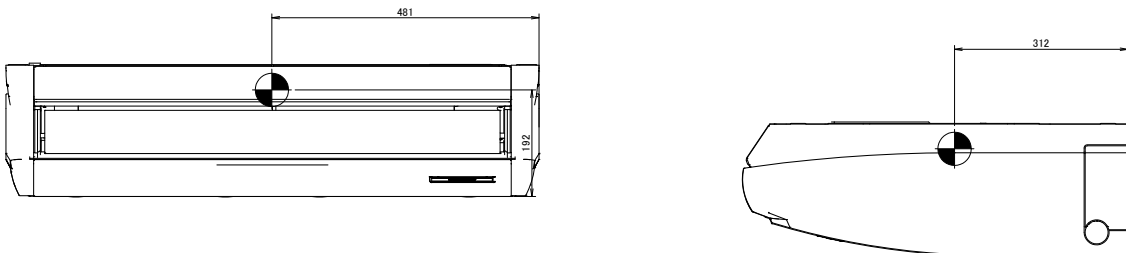
6

### FHA100-140A



3D109249

### FHA35-50A9

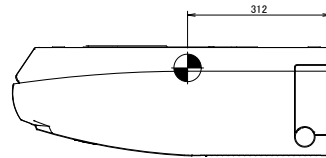
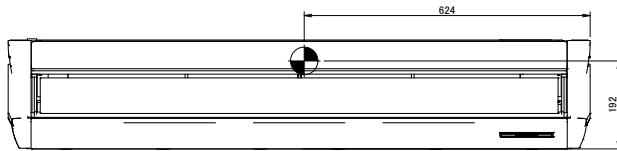


3D106833

## 6 Centre of gravity

### 6 - 1 Centre of Gravity

**FHA60-71A9**



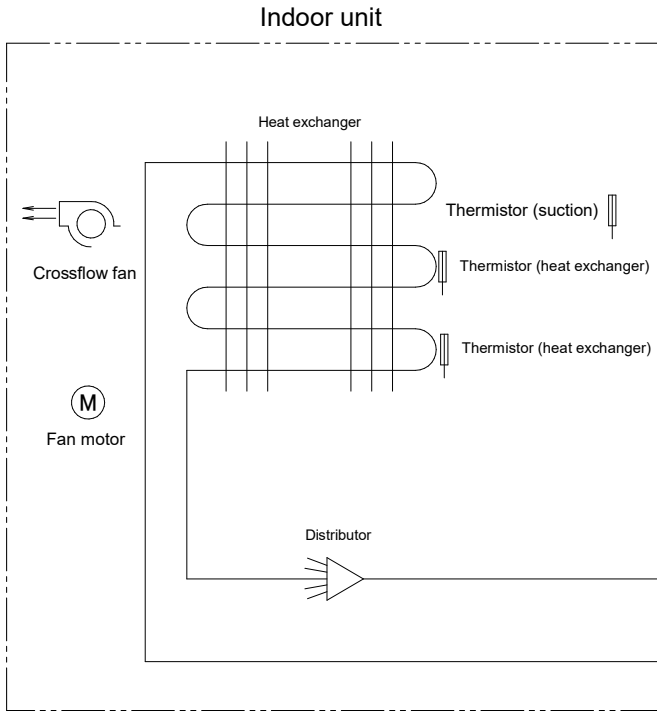
**3D106836**

# 7 Piping diagrams

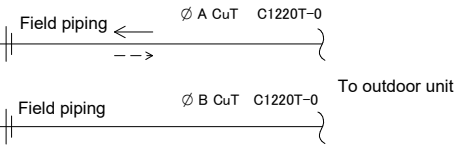
## 7 - 1 Piping Diagrams

7

FHA-A(9)



APPLICABLE MODEL	A (mm)	B (mm)
FHA35A	6.4	9.5
FHA50, 60A		12.7
FHA71, 100, 125, 140A	9.5	15.9



Refrigerant flow

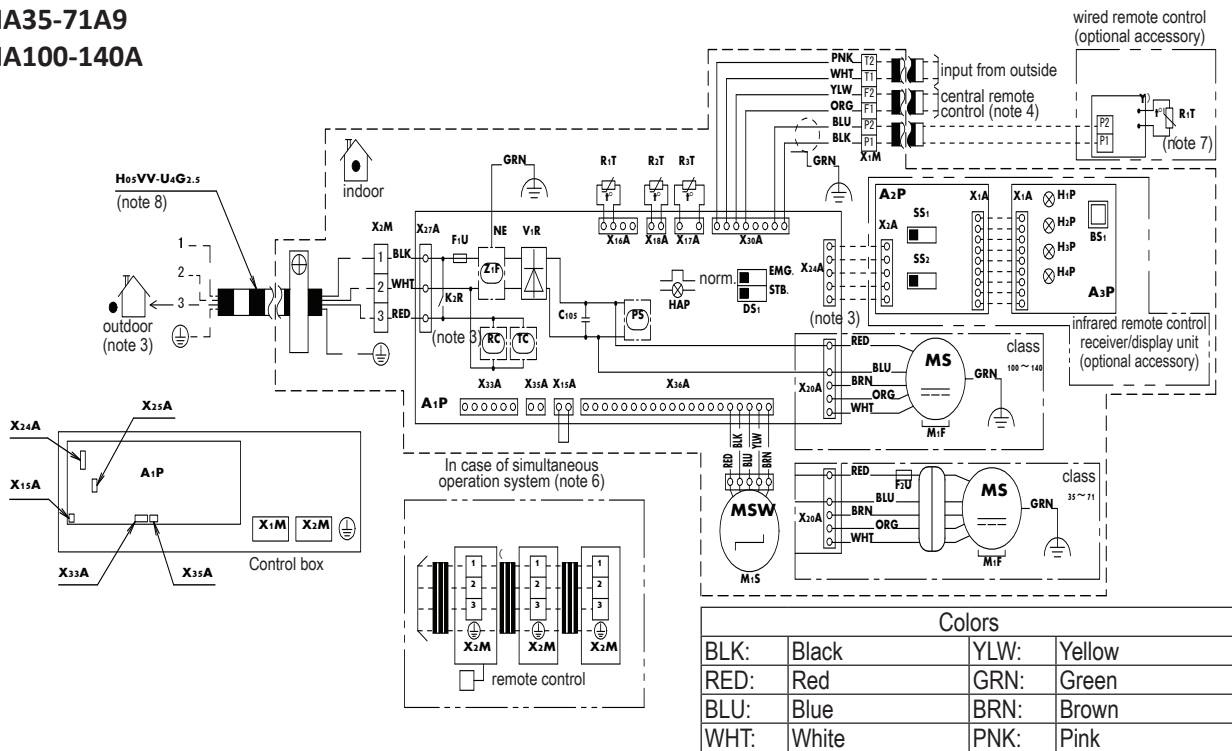
- Cooling
- -> Heating

3D106495B

# 8 Wiring diagrams

## 8 - 1 Wiring Diagrams - Single Phase

FHA35-71A9  
FHA100-140A



Indoor unit		TC	Signal transmission circuit
A1P	Printed circuit board		Wired remote control
C105	Capacitor (M1F)	R1T	Thermistor (air)
F1U	Fuse (F, 5A, 250V)		Infrared remote control (receiver/display unit)
F2U	Fuse (F, 4A, 500V)	A2P	Printed circuit board
DS1	Dip switch on PCB	A3P	Printed circuit board
HAP	Flashing lamp (service monitor: green)	BS1	Push button (on/off)
K2R	Magnetic relay	H1P	Pilot lamp (on: red)
M1F	Motor (indoor fan)	H2P	Pilot lamp (timer: green)
M1S	Motor (swing blade)	H3P	Pilot lamp (filter sign: red)
R1T	Thermistor (air)	H4P	Pilot lamp (defrost: orange)
R2T-R3T	Thermistor (coil)	SS1	Selector switch (main/sub)
V1R	Diode bridge	SS2	Selector switch (wireless address set)
X1M	Terminal block		Connector for optional parts
X2M	Terminal block	X15A	Connector (floatins switch)
Z1F	Noise filter	X24A	Connector (infrared remote control)
PS	Power supply circuit	X33A	Connector (adapter for wiring)
RC	Signal receiver unit	X35A	Connector (power supply for adapter)

### NOTES

- : terminal block, □□: connector, ■■■■■: field wiring, □□: short circuit connector
- In case of simultaneous operation indoor unit system, see the indoor unit wiring only. For the detail, see wiring diagram attached to outdoor unit.
- In case using central remote control, connect it to the unit in accordance with the attached installation manual.
- X15A, x25A are connected when the drain pump kit is being used.
- In case of simultaneous operation system, connected quantity of the indoor units varies according to the connection outdoor unit. Confirm technical guide and catalogue, etc. before connecting.
- In case of main/sub changeover see the installation manual attached to remote control.
- Shows only in case of protection piping, use H07RN-F in case of no protection.

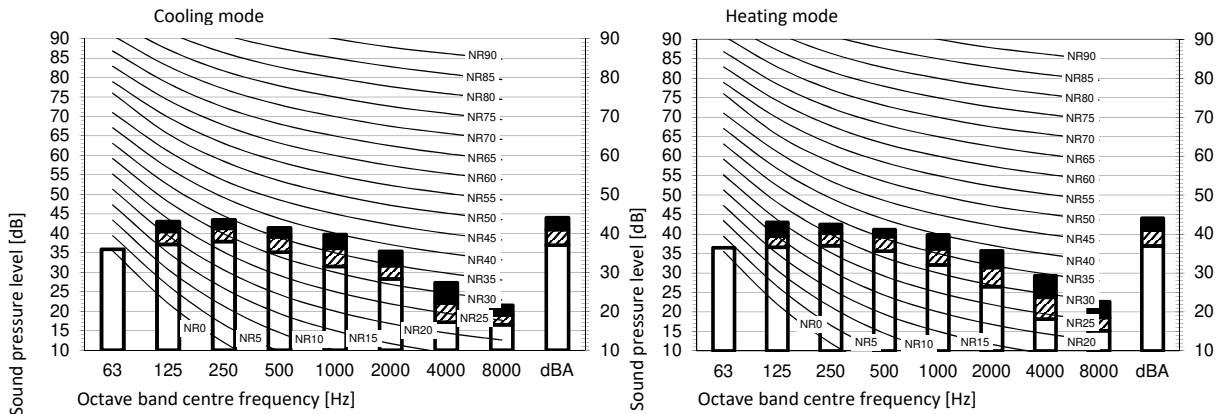
3D110939

# 9 Sound data

## 9 - 1 Sound Pressure Spectrum

9

### FHA125A

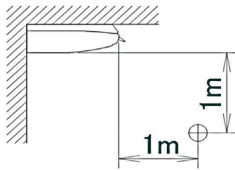


**Legend**

dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed  
 B High  
 C Medium  
 D Low

Location of microphone



Cooling				Total dB			
A	B	C	D	A	B	C	D
dBA	44	41	37				

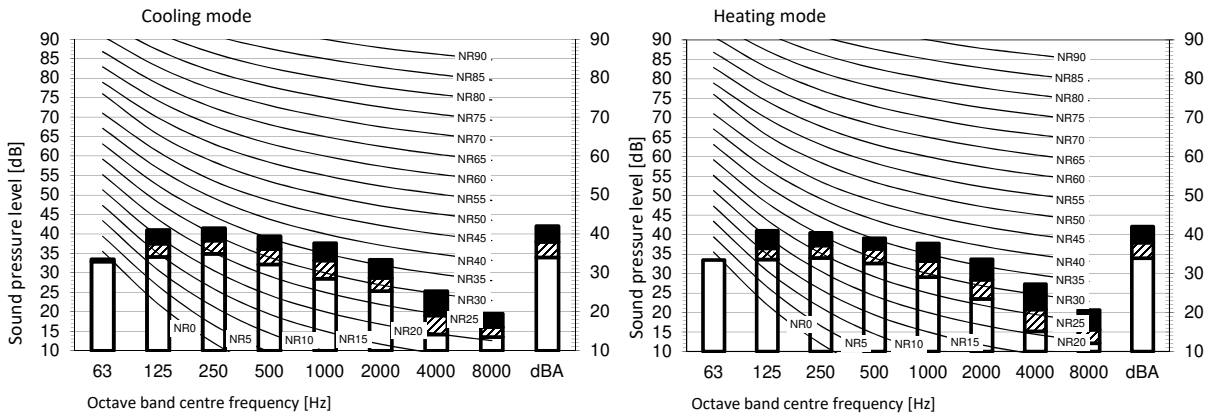
Heating				Total dB			
A	B	C	D	A	B	C	D
dBA	44	41	37				

**Notes**

1. Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
2. Background noise already taken into account.
3. Operating noise varies depending on operation and ambient conditions.
4. The operation noise measuring method is in accordance with JISC9612.
5. Measuring location: anechoic chamber

3D109738A

### FHA100A

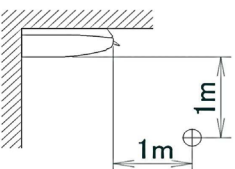


**Legend**

dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed  
 B High  
 C Medium  
 D Low

Location of microphone



Cooling				Total dB			
A	B	C	D	A	B	C	D
dBA	42	38	34				

Heating				Total dB			
A	B	C	D	A	B	C	D
dBA	42	38	34				

**Notes**

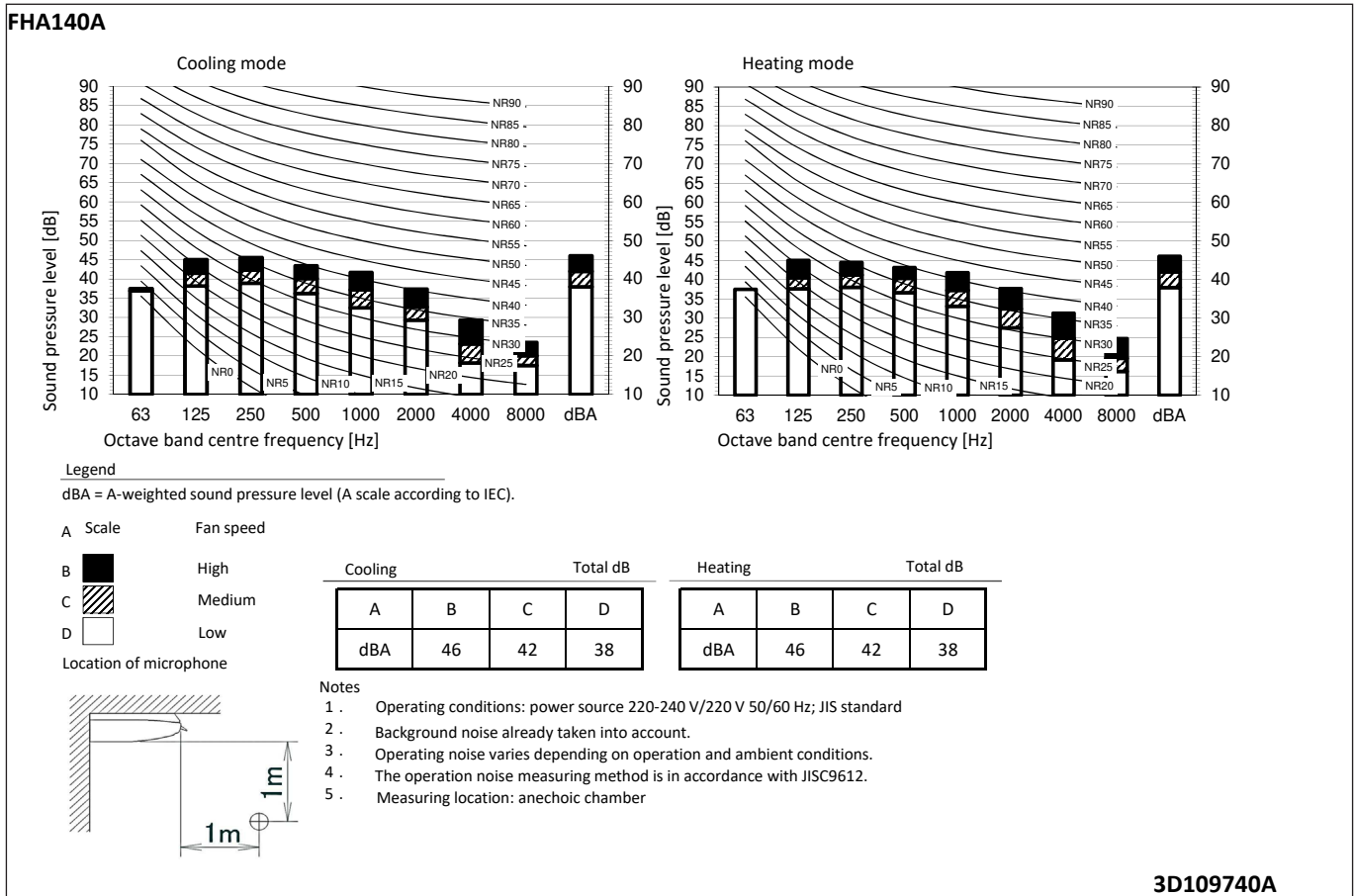
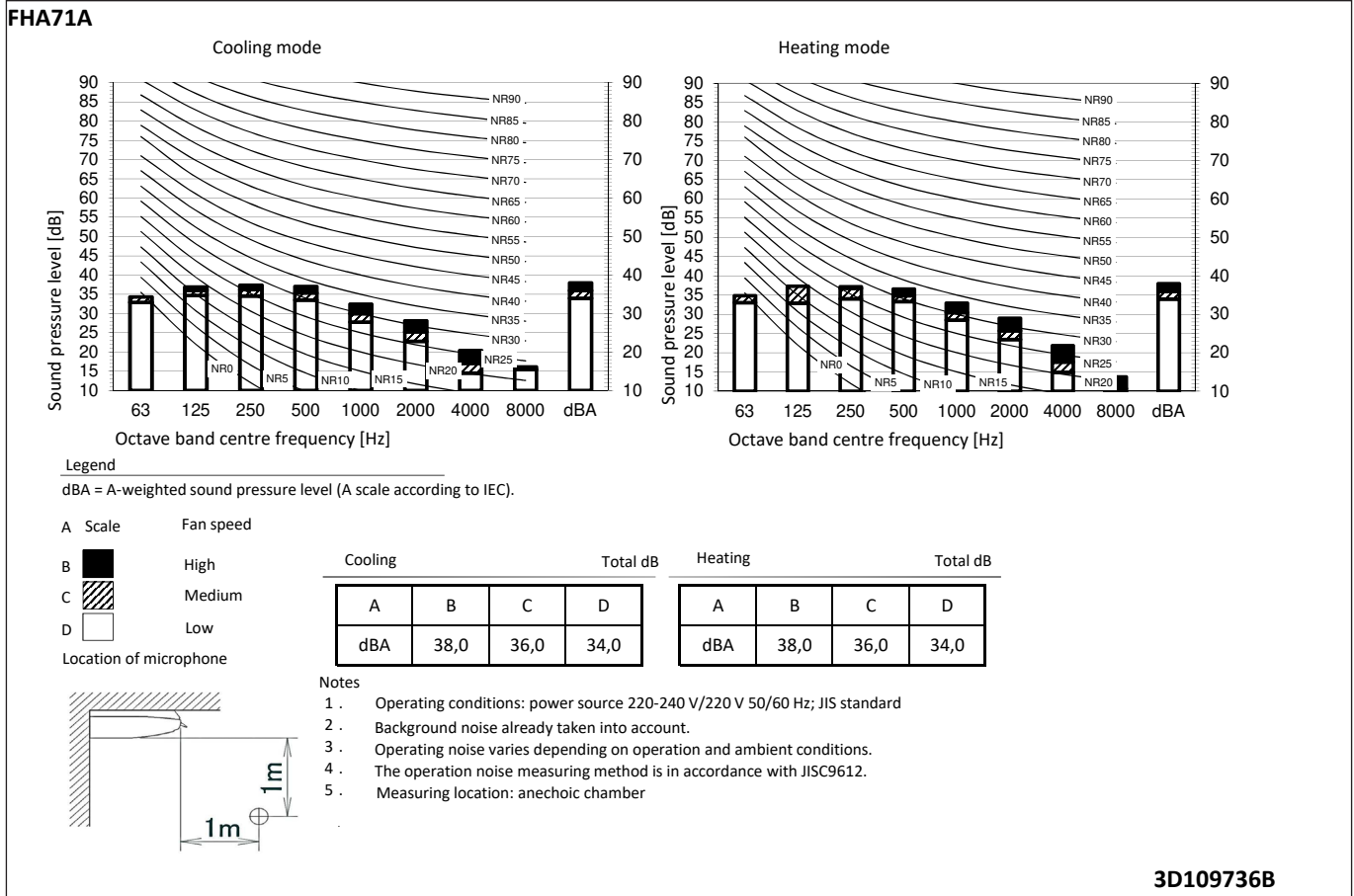
1. Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
2. Background noise already taken into account.
3. Operating noise varies depending on operation and ambient conditions.
4. The operation noise measuring method is in accordance with JISC9612.
5. Measuring location: anechoic chamber

3D109737A



# 9 Sound data

## 9 - 1 Sound Pressure Spectrum

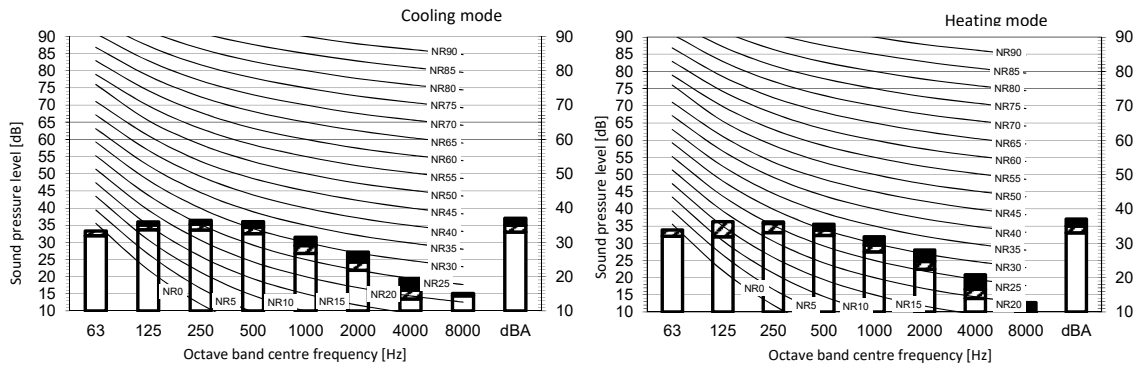


# 9 Sound data

## 9 - 1 Sound Pressure Spectrum

9

### FHA60A9

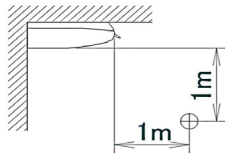


Legend  
 dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed

B High  
 C Medium  
 D Low

Location of microphone



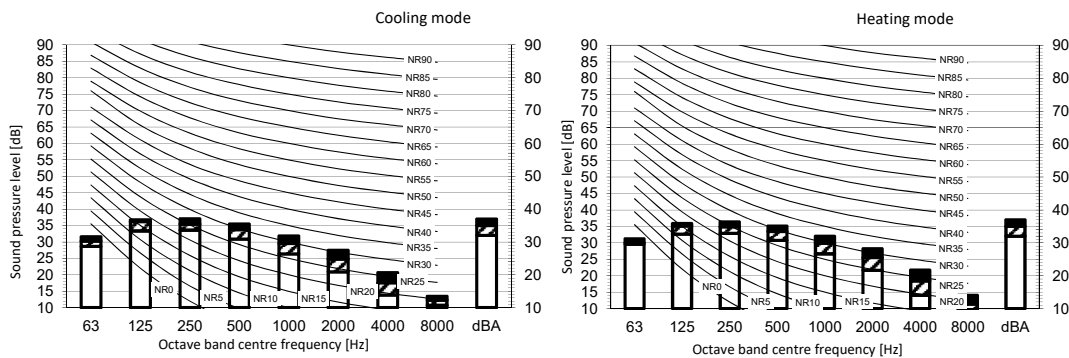
Cooling Total dB				Heating Total dB			
A	B	C	D	A	B	C	D
dBA	37,0	35,0	33,0	dBA	37,0	35,0	33,0

Notes

- Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
- Background noise already taken into account.
- Operating noise varies depending on operation and ambient conditions.
- The operation noise measuring method is in accordance with JISC9612.
- Measuring location: anechoic chamber

3D109741B

### FHA50A9

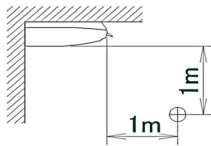


Legend  
 dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed

B High  
 C Medium  
 D Low

Location of microphone



Cooling Total dB				Heating Total dB			
A	B	C	D	A	B	C	D
dBA	37,0	35,0	32,0	dBA	37,0	35,0	32,0

Notes

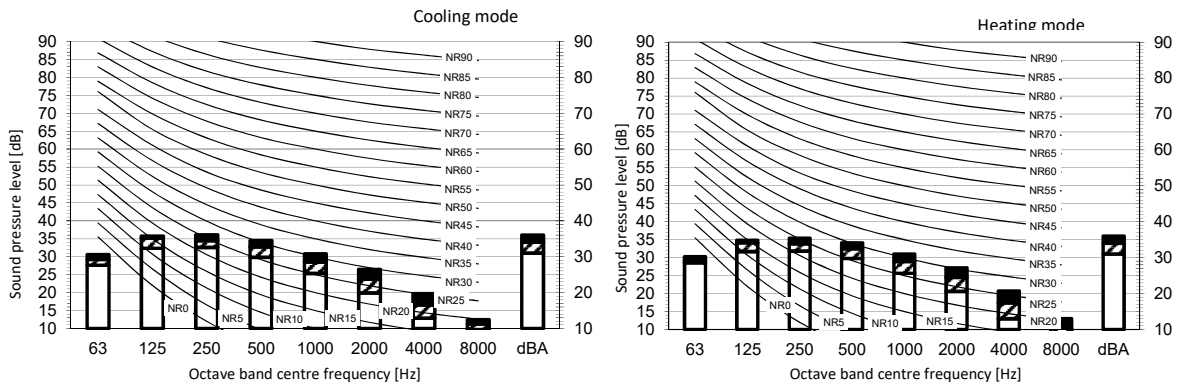
- Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
- Background noise already taken into account.
- Operating noise varies depending on operation and ambient conditions.
- The operation noise measuring method is in accordance with JISC9612.
- Measuring location: anechoic chamber

3D109410B

# 9 Sound data

## 9 - 1 Sound Pressure Spectrum

FHA35A9



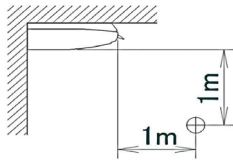
**Legend**

dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale Fan speed

- B High
- C Medium
- D Low

Location of microphone



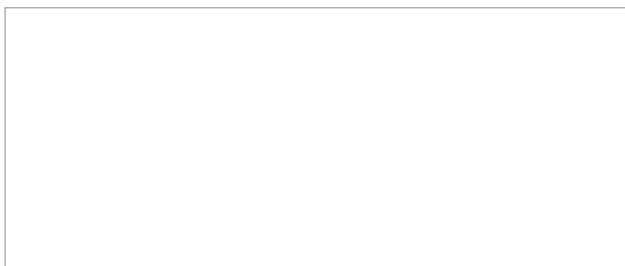
**Notes**

1. Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
2. Background noise already taken into account.
3. Operating noise varies depending on operation and ambient conditions.
4. The operation noise measuring method is in accordance with JISC9612.
5. Measuring location: anechoic chamber

Cooling		Total dB	
A	B	C	D
dBA	36,0	34,0	31,0

Heating		Total dB	
A	B	C	D
dBA	36,0	34,0	31,0

3D109743B



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06/2020



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